Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Faculty of Natural Resources and Agricultural Sciences

Who gets what?
– The community forest user group's role in rebuilding communities

Lova Lind

Master's thesis • 30 credits

Department of Urban and Rural Development
Agriculture Programme – Rural Development
Uppsala 2018

Who gets what?
-The community forest user group's role in rebuilding communities

Lova Lind

Supervisor:	Kristina Marquardt, Swedish University of Agricultural Sciences, Department of Urban and Rural Development
Assistant supervisor:	Dil Bahadur Khatri, Swedish University of Agricultural Sciences, Department of Urban and Rural Development
Examiner:	Örjan Bartholdson, Swedish University of Agricultural Sciences, Department of Urban and Rural Development

Credits:	30 credits
Level:	Second cycle, A2E
Course title:	Master's thesis in Rural Development and Natural Resource Management
Course code:	EX0777
Programme/education:	Agriculture Programme – Rural Development

Place of publication:	Uppsala
Year of publication:	2018
Cover picture:	Villagers reconstructing a house in Ramechhap, Nepal Photographer: Lova Lind
Copyright:	All featured images are used with permission from copyright owner**.**
Online publication:	https://stud.epsilon.slu.se

Keywords:	Community forest user group, forest management, disaster, timber, social inequality, symbolic violence, collective action, access, entitlement

Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Faculty of Natural Resources and Agricultural Sciences
Department of Urban and Rural Development

Abstract

The earthquake and the aftershocks that struck Nepal in 2015 brought destruction to many parts of the country, and still to this day rural communities struggle to rebuild their private houses and return life to what it was. This thesis found that in doing so, the villagers are dependent on resources such as labour, cash, and timber. Drawing on empirical data from four study locations in the mid-hills of Nepal, this thesis then analyses how four different community forest user groups (CFUGs) have responded to the increased demand for timber for reconstruction that arose following the earthquake. Through applying the theoretical lens of collective action, symbolic violence, access, and entitlement, this thesis also traces the possible causes for this response, and how it has affected the different groups in the communities to a different degree. It was found that community attributes such as the size of each forest user group, community heterogeneity as well as physical attributes (community forest composition and condition) have had a possible impact on the CFUG's ability to meet the need of its user household in the event of a disaster. Further, the thesis presents how the policy environment and interaction with other forest management institutions, both contemporary as well as historically, can affect the way the CFUG relate to the forest.

Keywords: Community forest user group, forest management, disaster, timber, social inequality, symbolic violence, collective action, access, entitlement

Acknowledgments

I wish to express my heartfelt appreciation and gratitude towards all of the persons and organizations who assisted me on this journey. I am indebted to the residents of the four villages in Ramechhap for your participation, it is your contributions that made this thesis possible. In addition, I am especially thankful for the guidance and time contributed by Kristina Marquardt and Dil Khatri, my supervisors, at all stages of writing this thesis. I would also like to express appreciation towards the entire PECA research team, who enabled me to write this thesis within the project.

Secondly, I want to express a thank you to ForestAction, who provided me with invaluable context and expertise regarding the Nepalese community forestry. I am grateful for the assistance and insight, and humbled by the warm welcome I received by all staff members during my time in Kathmandu.

Finally, sincere and heartfelt gratitude is expressed to Sanjaya Khatri and Sadhana Ranabhat, for your partnership. Without your knowledge and effort, this field study would not have been possible. Moreover, thank you for making our time together a memorable experience.

Table of contents

List of tables and figures

Tables

Figures

Abbreviations

AFO	Assistant Forest Officer
CFUG	Community Forest User Group
CF	Community Forest
CPR	Common pool resources
DFO	District Forest Office
DoF	Department of Forest
FECOFUN	Federation of Community Forest Users, Nepal
MSFP	Multi stakeholder forestry program
MPFS	The Master Plan for the Forestry Sector
MFSC	Ministry of Forests and Soil Conservation
NSCFP	Nepal Swiss Community Forestry Project
NGO	None Governmental Organization
NTFP	Non- timber forest products
OP	Operational Plan
SDC	The Swiss Agency for Development and Cooperation

1 Introduction

The first location I visited during the field study in Nepal, the Sundari CFUG, was beautifully situated on the mountainside, surrounded by a mosaic of dense forest and agricultural land formed in terraces. In the village centre, there were many of the scenic three-story houses traditional to Nepal's rural areas, painted in white and maroon with turquoise details. At first glance, the scenery seemed idyllic. It was only when I came in contact with the villagers and heard their stories that I understood that village life had just begun to return to normal from the very difficult period that followed the 2015 earthquake. I was told how the families fled their houses after the major earthquake and moved to small temporary cottages built from bamboo and tarpaulin, where they then remained for months, and even years, in fear of aftershocks. Some of the villagers had not been able to rebuild or mend their house and so still lived in their bamboo cottage at the time of this field study in the early spring of 2018. Others had been forced to move back into their wrecked houses due to the cold winter months. It was obvious that although the village luckily had suffered no human casualties, the earthquake had a large and lasting effect on the community and still to this day affected the villagers' wellbeing. By witnessing this I began to wonder about what factors restrained the households from rebuilding their houses. Different households had been more or less successful in doing so, and thus, what local circumstances affected access to timber and the ability to reconstruct housing?

1.1 Research problem

The major earthquake that struck the central regions of Nepal in the 25th of April 2015, later followed by a row of aftershocks, affected approximately 8 millions of people throughout the country (FAO, 2018). The earthquake also caused damages to livestock, food and seed stocks as well as standing crops and an estimate of 600,000 family homes (NPC, 2015). There was also considerable destruction to infrastructure including farming terraces, irrigation systems and cracks in the planting surfaces to both *bari* (unirrigated rain-fed fields; typically used to cultivate maize and millet) and *khet* (irrigated) planting systems (DiCarlo et al., 2018), which further intensified the problems faced by agriculture-dependent communities and households, leaving poor families even more vulnerable (FAO, 2018).

The effect of natural disasters, such as the earthquake, have been proven to correlate conditions of vulnerability resulting from poverty, social inequality, political instability, and

environmental degradation. An earthquake is likely to affect local communities, politics and social life for years afterwards, and economic losses as direct consequences of such disasters affect national budgets as well as low-income households (Ullberg, 2013). Rural subsistence-based populations are typically among the most vulnerable to disasters and, in Nepal, smallholder-farming communities in the mid-hills near the epicentre of the earthquake were devastated (Epstein at al., 2018). The material used in the construction of houses tend to reflect the economic status of the household. Results from "A study on the Socio-Economic Status of Indigenous Peoples in Nepal" (2014) showed how the building quality of houses varies across ethnicities, and states that 80 percent of Nepal's indigenous population lived in unsafe or low-quality houses (Subba et al., 2014). The 2015 earthquake can thus be regarded as an example of a natural event with an explicit social impact, affecting the most vulnerable sector of the population the hardest.

Local resource management institutions have played an important part in communities' ability to adapt to change following a disaster or crisis (Berkes & Jolly, 2002). This is also true in Nepal, where some community forest user groups (CFUGs) have had an important role in effectively distributing resources before others (the government and outside NGOs) in the time following the 2015 earthquake (Epstein et al., 2018). In Nepal, poorer households have shown to have a greater overall dependency on forest products to meet subsistence household needs and forest use is thus socially differentiated (Ojha et al., 2009). As examined in this study, different households also have different abilities to access the resources they need in times of crisis. This thesis is about four CFUGs in rural Nepal and their ability to respond to the rise in demand for timber following the earthquake. The thesis focuses mainly on the facts given by the CFUG executive committee in each village, but also on stories from user households and their told experience with the CFUG after the earthquake.

1.1.1 Purpose, objective and research question

Research conducted on the topic of disaster politics is commonly aimed at understanding and analyzing patterns of economic and social vulnerability preceding the actual event of a disaster (see Birkmann, 2006), and some are extended to also include post-disaster competition for resources and power (see Özerdem, & Jacoby, 2006; Pelling & Dill, 2009; Pelling & Dill, 2006). In their study, Pelling and Dill (2006) noted that politically peripheral regions (remote rural regions) often are hit hardest by disasters. In this way disasters can highlight ethnic/class inequality and feed into already ongoing political struggles. To add to this previous work this thesis, therefore, has three main objectives. First, to investigate which households in the villages that have access to what resources needed for reconstruction. Secondly, to examine forest management policies leading up to, and following, the earthquake in 2015 in four CFUGs in the Ramechhap district in Nepal. This to be able to trace

the strategies taken by CFUGs to address the demand of the user households and to also study the effect these decisions have had on local households' access to timber for reconstruction. Third, this thesis will, in a broad and overarching way, investigate what different conditions in the user groups and surrounding policy environment that caused the CFUGs to respond in the way they did. By focusing on these critical questions, the current policies in Nepalese forest management can be evaluated for their ability to transfer natural resources to communities, empower the marginalized groups, and deliver services through community-based organizations in the time following a disaster.

1.1.2 Research question

The inquiry in this thesis is guided by the following questions.

- What are the local conditions and restraints for households to reconstruct private houses?
- How have the CFUGs been responding to the increased demand for timber for rebuilding houses damaged by 2015 earthquake?
- What factors potentially shaped this specific response from the CFUGs?

1.2 Thesis outline

Chapter two of this thesis gives an overview of social, political and economic conditions in Nepal as well as a background of the CFUG as an institution. Chapter three describes the theories and concepts used to analyze the material from the field study. Chapter four presents the research methods used in the field study in Nepal, as well as the methods for analyzing the gathered material. Chapter five presents the findings from the nine-week long field study in Nepal in four main sections: first, a background description of the four CFUGs, their community composition and how the different groups in the respective villages gained access to timber for reconstruction. Second, a presentation of the history of the community forest and a description of the community forest resources. Third, a description of the present provision of timber as stated in the operational plans (OP) of the four CFUGs, followed by a presentation of how the respective CFUGs have handled the increased demand on timber from the CF after the 2015 earthquake. Fourth, a summary of the community and physical attributes combined with the interaction with forest management institutions, and how they interact to create a disjuncture between the CFUGs operational plan and what was performed in practice. In chapter six, there is a discussion analyzing the findings in relation to literature and the analytical framework. Lastly, a conclusion summarizes the discussion and reconnect to the three research questions presented above.

2 Background

Positioned between the Tibetan region of China and India, Nepal is located in an area of intense seismic activity that results from the tectonic collision of the Indian and Eurasian plates. This makes Nepal the 11th most earthquake-prone country in the world (NPC, 2015). Nepal's political system has undergone a major transition since the beginning of the 1990's. In 1996, a Maoist rebellion began in the remote hill districts of the Mid-Western region and later intensified and spread across large parts of the country. It is estimated that more than 14,000 Nepalese were killed in the conflict and about 600,000 were internally displaced or made homeless. Fighting occurred largely in rural districts, greatly affecting agriculture and rural livelihoods, until November 2006 when a comprehensive peace accord was signed between the then Royal Government and the Maoists insurgents. In 2006 a seven-party coalition took control of the Nepali government and stripped the King of most of his powers, and so put an end to a 240-year-old monarchy. Two years later, in 2008, elections were held and the Maoist party secured a largest-party status. At this time the newly elected Assembly declared Nepal a Federal Democratic Republic (Nightingale & Ojha, 2013; FAO & IFAD, 2015).

2.1 Demographics and social groups

Being a part of the Himalayan mountain chain, Nepal has large differences in altitude within the country (World Bank, 2018). The largest part of the Nepalese population lives in the plains, a less hilly and very arable area in southern Nepal, also referred to as Terai. Meanwhile, 43 percent live in the hill areas (up to 2500 meters) and 7 percent in the Himalayan mountains with an altitude above 3000 meters (NPC, 2015). Nepal is considered a low-income country, but the country is rich in natural endowments, with a per capita water availability and forest coverage ratio which is more than twice the South Asia average (World Bank, 2018). The population has a high level of social, cultural, and ethnic diversity with more than a hundred caste and ethnic groups and 123 mother tongue languages (FAO & IFAD, 2015). Social inequality is deeply rooted and multifaceted in Nepal to this day. Despite the fact that discrimination on the grounds of caste officially is illegal in Nepal it is, in fact, widespread, especially in rural areas. This form of social discrimination plays a significant role in keeping the most disadvantaged people poor and marginalized. The most excluded groups are considered to include smallholder farmers, landless labourers, lower castes, indigenous peoples and women (Thoms, 2008; FAO & IFAD, 2015; Christoplos & Pain, 2015).

The lowest caste, the Dalits, includes a range of professions including among others blacksmith, tailor, sweepers and butchers, and within the Dalit caste, there are also categories which also have differentiated status. This caste has also been labeled as "untouchables". On the top of the Hindu caste system is the Brahmin caste, professionally belonging to the priest class. Second in status is the Chhetri caste, traditionally tied to the ruling and soldier professions (Cameron, 1998). The Janajati group refers to the wide range of different indigenous people native to Nepal, including among others the Newars and other hill dwelling Janajati like Magar, Gurung, Bhujel and Tamang. Each group characterized by their unique language, traditions, and history (Cameron, 1998; HURDEC Nepal & Hobley, 2012; Subba et al., 2014).

As in many other countries in the region, a large part of the Nepalese population is living in rural areas and make their living through subsistence farming with generally very small landholdings. In 2015 it was estimated that 70 percent of households have land-holdings of less than 1 hectare, and generally many depend on plots that are insufficient to meet their requirements for subsistence. (FAO & IFAD, 2015; DiCarlo et al., 2018). In recent years the agrarian nature of Nepal has begun to show a different trend with a growing urban-based service sector and above all Nepalese working overseas, providing remittances that contribute to approximately 29 percent of the GDP (CBS, 2011). In 2015 nearly 44 percent of the Nepalese households had a family member living away from home, and migration has so become a key strategy for households to ensure food security (FAO & IFAD, 2015; Pain et al. 2015). There have, however, been less of a positive change for the most marginalized groups; low casts, women, and groups without land. These groups, that also have proved to be most vulnerable to food insecurity, have fewer opportunities to find non-agricultural labour opportunities due to gender or caste discrimination (Pain et al. 2015). Epstein et al. (2018) state how the transition from self-provisioning to a greater engagement with the cash economy may, in fact have been hastened in Nepalese communities they examined, as a result of the damage from the 2015 earthquake.

Labour availability is central to crop cultivation in rural communities in Nepal. In the current period of reconstruction, the need to rebuild homes intensifies labour shortages in many villages. Farms in the mid-hills traditionally rely on family and local labour for the gathering of forest materials, crop production and tending to livestock. However, following the 2015 earthquake, the already absent labour force decreased even further due to reconstruction, ultimately resulting in an escalating price for labour. Following the earthquake, daily wages increased significantly from 200–300 Npr (1.7-2.5 USD) to 400–500 Npr (3.4- 4.3 USD) per day for female labour, and 400–500 Npr to 800–1000 Npr (6.8- 8.6 USD) per day for male labour. With many men being away, working overseas and in the larger cities, the

feminization of agricultural labour has put increasing pressure on the workload of women and older children (DiCarlo et al., 2018).

2.2 Community Forestry in Nepal

The community forestry programme, introduced in the 1970s, was adopted with the vision to change the forest management from centralized government control to local user groups and so make local communities become active participants in management. At this time the deforestation in the Himalayan region was acute and the community forestry programme was adopted with the goal to enhance conservation. Prior to this, most forests were national forests managed by the government, and the handover of National forests to the communities and the CFUGs progressed gradually (FAO & IFAD, 2015). Technical and financial support initially came from international agencies, but the community forestry programme has gradually moved towards being sustained mainly by local institutions (Ojha et al., 2009; Ito et al., 2005).

To date, a total of 19.361 CFUGs have been formed, together managing a total of 1.813.478 ha forest (DoF, 2018). In the agrarian Nepalese economy, livestock, agriculture, and forests form complexly linked essential components. Farmers who practice subsistence farming rely on forests for non-timber forest products (NTFP) such as grass and fodder to feed their livestock, leaf litter as well as firewood which still remain the main source of energy for cooking and heating in many villages. The forest also provides timber for construction of houses and sheds for livestock keeping (Paudyal et al., 2017; Marquardt et al. 2016; Ojha et al., 2009; Adhikari et al., 2004). Therefore, income from community forestry provides a wide range of products and services that are indispensable to rural households in Nepal. Community forestry has shown to be an important variable in improving and diversifying livelihoods, both directly through the promotion of wild edibles and indirectly by providing different forms of financial and social safety nets to the poor. However, the number of products extracted and total monetary value often vary by household wealth (Ojha et al, 2009; Marquardt et al. 2016; Paudyal et al. 2015). Timber from the community forest does require a relatively large up-front cost compared to other non-timber forest products (NTFP) and are thus easier accessible for wealthier households. This while poorer households have shown to have a greater overall dependency on forest products to meet subsistence household needs (Ojha et al., 2009).

The CFUGs are able to retain all revenues generated from their forest area, but they have to designate 25 percent of their income for forest development. Such development activities can,

for example, include water distribution within the village, maintaining physical infrastructure like canals for agricultural land, roads, schools, as well as providing microfinancing for user group members (Ojha et al., 2009)

2.3 Community forest user groups

The Forest Act 1993 and Forest Regulation 1995 provide the policy framework for the Nepalese community forestry (Ojha et al., 2007). The Forest Act states that a group of households requesting to form a community forest user group (CFUG) shall prepare a constitution, defining the social arrangements, responsibilities, and rights of the group, and submit it for registration at the local District Forest Office (DFO), which then provides a certificate of registration. The DFO has the authority to hand over part of the National Forest to a group of local people. The new CFUG then prepares an Operational Plan for forest management: CFUG activities and rules of forest product utilization. The Operational Plan must be signed and approved by both the CFUG and the DFO, and as long as the user group work according to the mutually developed Operational Plan, the forest land cannot be taken back. In those cases when the area is taken back, the DFO is obliged to facilitate the creating of another committee and hand over the forest again as community forest (Ojha et al., 2007; FAO & IFAD, 2015).

In the described process, the CFUG receives technical assistance from both forest officials, donor organizations and nongovernmental organizations (NGOs) (Ojha et al., 2007). The Swiss Agency for Development and Cooperation (SDC) has supported the Community Forestry Program in Ramechhap districts of Nepal since 1990, through the Nepal Swiss Community Forestry Project (NSCFP) (Ito et. al., 2005). In current time, the SDC is active in the Multi-Stakeholder Forestry
Programme (MSFP) which builds on the learning of NSCFP (Carter et al., 2011). The involvement of development aid can be regarded as having highlighted the conservationist mindset that ultimately helped to reinforce the importance of ‘expertise', resulting in a forest management that relies heavily on technical experts and long and bureaucratic processes. This is visible in the weight put on management plans, training, and record keeping as well as the norm of decentralization (Nightingale & Ojha, 2013; Ojha, 2006). The state Master Plan for Forestry Sector policy in 1989 envisioned all accessible forests in the hills being handed over to communities of user groups, and the Forest Act from 1993 and Forest Regulations 1995 provided full authority to the CFUGs for management of forest resources (Gurung et al. 2011; FAO & IFAD, 2015). However, the state retains ownership of forests, and the CFUGs are

therefore required to pay taxes to the government when they sell any forest products outside the user group (Ojha et al., 2009).

In the late 1970s and onwards, there was a rapid expansion of community forests in Nepal, particularly in the mid-hills, and the need for CFUG networking emerged. A nationwide Federation of Community Forestry Users, Nepal (FECOFUN) was established in 1995. Since its inception in 1995, the federation has been playing a key role in policy development and governance practices, and proven its worth in advancing the interests of the resource users beyond the community user group level, both in forestry sector policy-making as well as economic arenas (Ojha et al., 2007). Activities vary from local to national level and include advocacy, mediation, awareness raising and legal advice (Ito et al., 2005). FECOFUN has, through political activism and lobbying, been challenging the dominant technocratic view by pushing for local participation in policy-making processes nationwide (Ojha et al., 2007).

3 Theoretical framework and concepts

Nepal is often considered a global success story for its community forestry programme, having been largely successful in promoting forest conservation while also providing support for rural livelihoods across of the country (Ojha et al. 2009; Nightingale & Ojha, 2013; Negi et al., 2018). However, a major challenge for the Nepalese CFUGs is the distribution of resources across different groups within society, including gender, caste, ethnicity, and class. The stratified nature of the Nepalese society and the social hierarchies determine the access of people to forest resources and the decision making concerning the forest resources (Thoms, 2008). A fair system of resource management is often considered difficult, and many common pool resources (CPR) institutions struggle to handle the diversity of interests and values among stakeholders. In general, it is fair to say that community-based property rights over natural resources do not guarantee equity of resource distribution (Adhikari et al., 2004).

The CFUGs have been known to face both external and internal issues of power and authority. The Nepalese caste system is structured by an ideology in which ritual purity encompasses power. This is illustrated in how the highest caste, the Brahmins, is considered to be the most ritually pure but does not, for this reason, have economic and political power. It is common, however, that the level of economic wealth corresponds to the position in the caste system (Cameron 1998; Fox 2016). The forms of power derived from the Nepalese social structure is in many ways particular to the Nepalese society and have proven to have resonances within the CFUGs as well (Nightingale & Ojha, 2013). Each CFUG elects an executive committee to carry out day-to-day decisions about forest management on behalf of the entire CFUG, usually, a group consisting of 7-13 individuals (Ojha et al., 2009). Studies have shown how the executive committee often is dominated by village elites and traditional decision makers (Adhikari et al., 2004). Although, at present time there are regulations enforcing 50 percent female participation in the executive committee as well as proportionate representation of traditionally marginalized people like Dalits, Janajatis and indigenous people (Kathmandu Post, 2018). Historically this has not been the case. In their analysis of representation in CFUG committees, Adhikari et al. (2004) found that the representation of female and lower caste Dalits households were 15.7 percent respectively 9.6 percent. In those cases they are represented in the committee, women and members of disadvantaged groups are not frequently heard to the same extent in decision making processes such as executive committee meeting and user group assemblies (Adhikari et al., 2004; Carter et al., 2011).

The CFUGs are in all actions regulated by the surrounding policy environment, making *symbolic violence* a relevant section of this theoretical framework. The CFUGs ability to

respond to the 2015 earthquake is estimated here by the institution's ability to meet the demand of timber, which is why the second part of the analysis will be theorizing about *collective action*. Ultimately, whether or not the user households receive timber to reconstruct their private house is also a question of access to- and control over resources, which is why the second part of the theoretical framework will be guided by the much intertwined theories on *access* and *entitlement*. The above-mentioned theories will be explained below under separate headings.

3.1 Symbolic violence

This theoretical framework has its foundation in Bourdieu's understanding of human agency, where actors perform a significant degree of internal structuring while engaging with wider social structures. And so taking for granted that people draws on cultural codes, both consciously and unconsciously, to exercise power over others, which leads to certain forms of authority and power relations in a community (Bourdieu, 1998; Nightingale & Ojha, 2013). Nepalese forest management, like most co-management systems, is composed by a rich variety of actors coupled to one another by a significant number of relations involving the State, local resource users, commercial actors, NGOs and private actors (Carlsson & Berkes, 2005). CFUGs, the DFO, and NGOs like the FECOFUN, are institutions that have proven to be able to claim authority (Nightingale & Ojha, 2013). The practices of community forestry are in many regards heavily dependent on experts' knowledge and technical expertise, especially in the creation of a new operational plan. On the higher level of policies and directives, there are contradicting regulations regarding the CFUGs autonomy, illustrated in how the Forest Act of 1993 recognizes the CFUG as a self-governed institution, while the Community Forestry Program directives of 1995 (clause 3c) enable DFOs to set the specific conditions for community forest management. In addition to this, inventory guidelines allow forest officials to decide the amount of forest product which is to be harvested (Ojha et al., 2009).

Bourdieu describes a doxa as "…a particular point of view, the point of view of the dominant, which presents and imposes itself as a universal point of view..." (Bourdieu, 1998:57). A doxa, if shared, can underpin social practices in a particular field. Seen from Bourdieu's cultural theory of practice, the techno-bureaucratic management can, for example, be regarded as a doxa which has historically been embedded in the ways of thinking and acting within Nepalese forest management institutions. And, of the same importance, embedded in the minds of the powerful groups who support it (Bourdieu, 2001: Ojha, 2006). Symbolic violence is a situation when one group enjoys specific privileges without the recognition, or

resistance, from "the other" (in this case common people in the villages). Bourdieu (1991), describes the symbolic violence as:

> *"... a gentle violence, imperceptible and invisible even to its victims, exerted for the most part through the purely symbolic channels of communication and cognition (more precisely, misrecognition), recognition or even feeling"* (Bourdieu, 2001: 2).

Individuals who are rich in social and economic capital have been known to have greater ability to exercise symbolic violence by repressing competing values in decision-making contexts, like the CFUG executive committee (Bourdieu, 1998). By analyzing the four CFUGs, and their relationship with the surrounding policy environment with Bourdieu's symbolic violence, a greater understanding of the CFUGs room for manoeuvre is possible.

3.2 Collective action

This thesis focuses on collective action in the management of forest commons as well as reconstruction in Nepal following the 2015 earthquake, and other aspects of collective action in the communities have been excluded. Being a construct of collective action, the CFUG itself can be regarded as a testament to how the four communities have been able to work together successfully for many years. This thesis, additionally, focuses on how the CFUG as an institution undertook collective action in the time following the 2015 earthquake.

In 1965 Mancur Olson challenged the then great optimism expressed in theoretical approaches that analyses group dynamics, which generally took for granted how individuals with common interest would voluntarily act to try to further those interests. Instead, Olson developed a view that pointed out the difficulty of getting individuals to pursue their joint welfare, and in doing so challenged the presumption that the possibility of a benefit for a group would be sufficient to generate collective action to achieve that benefit (Olson, 1965; Ostrom, 1990). Challenging the notion of tragedy of commons (Hardin, 1968), Elinor Ostrom (1990) put forward the most significant analyses of local, community-based efforts to manage and govern common- pool resources (CPR). She developed eight design principles crucial for successful collective action and robust CPR institutions. Of the eight, seven are mainly focusing on local institutions, or on relationships within the local context. Most relevant for this thesis, however, are the first three;
1) The group of users must be clearly defined, as must the boundaries of the CPR itself.
2) There must be a correspondence between appropriation and provision rules and local conditions (as in the quantity and size of the resource).

3) Collective-choice arrangements were individuals affected by the operational rules can participate in modifying them. Additionally, the last two of the principles point out the significance of legal recognition of the autonomy of the institution by higher-level authorities and underline the impact of the relationship with authorities (Ostrom, 1990:90).

Ostrom has also brought up group heterogeneity, within and between communities, as an important factor to observe when analyzing collective action in CPR institutions. This, as the perceived cost of overcoming heterogeneity, can be substantial (Ostrom, 1990). Additionally, it is a factor to take into consideration as certain groups within the village often are differentially impacted by decisions connected to forest management and distribution of resources (Varughese and Ostrom 2001; Nagendra, 2011). Nepalese villages should not be regarded as homogeneous units, this as each actor within a village will vary in his or her own perception of the costs and benefits of community action, which will influence the degree to which they choose to participate in such activities (Ostrom 1990; Varughese and Ostrom 2001; Nagendra, 2011). Heterogeneity, can be used to describe inequality between individuals where interaction generates greater privileges for some than for others. This results not only in the asymmetrical distributions of resources and power but also in different preferences (Negi et al., 2018). Commonly used indicators of intra-community heterogeneity are differences in socio-economic status and endowment, including access to land and common property resources such as community forests, and heterogeneity in entitlements (agricultural income and livestock holdings). Heterogeneities in sociocultural backgrounds, such as caste and ethnic group, is also important as it can shape differences in trust, social capital, and worldviews on the importance of a forest, as well as the need for sustainable collective management (Nagendra, 2011).

3.3 Access and Entitlement

As forest management institutions, the four CFUGs of this study have the means to shape the ways in which different actors in a community access, use and derive entitlement (or well-being) from environmental resources and services (Leach et al., 1999). The Entitlement approach was first developed by Amartya Sen in an attempt to explain how it is that people can starve although there is in fact not a lack of food, but rather as a result of a collapse in their means of command over food (Sen, 1981). Sen puts emphasis on the more fundamental issue of how particular individuals and groups of people in communities gain access to and control over food; "scarcity is the characteristic of people not having enough..., it is not the characteristic of there not being enough" (Sen, 1981:1). Adding to this research, Leach et al. (1999) explain how rights to resources, such as community forest, do not guarantee direct

benefit as in access to timber. He describes how endowments depend on a number of factors besides the distribution, and may or may not translate into entitlements. Endowments are here referring to the actual rights and resources that social actors have, and entitlements can be defined as “alternative sets of utilities derived from environmental goods and services over which social actors have a legitimate effective command” (Sikor & Nguyen, 2007:2011; Leach et al., 1999).

In the context of Nepalese community forestry, a household’s entitlement to timber can appear to be depending solely on the village, and more specifically CFUG, membership. However, rights to access (endowment) need to be converted to benefits (entitlement) through the CFUG institution, which can either work to enhance or restrict the benefit. Leach et al. (1999) present a framework, named ‘environmental entitlements', which draws on the entitlement analysis framework first developed by Sen (1981). The framework attempt to explain why it is that even clearly stated rights to resources do not guarantee to yield livelihood benefits from the same. Additionally, the framework underlines the importance and role of institutions for either restricting or enhancing individuals' ability to benefit from a resource (Leach et al., 1999). In line with this perspective, Ribot and Peluso (2003) described how access to a resource is different from property, and should be defined as "the ability to derive benefits from things" instead of the more traditional definition of property which is "the right to benefit from things" (Ribot and Peluso, 2003:154). By focusing on the ability rather than rights, this theory highlights the social relationships that work to constrain or enable individuals to benefit from resources. Eventually proving how some people and institutions control resource access, while others must maintain their access through those who have control (Ribot and Peluso, 2003).

4 Methodology

To be able to investigate the three research questions, a qualitative field study in Nepal was conducted to gather empirical material. The research was carried out in collaboration with the Nepalese non-governmental organization ForestAction (FA), whose employees contributed to research material, contacts and expert knowledge. The field study was conducted with one staff member from FA as well as a Nepalese student currently studying at undergraduate level in the Institute of Forestry in Pokhara, Nepal.

4.1 A field study in Nepal

The field study was carried out in the district of Ramechhap, chosen for being one of the districts in Nepal most affected by the 2015 earthquake as well as an area where community forestry is widespread. The district of Ramechhap is number eight in the ranking of Government priority districts for emergency response, with a total of 39,916 damaged households. Four out of five people in the worst affected districts depend on agriculture and livestock for their livelihood (FAO, 2018). The rural population in Ramechhap, as in other areas of the in the mid-hills, is settled in a mosaic landscape consisting of patches of forest, agricultural land, and scattered settlements. Rain-fed agricultural lands (*bari*) may be found closer to the settlements, while canal-irrigated fields (*khet*) are found in the less steep lower lands (Varughese & Ostrom, 2001).

This thesis consists of case studies of four CFUGs in the district of Ramechhap (red area on the map in Figure 1), and how they handled the increased demand for timber following the 2015 earthquake. The field study was carried out over a period of nine weeks in the spring of 2018, where a total of three weeks were spent in four villages. These four villages were chosen for their unique set of conditions, as well as to obtain a variety of perspectives on the research subject and a diverse sample of informants. In each of the villages, one CFUG were the focus of interest. The identity and location of the CFUGs are in this thesis anonymized for ethical reasons, and the names used from here on are therefore fictional. The CFUGs, here presented in the order visited, are called: Sundari CFUG, Chapleti CFUG, Chautara CFUG, and Barbote CFUG. Two of these in particular; Chautara CFUG and Barbote CFUG, were in close proximity to each other with adjacent CF areas. These two were, nevertheless, interesting to study separately as these respective CFUGs had responded differently following the 2015 earthquake, and the villages consisted of different socioeconomic and ethnic groups

as well as a variation in the size of CF area. The comparison between the villages provides a basis for understanding different ways of collective action by comparing seemingly similar CFUGs with a variety of social, cultural and ecological contexts.

Figure 1. The location of the Ramechhap district (marked in red) Source: google maps, 2018 [online]

4.2 Data collection

Information about how collective action in each location is organized and performed is based on in-depth group interviews, while conclusions about the organization as well as success in collective action are based both on these histories and first-hand observations. Households within the sample CFUG were selected based on a pre-determined set of variables to obtain a wide and heterogenic scope of informants in terms of economic strata, caste, and gender. Specific households were singled out by the assistance of key informants from the CFUG executive committee and by using the household welfare status set by the CFUG Operational Plan (OP). Additionally, user households were chosen through the so-called "snowball technique", where one informant generated the next (Teorell & Svensson, 2007). Other informants were randomly chosen while visiting certain well-defined hamlets in the village. When carrying out the focus group interviews with the CFUG executive committees, official documents were collected; minutes from the general assembly meeting following the earthquake, each of the respective CFUGs Operational Plan as well as their constitution. This was done for the purpose of gaining information about each CFUGs forest management plan as well as their decision-making process following the 2015 earthquake.

The number of interviews with different stakeholders featured in this thesis was limited by factors such as time and accessibility. The study should therefore not be regarded as representative for either the specific villages or the heterogeneous and diverse environment of the Ramechhap district in general. It should also be noted that the CF management in the mid-hills region of Nepal, like the Ramechhap district, is considered to be very successful in preventing deforestation (Timsina, 2003), compared to the management in the Terai region (Anderson et al., 2015). All these facts aside, this study can contribute to a greater understanding of the role of community forest user groups as an institution and how each user group's unique set of conditions can limit or facilitate its contribution during disasters such as the 2015 earthquake.

4.2.1 Interviews

To understand the diverse impacts of the earthquakes on the studied communities, I conducted a number of open-ended interviews with CFUG user households. One additional interview was conducted in the district centre, Manthali, with the regional representative from FECOFUN. One interview was also carried out with the District Forest Office (DFO) of Ramechhap in the Ramechhap bazar, a town located about 13 km south-east from Manthali. Both of these representatives spoke of a broader picture, allowing me to gain the more overarching perspective on after-earthquake distribution and demand for timber on a regional level. As visible in Table 1, a total of forty-five qualitative interviews were carried out in the four locations during this field study. Thirty-six of these were interviews with user households of different caste, household composition, and socio-economic strata. In addition to this, two interviews were carried out with representatives from forest management institutions at the district level, and seven with representatives from the CFUG executive committee.

Most interviews were conducted in Nepali with the assistance of either of the Nepali nationals in the field team; one a colleague from FA and the other a bachelor student from Institute of Forestry in Pokhara. This was a result of the fact that I could not perform the interviews myself, given the Nepalese context. To outweigh this shortcoming, extra effort was put into the interview guides and checklists leading up to each field visit. Additionally, specific interview guides were prepared for CFUG group discussions, user households, DFO and FECOFUN. The interviews were all, however, semi-structured (see Appendix II for full interview guides). To make sure that each member of the team was on the same page concerning the intended topic of the interviews, as well as the specific questions, I worked together with my Nepalese colleagues in developing and altering each checklist before entering into the field. During the interviews, the main points would be translated to me, allowing me to request for further elaboration on a specific topic or ask additional questions.

The interview with the District Forest Office official was mainly carried out by myself in English, with some assistance from my Nepali colleague.

Table 1. Informants in the field study

Household level	CFUG level	District level	Amount
	Sundari CFUG executive committee		1
Sundari CFUG user household interviews			14
	Ex secretary and current advisory committee member of the Sundari CFUG .		1
	Chapleti CFUG executive committee		1
Chapleti CFUG user household interviews			12
	Chapleti CFUG treasurer		1
	Chautara CFUG executive committee		1
Chautara CFUG user household interviews			5
	Chautara CFUG secretary		1
	Barbote CFUG executive committee		1
Barbote CFUG user household interviews			5
		FECOFUN Regional representative	1
		District Forest Office official	1

4.2.2 Observations

Informal conversation and observations played an important role when gathering complementary material to this study, and allowed me to gain a greater understanding of rural Nepal as well as the specific communities. In each village situations emerged were I became a part of more relaxed social interplay, and conversation strayed from the research topic. In these moments of relaxed interaction, I was able to do unstructured observations which later proved to provide imperative insights that by extension helped me in analyzing and understanding the empirical material. It could be anything from observing the local women standing in line for hours to fetch water at the only functioning water tap, to casual interactions between individuals belonging to different economic status, ethnic group or castes in the village. Important for this specific study were the observation of the informants' house and material assets. Something which both allowed me (with guidance from my Nepalese collages) to determine an initial perception of the economic status of the household, as well as how the household had been affected by the 2015 earthquake. Additionally, observations of the CF areas proved imperative in allowing me to gain a greater understanding of the specific preconditions for each CFUG.

Observations raise the ethical dimension of research as the participants not always were aware of the fact that they were being observed (Davies, 2008). But when interacting with the

villagers I always made a point of explaining the purpose of the research thoroughly and its connection to ForestAction and our presence and purpose were known among most villages already upon arrival as preparations for housing and necessities were made prior to the field trips.

4.2.3 Data analysis

The data from this field study consists partly of recorded interviews from informants, but also of written material and figures gathered upon visiting the four CFUGs. I have also material in the form of field notes with observations and ethnographic descriptions from the time in the field. The recorded material from the interviews is extensive and has been transcribed word for word from Nepali to English with help from my Nepalese colleagues, to facilitate my understanding and analysis. In the field the interviews were coded for emergent themes in debriefing sessions with my Nepalese colleagues, mainly to take advantage of their knowledge of the Nepalese context. Additionally, each field visit was summarised in reflective field notes which were shared and discussed with supervisors in Sweden. Upon receiving the transcripts these were thoroughly analyzed by myself by categorizing the interview statements into themes.

4.3 Reflexivity and validity

Being from another culture and with different socio-economical means, I have to be aware of the existing power relations between myself and the informants. These may affect how the informats perceive the situation and ultimately answer the interview questions. It is also important to be aware of one's limitations as a researcher in a new cultural setting. Within each culture, there is commonly a unique variation in communication, such as differences in expressions and body language, which might be lost by an outside observer. It is therefore of great importance for a foreign researcher to be aware of this complexity of communication (Davies, 2008). For validity, I was greatly depending on my two Nepali colleagues and it became crucial for me to work closely with them both infield and when processing the material. They assisted me both with translation during interviews with informants infield and also with transcription at a later stage. To avoid misinterpretation from my side, I also discussed my findings jointly with the team. The danger with this method is of course that my Nepalese colleagues also risk misinterpreting the interviews. It should be stated that they are both belonging to higher castes, and could, therefore, be a part of the structures that I in this research are trying to look beyond. One of the Nepalese colleagues is also a native to the area we visited, which opened many doors but may also have affected the answers I received in the

interviews. To further determine the validity of our findings, some informants were confronted with specific statements to determine if they perceived them to be accurate (Creswell, 1996). In addition to this, it is important to recognize the possibility that the involvement of ForestAction, an NGO with its own agenda, might have affected the response from the informants. Mainly since the work ForestAction has previously carried out in the district will either have left the villagers with either positive or negative experiences.

In this study, informants have been chosen based on an estimation of each user households income level. The estimation was both based on the welfare ranking carried out by the CFUGs but also based on the informant's own estimation of the household's land as well as their number of livestock. In studies based on forest commons, such as this one, it is a risk of the data may suffer from measurement error, under-estimation, and under-reporting (Moore and Stinson, 2000). To minimize this risk a thorough observation of the property and livestock was also carried out at the time of the interview.

5 Findings

5.1 Description of field sites

The four locations studied in this report showed clear evidence of the destruction created by the 2015 earthquake. The communities reported to be affected in similar terms by material damage; a large number of private houses were either cracked or destroyed in total. Upon visiting the four locations it also became apparent how many village households still struggled with reconstructing their home. And additionally, it became clear how whether or not individual households had been able to begin reconstruction was interconnected with cultural and socioeconomic structures in the villages. In this section follows an introduction of the four locations and their cultural and socio-economic dynamics, and lastly a description of how these variables are interrelated with the reconstruction of private houses.

5.1.1 A short introduction of the studied locations

The original settlers in the area of the Sundari CFUG were Janajati Newar immigrants who migrated to the area from different places in the Kathmandu valley eight or nine generations ago, as well as a group of Dalit caste. The two groups were clearly separated by both language and traditions. At present, the village is diverse in regard to community composition, in terms of ethnic group and caste relations as well as the difference in land ownership between different income groups. The Newars are settled in a bigger hamlet in the village centre. And the Dalits, separated by their respective professions of tailors and weavers, have settled further down the mountainside in two bigger hamlets. In addition to this, there was a small minority of household belonging to the Brahmin caste and lastly, a small hamlet of four to five Bhujel households, a group that is equal to the Chhetri caste. Even though there is a diverse collection of ethnic groups in the village, the area is known for its Janajati Newar settlers.

> *Our village, Sundari CFUG, is also recognized as the community of the Newar Caste. People are still practising the Newari culture as in the past and still talk the native Newari language. There is a unity of Newari people, and within Ramechhap district our village is also recognized as an educated community because people are staying in harmony and help community members in need.* – The Ex-secretary of Sundari CFUG

In the Chapleti CFUG, the original settlers were from the Chhetri caste and they are still the majority. The Chhetri households were spread out and clustered in small hamlets throughout

the village, while the Tamang hamlet was restricted to the centre of the village close to the main road. The Chapleti CFUG village was linked to the road network at a later stage than the other villages, and road construction was still going on at the time of this study. The construction created work and business opportunities for the local shops. In the village, there were also a minority of households belonging to the Dalit caste.

> *This village is composed of different kinds of people. They have different caste, different language, culture and a different lifestyle. A majority of people in this village are from the Chhetri group. They are Khatri, Basnet, Khadka, Rahut. From the Tamang ethnic group, there is about 25-30 household in the community forest user group. Only one or two households are of Dalit caste.* - A Chapleti CFUG executive committee member

Chautara CFUG and Barbote CFUG were closely situated to each other with adjoining community forest areas, and so also shared many characteristics. In both villages, there was an acute water shortage following the 2015 earthquake which had destroyed underground water canals. This had led to that much time were now spent on accessing water for household consumption as well as livelihood activities. The villages were both dominated by the Magar ethnic group. In Chautara CFUG there was a smaller hamlet of households belonging to the Tamang ethnic group. In Barbote CFUG, on the other hand, there was a minority of Dalit households. These particular Dalit households were not of inferior economic status, they lived in a small hamlet in the middle of the village and had a long history of labour exchange with the other ethnic groups as well as occasional inter-caste marriages.

5.1.2 The four CFUGs

In general terms, the composition of the CFUG executive committee reflected the ethnical composition of at all of the four locations. In Sundari CFUG the Sundari CFUG executive committee was dominated by Newar community members, with one Dalit representative. The Chapleti CFUG executive committee in Chapleti CFUG was dominated by the Chhetri caste, but with a Tamang minority. In the Chautara CFUG, as well as in the Barbote CFUG, the majority of committee representatives were from the Magar ethnic group, but with representatives from the minority groups in powerful positions such as vice chairperson. Regarding gender relations in the executive committee, a majority of the electives were male. The women representatives stayed in the background and, even though some had positions of power, rarely spoke during the group discussions.

Table 2. CFUG description and community composition in the four villages

	CFUG size (nr. of households)	Ethnic composition in the village	Ethnic composition in the CFUG Executive committee
Sundari CFUG	147	Janajati Newar ethnic group majority. Dalits caste is also strongly represented. Minority of Bhujel, Brhamin and Chhetri households.	The executive committee is dominated by the Newar ethnic group (Shrestha) with a minority of Dalits
Chapleti CFUG	82	Majority Chettri group (Khatri, Basnet, Khadka, Rahut). 25-30 household from Tamang ethnic group. Minority belonging to Dalit caste.	The executive committee is dominated by the Chhetri (Khadka, Khatri, Basnet, Rahut) and Tamang
Chautara CFUG	131	Dominated by the Magar ethnic group with a minority belonging to the Tamang ethnic group.	The executive committee consist of Magar ethnic group, accept the secretary who is Tamang and the vice chairperson who is of Dalit caste.
Barbote CFUG	70	Dominantly Magar in the village, with a minority of Dalit households.	Mostly Magar, ethnic group accept the vice chairperson who is of Dalit caste.

As visible in Table 2, the user groups of Sundari CFUG and Chautara CFUG are larger in size, with 147 respectively 131 user households. Chapleti CFUG and Barbote CFUG are, on the other hand, smaller in size. Group size, referring to the number of user households that are members of the CFUG and so could engage in collective action, is so a variable to discuss in this study. When comparing the four villages both in terms of cultural heterogeneity and group size, Sundari CFUG stands out as both having a large size user group, as well as many different castes and ethnicities. Chapleti CFUG is small but has two large ethnic groups in the village, while Chautara CFUG is large in member number but more ethnically homogeneous with one ethnic group being dominant in numbers. Barbote CFUG is both small in user group size and more homogenous than any of the other user groups.

5.1.3 Socio-economical heterogeneity

Within each village there proved to be a range of socio-economical differences among the user households, where access to both land and cash are regarded as a proxy to wealth. In Sundari CFUG there was a notable difference between caste groups in endowment, including land ownership in regards to *bari*, *khet* and *kharbari*. *Ropani* is a unit to measure land area frequently used in the mid-hills of Nepal, and one *ropani* is equivalent to approximately 500 Square meters. *Kharbari* is generally land areas in steeper slopes with a mixture of grass and trees for fodder and timber. Access to the more valuable *khet* land along river valleys was a notable divide between low-income and middle-income households, were households of higher economic status generally owned more *khet*, while an estimate of 30-35 percent of the Sundari CFUG village household survived on only *bari* land. The largest notable difference,

however, was that some Newar households were owners of land in the larger cities nearby (either in the district centre of Manthali or in Kathmandu or both). Agricultural land in the village was often sold to make this investment, and so household from the higher castes with seemingly little land had become landless by strategical choices. This was an investment made both to facilitate for household members living in these cities to work or to gain access to further education, but also as a retirement plan for older household members for when they could no longer support themselves through agriculture in the village. The dividing line between different socio-economic strata in the village was so not only visible in quantity of agricultural land per household, but where and in what form households from different castes and income groups had invested in land when they gained the possibility. In the village, higher castes with access to cash generally invested in land outside of the village, while poorer households often bought *khet* as an investment.

Case 1. Barbote CFUG: *One, unmarried woman, belonging to the Magar ethnic group. She lived in her parental home, since she had until recently cared for her elderly parents who had now passed away. She had six ropani bari in her name which keeps her food sufficient for ten months. And remaining food gaps were covered by selling goats.*

Her house was damaged by the earthquake and she had now collected a sufficient amount of timber, both from the CFUG and her own land, to rebuild. She had also received the 1st instalment of government support. She described a pressing need to rebuild her house, but she lacked money to hire labour. She was stuck in a stalemate, depending on her relatives for labour while they are otherwise occupied or reconstructing their own houses.

When regarding landownership as a marker of socioeconomic strata, also Chapleti CFUG showed considerable differences in access to land between different caste groups as well as different income groups. A few of the Chhetri households had suffered badly from a flood that swept away much of their *khet* land this past August, and so these households who previously had a high level of food-sufficiency now managed on just a few *ropani* of land. These households excluded, there was a major difference in land ownership between Chhetri households and households from the Tamang ethnic group, where the Chhetri caste generally owned more land and also more valuable land. In comparison to the Newar and Dalit households in Sundari CFUG, the Chapleti CFUG village Chhetri households owned much higher quantities of agricultural land, but many *ropani* land was also left as fallow either due to problems with wildlife damages (monkeys) or due to a lack of labour within the households.

In Chautara and Barbote CFUG agriculture was often combined with other occupations, like shop keeping or construction work, but land ownership in quantity was generally more equal between the different castes. The informants also reported a low dependence on the forest and

non- timber forest resources (NTFP), visible in how they visited the forest rarely to never to collect firewood, leaf-litter and fodder. This was mainly due to how households had timber and fodder trees in their own *bari* and *kharbari* land (steep areas of land with mixed vegetation and trees). Less forest dependence was also made possible by a decline in livestock, a visible trend in many villages throughout Nepal (Sharma and Vetaas 2015).

A significant difference between the four locations includes the degree of household community forest dependence for timber. All the informants can be regarded as forest-dependent to a certain degree, especially regarding firewood and fodder for livestock, but for some of the households, the CFUG became the only source for timber following the 2015 earthquake. A few households in the Barbote CFUG owned large amounts of *kharbari* land with trees on. Through the recent demand for timber, these households were able to gain extra income by selling timber to neighbours who had been affected by the 2015 earthquake. The demand for timber from the 2015 earthquake has so added an additional dimension to land ownership, where *bari* and *kharbari* land with timber trees can prove to be an indicator of power and socio-economic status. This was illustrated by how one Dalit household, despite belonging to a low caste, gained social standing and connection in the Chautara/Barbote CFUGs by selling high-quality timber from *kharbari* land to other households after the earthquake. Informants from all castes and socio-economic strata reported to have had economic transactions, and being dependent on the relations, with this particular household. This trend of the increased importance of timber in the *bari* and *kharbari* land was visible in all of the four villages, and harvesting farmland timber has proven to be an important coping strategy following the 2015 earthquake. The user households access to *bari* or *kharbari* land with timber trees is also variable that affect the way the user group relate and engage with the CFUG committee and their demands on the committee to provide timber following the 2015 earthquake.

***Case 2. Sundari CFUG**: A Dalit household of five. They were managing on three ropani bari with food sufficiency for four months. The son had been living and doing odd jobs in Kathmandu but had returned now to rebuild their house after the earthquake.*

After the earthquake, they built a cottage which they stayed in for 1.5 years. They got tin and timber from a local NGO, and with additional timber from the old house and from private land they were able to build a small house. They are now building a second house with the 50000 Npr they received from the government. They have at this point used all their old timber and need timber from CFUG to be able to finish the house. They solved the issue of labour by doing labour exchange within their hamlet.

5.1.4 Reconstruction of private houses

The course taken to rebuilding a house to a liveable standard varied among user households depending on a range of restrictions. Access to timber for reconstruction was, in addition to the practices of distribution set up by the CF, determined by the individual household's access to land with timber, but also access to cash and labour. Access to cash varied widely by caste, cultivation of cash crops and whether or not the household had access to remittances. The Nepali government have supplied a grant for households that have been damaged in the 2015 earthquake, furthermost in form of a private housing grant. This housing grant is distributed in three instalments, in total adding up to 300 000 Npr (approximately $2734). The grant is delivered retroactively after the household can prove they have constructed certain parts of the house. The first instalment of 50 000 Npr is received prior to construction. The second instalment (150 000 Npr) are then received when people lay the foundation, and the third instalment is given after completion (100 000 Npr). In addition to the housing grant, all households had taken loans in different amounts to be able to rebuild, either from neighbours or local cooperatives. Many households reported to had taken loans estimated to the same amount provided by the government for house construction and were so heavily indebted.

Case 3. Chautara CFUG: *One woman, representing a five-member household from the Tamang ethnic group. Shop keeping was the main livelihood activity and they had three ropani kharbari and ten ropani bari. From their land, they were food sufficient for six months. The husband has a tractor which he rents out for construction work, which meant good business at the moment.*

Their house was totally destroyed by the earthquake and they lived in a cottage while they constructed a new house. The household had no timber in their own land and the timber from the old house was not in good condition to reuse. From the CFUG they bought timber for a total of 1500Npr. The construction has been put on hold due to labour scarcity in the village and lack of timber. The household will ultimately take a loan and hire labour to finish the house.

Households who experienced difficulties with managing rebuilding their house expressed how access to labour is a restriction, both within the households as a result of migration, but also in the community in general as a result of high demand overall for labour for reconstruction. In Sundari CFUG, both the Dalit community as well as the Newar community solved the labour demand with labour exchange both in agricultural work and reconstruction work. The exchange was, however, restricted to exchanging labour within the caste/ethnic group. Those household that could not participate in these exchanges, due to migration or non-agricultural occupations creating a lack of available labour in the household, would instead hire paid labour if they had access to cash. We do the labour exchange within the same caste community.

> *We do the labour exchange within the same caste community. We never do labour exchange with other communities. But if we need to hire, we can hire from other caste community as well.* - A Newar household in Sundari CFUG

In Chapleti CFUG, Chautara CFUG, as well as Barbote CFUG, hired labour was the most common for reconstruction work. There was, however, a lack of labour to hire in the village (both for agricultural tasks and for rebuilding houses) which delayed reconstruction for many households. In Chautara CFUG they had both labour exchange within ethnic/caste groups and between ethnic/caste groups for agricultural labour. To rebuild their houses after the earthquake households they mostly made other arrangements. In a hamlet consisting of Magar households, one informant told of how there, during the time of rebuilding, were six-seven Magar houses in the village also rebuilding and they agreed to lower the cost for labour (600 Npr /day) in the hamlet. They had at the time of this study rebuilt 16 houses in this fashion.

Case 4. Chapleti CFUG: *One man who represented a seven-member household of Chhetri caste. They had two ropani kharbari, eight ropani khet and six ropani bari and were food- sufficient for eight months. They earned extra income from farming tomato and other vegetables in 1.5 ropani bari. He also sold livestock occasionally, but agriculture was described as the main livelihood activity.*

After the earthquake, the family lived 1.5 years in a cottage while they constructed their new house. They required 50 cubic feet Sal and 20-25 cubic feet Chilaune for the house, of which 50 cft was received from the CFUG while the rest was taken from their own land. The family's house is now finished since a year back, and they used only hired labour for construction work.

5.2 The community forests

Each of the four locations is characterized by different trajectories of how the community forest user group was created, also referred to as CF founding narratives, as well as community forest resource composition and quantity. These two variables are important to analyse as they, depending on the state of the resource, may influence how the CFUG committee was able to respond to the demand for timber; in other words, whether or not they were able to distribute timber for reconstruction. In this section follows a description of the history of each of the four CFs, a description of forest management traditions and an evaluation of the community forest resource.

5.2.1 Community forest composition and condition

Sundari CFUG is the oldest of the four CFUGs, closely followed by Barbote CFUG, Chapleti CFUG and lastly Chautara CFUG. The Sundari CF area was very degraded when the forest was handed over to the village, and informants told of how there used to be a clear view from the top of the hill down to the valley, where there are now lush forest areas. The age is of little importance for the present state of the older CFs since they, no matter the state of the forest at handover, now have been able to regrow. But, being the youngest CF of the four, Chautara CFUG has at this point mostly young trees that are not ready for harvest. Villagers in Chautara CFUG told of how the land surrounding the village used to be barren. In 1985 they started to plant trees of the species Salla (*Pinus roxburghii*) and began a local conservation programme. The Barbote CF was degraded during the time of government forestry since the villagers would use the forest without limit for grazing. The village decided to plant trees and conserve the forest and through this, the community forest now contains different species of trees (i.e. Chilaune (*Schima wallichii*) and Saal (*Shorea robusta*)) but mostly Salla tree. In contrast to all these narratives, Chapleti CF was never degraded and so did not need any particular effort and regenerative activities from its user group. The current composition of the four CFs is presented in Table 3.

In the Chapleti CFUG rotational patrolling to prevent forest fires and deforestation through illegal logging used to be a part in the user household duty, from the time of handover until recently. However, the illegal extraction of timber and NTFP had declined to a level where the CFUG had decided that there was no longer any need for the rotational patrolling. The Chautara CFUG had taken a pause in their regular patrolling system in the chaos following the 2015 earthquake, but it was reinstated by the 2017 general assembly. In the other villages of the case study, however, they rotational patrolling by user households was still going on and was an important part of everyday life in the village, and the justification of this routine was never questioned by any informants. Instead, the informants told of how they managed their household chores and other obligations around the patrolling. All household would take turns to patrol the forest at a monthly basis (each household would patrol the CF once a month), either in the evening or during morning time. Locational difference between user household, as in differences in geographical position in the village in relation to the community forest, was not perceived as an obstacle to carrying out the task of patrolling. The time to reach the community forest was estimated to more or less one hour, for all households within each of the villages. Also in Sundari CFUG where the Dalit hamlet and the Newar hamlet were clearly divided location wise, the time spent to reach the forest, collect NTFP, and return was estimated to be the same by the informants. Additionally, to this, no informant raised this aspect as an issue for taking part in any community forest-related activities.

Table 3. Forest resource condition in the four CFUGs

	Age of CFUG	Status of forest at the time of handover	Status of forest in present time	Dominant species	Area of CF
Sundari CFUG	1995 (2052 B.S.)	Degraded	Bounteous	Saal (*Shorea robusta*), Chilaune (*Schima wallichi*), Salla (*Pinus roxburghii*)	69.12 hectare
Chapleti CFUG	2002 (2058 B.S.)	Bounteous	Bounteous	75% Saal (*Shorea robusta*), Chilaune (*Schima wallichi*) and some Salla (*Pinus roxburghii*)	78.12 hectare
Chautara CFUG	2010 (2067 B.S.)	Degraded	Trees are still too young to harvest	Mostly Salla (*Pinus roxburghii*) some Chilaune (*Schima wallichi*), Saal (*Shorea robusta*), Fadil *(Paulownia tomentosa),* Khayar (*Acacia catechu*)	115 hectare
Barbote CFUG	1999 (2055 B.S.)	Degraded	Bounteous	Mostly Salla (*Pinus roxburghii*), some Chilaune (*Schima wallichi*) and Saal (*Shorea robusta*)	51.8 hectare

5.2.2 Quality of timber

The most valuable species for constructing houses is Saal (Shorea Robusta) followed by Chilaune (*Schima wallichi*), Fadil (*Paulownia tomentosa*), Khayar (*Acacia catechu*), Karam (*Haldina cordifolia*). These are considered as A-grade or B-grade varieties and are also priced thereafter. Both Sundari CF, as well as Chapleti CF, consisted mostly of this high-value Saal and Chilaune timber, which also is more desirable for house construction than the other species. Salla (*Pinus roxburghii*), also referred to as Chir pine, has historically been the variety replanted degraded or marginal land (DiCarlo et al. 2018). It is considered as C-grade timber as it is vulnerable to the local termites and considered as less suitable for house construction. The Salla timber is, as a result, only used for furniture and door planks. The different species in the respective community forest thus have a major influence on the demand for timber for house construction following the 2015 earthquake. This is illustrated by how only 44 households in Barbote CFUG has requested timber, whereas 36 households have not applied to receive timber from the CFUG. This is according to the informants, mainly because their houses are further down the hill where the termite pest is more common. In relation to this only 13 households in Chautara CFUG applied for timber during the first general assembly after the CFUG opened for application last year. Since then another six households have applied and received timber, of a total of 131 user households. This was stated to be both due to the quality of timber i.e. Salla, as well as the fact that the Chautara CF is very young and the trees are at this point not ready for harvest or appropriate for house construction.

5.3 CFUG response to 2015 earthquake

In addition to cash, labour availability and timber in private land which in different ways have proven to be restricting reconstruction of private houses on a household level, the informants reported access to timber from the CF to be restricting to reconstruction. However, this variable is reported as restricting to a different extent depending on the CFUG response following the earthquake. This section presents each of the four CFUG's provision as stated in their operational plan, followed by a description of the practices for timber distribution that actually were carried out post the 2015 earthquake.

5.3.1 Provision of timber for reconstruction

The operational plan of a CFUG is generally valid for a certain period of time. As visible in Table 4, the operational plan of Chapleti CFUG and Sundari CFUG was valid for five years, while Chautara CFUG and Barbote CFUG had the same operational plan for ten years. This difference explains the variances in provision in the four CFUGs to some extent, since Chapleti CFUG and Sundari CFUG revised their OP more recently and so also have other regulations as a result. Chapleti CFUG and Sundari CFUG have the same regulations concerning the application process and distribution of timber. The CFUG application process requires user households to submit demand by disclosing the types of timber, quantity and purpose within *Mangsir* 15 (last of November). The executive committee prioritizes members based on the extent of the need. Then the executive committee takes a decision about the total quantity to be distributed in relation to the annual allowable harvest (AAH) which is specified in the OP.

Concerning harvesting and distribution, both Chapleti and Sundari CFUG executive committees are required to, after the decision in general assembly, ask permission from their respective *Ilaka* Forest Office to seek permission from the Department of Forests (DoF). The DoF had imposed these new rules on the CFUGs in the Ramechhap area and demanded that also internal distributions would require permission through two different stamps of approval. The DFO has one stamp to authorise the felling of trees, and then the CFUG will stamp each log, making the internal distribution process more difficult and time-consuming than the old procedure. This regulation was, however, greatly contested by both FECOFUN and the CFUGs, and so it was decided in late 2017 that internal distribution would not require the stamp. This new standard for timber distribution was also required by Chapleti CFUG in their Operational plan, however, they did not state to be restricted by it to the same extent and, did in fact successfully distribute timber to their user households following the 2015 earthquake.

Table 4. CFUG regulations as stated in the respective operational plan

	Annual Allowable Harvest (AAH)	Subsidised timber	Harvesting ratio before 2015	Price
Sundari CFUG **OP validity: 2014/2015 to 2019/2020 (five years)**	a. 542 cft Salla b. 134 cft Sal c. 153 cft Chelaune d. 156 cft Fadil	Provide timber to poor and marginalized households affected from disaster such as fire for subsidized rate.	No harvest for four years prior to the earthquake.	a. Salla 25 Npr/cft b. Saal 100 Npr/cft c. Chelaune 50 Npr/cft d. Fadil 50 Npr/cft
Chapleti CFUG **OP validity: 2014/2015 to 2019/2020 (five years)**	a. A total of 300 cft b. 79 cft Saal	Poor or marginalized households will get timber in 40% subsidized rate	Yearly harvest for user household consumption	a. Saal 50 Npr/cft b. Other types of timber 20 Npr/cft c. If amount exceed 50 cubic feet - user will be charged 200 Npr/cft
Chautara CFUG **OP validity: 2009/2010 to 2019/2020 (ten years)**	No provision to harvest for 5 years	Poor or marginalized households will receive 5 cft of timber free of cost.	No harvest due to conservation programme.	a. Khayar 50 Npr/cft b. Salla and Karam 20 Npr/cft, c. Fadil and Jamun 25 Npr/ cft. d. Botedhungero 15 Npr/cft
Barbote CFUG **OP validity: 2007/2008 to 2017/2018 (ten years)**	a. 600 cft Salla b. 40 cft Sal c. 10 cft Fadil d. 14 cft Karam	Poor or marginalized households will receive 20 cft timber free of cost.	During 2014 and 2015 there was no distribution of timber due to lack of demand.	a. Salla 20 Npr/cft, b. Saal 50 Npr/cft, Chelaune and Fadil 30 Npr/cft, and if other types then 25 Npr/cft. c. Maximum 35cft/ household

In Chautara CFUG and Barbote CFUG, the user group households currently rebuilding or performing maintenance on their houses or outbuildings were qualified to submit an application and demand for timber from the executive committee of CFUG. The CFUG committee would discuss the priority of user households on the following points: I. Whether or not the user is a member in an additional CFUG, II. Whether or not the household has sufficient amount of timber on their own private land, III. Whether or not the household can purchase timber from outside, IV. The necessity to do maintenance/ building the house. There was no regulation requiring approval from the DFO for distribution equivalent to the one in the OP of Chautara CFUG and Barbote CFUG.

5.3.2 Practices of timber distribution following the 2015 earthquake

Out of the four CFUGs, all can be regarded as having responded to the earthquake to some degree, with the exception of Sundari CFUG, and the individual response is illustrated in Table 5. Sundari CFUG had not harvested any timber after the 2015 earthquake, as well as during a four-year period prior to the earthquake. This was partly stated to be a result of external factors like the policy environment, and partly due to internal issues within the CFUG executive committee. The internal and external dynamics of Sundari CFUG will be

further discussed in chapter 5.4. Chautara CFUG, Chapleti CFUG, and Barbote CFUG all responded to the demand of timber that arose after the 2015 earthquake, but they did so in various ways. By doing so they have also, through their response to the demand of their user groups, negotiated the regulations of their operational plan to a different extent.

By a decision in the general assembly, Chapleti CFUG decided to give 20 cubic feet of Saal timber to every user household currently reconstructing their house (might vary from 15-25 cft depending on the size of the tree). There was a differentiated price; 50 Npr for trees far away from the road to 200 Npr for trees close to the road. This as trees close to the road would be easier to access and there was a need to create incentives for user households to harvest timber that was less accessible. Each user household could receive timber only once, until the demand connected to reconstruction after the earthquake has been settled in the whole village. The price for Saal timber prior to the earthquake was priced 50 Npr/cft, as stated in the OP, and so the Chapleti CFUG had actually increased the price of timber after the earthquake. The CFUG had, by this decision, transgressed the price stated in their Operational Plan. The CFUG has also harvested more timber than the amount stated in the operational plan as annual allowable harvest (AAH). At this time 70 user household have submitted an application to receive timber from the CFUG, although not all of these user households have received since some have not yet started their reconstruction or are members of other CFUGs. User households that are the only member in one CFUG have priority, as well as members that have finished the primary level (the level where you are able to receive the first instalment of government support) on rebuilding their new house. To avoid any legal repercussions from the DFO, this transgression was carefully withheld from the DFO's knowledge and the extra funds acquired from the sale of timber was stated to be reinvested in the village.

> *We will provide the documents to DFO according to the regulations, and about the extra income that we earn from timber, we will discuss it in the general assembly and then decide where to use them and how to invest.* – The Chapleti CFUG treasurer

The Chapleti CFUG had closed for timber applications from user households as this study was carried out, and no more timber would be harvested this year. In this regard, the rules provided by the operational plan were followed.

> *We distribute timber from September to March every year. But if there is an emergency such as fire, flood/landslide, house damaged etc. we distribute timber anytime. It is only allowed to log and distribute timber from September to March, otherwise, it would be against the operational plan, CF guideline and our constitution. We follow the rules and*

> *regulation of the government and CF and we extract timber every year according to the capacity and production of trees and we distribute the timber within the user group.* – A Chapleti CFUG executive committee member

Chautara CFUG only distributed timber twice, both times after the earthquake. This was done even though the operational plan only covers issues on conservation and does not mention logging of any kind. At the time of distribution, priority was given to households who did not have access to timber through other CFUGs, and who did not have timber in their own land. During the first general assembly since the CFUG opened for application last year, a total of 19 user households applied for timber, receiving a total of 380 cft. The applicants had less timber in their own land and they all had received government support, they had not, however, started to build their houses. They received only Salla tree and were charged 20 Npr/cft; the same price as stated in the operational plan and limited to dry timber or timber from damaged trees. The decision to harvest as well as the conditions were decided in the general assembly in 2017. At this time, priority was given to user households who did not have access to timber through other CFUG and did not have timber in their own land. The same price was charged as stated in the OP.

> *The decision has to be made by the whole user group of CF in the general assembly to be valid. Our OP does not allow us to cut timber within 5 years and we follow this rule accordingly and so didn't cut timber for 5 years. But due to the earthquake everybody in the village needed to reconstruct and for that they need timber urgently so that we made a decision in general assembly to distribute timber. Other than that, we have no plan to cut timber.* – The Chautara CFUG secretary

Almost all 70 households of Barbote CFUGwere severely damaged during the earthquake, with a few exceptions. A decision was passed by a huge majority during the general assembly one month after the earthquake, giving user households with damaged property approval to harvest Salla timber up to 40 cubic feet per household free of charge from the CF (within a one-year time period and in the area allocated by the CFUG). Only Salla tree was taken from the CF and all high-quality timber was taken from *bari* land, and those who do not have their own timber was required to buy timber of higher quality from neighbours and use timber from their old house. There are other species of trees in the Barbote CF, but these were left as they were few in number and they could not be distributed equally between the user group. By distributing 40 cft per household, Barbote CFUG has transgressed the AAH amount stated in their operational plan. However, they stated that the timber harvested in the Barbote CF for the victims of the earthquake was, in fact, harvested mainly for another reason. Officially, the

timber was stated to be harvested as a part of the project to increase biological diversity in the CF and to give way for plantation of a higher variety of different tree species (mostly more high-quality timber varieties like Saal and different fruit trees).

Table 5. CFUG response after the 2015 earthquake

	Quantity harvested as earthquake response	Quantity per user household	Price after earthquake
Sundari CFUG	-	-	-
Chapleti CFUG	437 cft	20 cft Saal.	a. 50 Npr for trees far away b. 200 Npr for trees close to the road
Chautara CFUG	380 cft	20 cft Salla tree.	20 Npr/cft.
Barbote CFUG	1760 cft	40 cft Salla tree	Free of charge (within 1 year time period and in the area allocated by the CFUG.)

5.4 Factors determining community responses to timber demand for reconstruction

The following section presents three different causes that can be regarded as the variables working to either restrict or facilitate the CFUGs ability to respond following the earthquake. The CFUGs in this study did not act in a vacuum, instead, the collective response of the user groups is a result of a combination of factors related to community attributes, conditions of resources and forest management history. Most prominent in these specific locations was the effect of the social heterogeneity within the user group, the condition and quantity of the CF and whether or not households had access to other timber sources. Lastly and not least, the forest management history and the way villages were introduced and schooled in forest management practices are revealed to be of significance for how the CFUG responded following the 2015 earthquake, as well as how they relate to the CF in harvesting and distribution of timber in present time.

5.4.1 Community attributes

Each of the locations in this study has community composition attributes which comprise the likelihood of collective action in forest resource management but to a different extent. This is also something which is visible in their response to the 2015 earthquake. Sundari CFUG was the largest and also most diverse user group in regard to caste, with more than four caste groups living within close proximity to each other, with the second smallest CF resource. There were great socio-economical differences between the two largest groups in the village; the Newar and the Dalit. After the earthquake, the demand for timber was great in Sundari

CFUG, to the same extent in the other villages of this study. At the time of this study, Sundari CFUG had yet not harvested timber to meet the demand following the earthquake. The CFUG executive committee discussed whether or not to harvest all in bulk at this time and distribute to the members. However, there was disagreement within the committee on how the distribution would be performed, which showed a divide in interests among the committee members. One group wanted all members to receive an equal amount of timber, no matter which socio-economical group they belonged to, and regardless of if whether or not they had access to timber in their own land. Another group wanted the poor user households and Dalit to receive timber first, as well as those households that did not have access to timber though other sources.

> *Sundari CFUG did not distribute timber because they have their own internal problems. There are a large number of user households and demand is high while the quantity of timber is low. So they do not know to whom they should give and who don't.* - FECOFUN Representative

> *Timber is necessary for all. But the people who need timber the most are Dalit and poor. And this is one of the objectives of the CFUG as well. But some people claim they need timber even if they are not rebuilding, if other get timber then I also need timber they say…* - The Ex secretary of Sundari CFUG

This disagreement highlights different interests in the Sundari CFUG and how different groups have different preferences for how timber distribution should happen. The pre-existing divide was amplified by the material damaged following the 2015 earthquake, ultimately creating a stalemate. At the time of this study, approximately three years after the earthquake, the discussion of distribution had only taken place in the Sundari CFUG executive committee. The majority of the members of the user group had, in other words, so far not had their say in the matter. This is a major difference from the other three CFUGs of this study, where the decision to distribute was taken as a collective in the general assembly, a forum in which the whole user group was invited to participate in.

The remaining user groups, Chautara CFUG, Chapleti CFUG and Barbote CFUG can all be regarded as less ethnically heterogenic, having three or less different caste groups represented in the village. In these villages, there was also consistently one ethnic group which was larger and more visible within the CFUG; The Chhetri households in Chapleti CFUG and the Magar ethnic group in both Chautara CFUG and Barbote CFUG. These latter CFUG were also less socio-economically diverse, which was visible in land and material property. Over-all in the village of Chautara CFUG as well as Barbote CFUG, the houses were generally larger and in

a better state than in the other villages, and representatives from both the Magar ethnic group as well as the minority groups (Dalit and Tamang) had been able to reconstruct all their private houses. Within the Chapleti CFUG, however, there were large socio-economic differences between the two major caste groups represented in the village; Tamang and Chhetri. One illustration of this is how the mainly Chhetri households had been able to reconstruct their private houses at the time of the field work, while a larger part of the Tamang informants reported to still be struggling to access recourses for reconstruction. These differences apart, none of these three user groups described a conflict of interest in connection to the decision of how the internal timber distribution would happen following the 2015 earthquake. Instead, they spoke with great pride of how they as a village had been able to face this trial and prevail. The compliance within the group is likely connected with the fact that there is mainly one group more dominant in number which, taking for granted that individuals of the same ethnic group have similar interest, would mean that decision making following the earthquake involved less conflict.

5.4.2 Biopsychical attributes of the forest areas, timber quality, and demand

Each of the four CFs is characterized by different resource composition and quantity, which by extension affect both demand and supply. Chapleti and Sundari CF both consisted of more desirable Saal timber, which was more suited for construction of houses. Chautara and Barbote CF, on the other hand, consisted of Salla, which was less desirable in this aspect, evidently creating less demand for this particular timber after the earthquake. Being aware of the low demand of the Salla timber, the Chautara and Barbote CFUG would have been able to adopt a less restrictive distribution policy following the earthquake, without fear of depleting the CF resources. It is, however, important to mention the fact that Barbote CFUG has the smallest area of CF of all the location studied, and the timber variety is limited to Salla. These facts aside, the CFUG has harvested by far the largest amount of timber from the CF.

Overall, there was in the four locations mainly three key variables which in different ways facilitated or restricted the reconstruction of private houses; labour, money and timber in private land. The community forest was not the main source for timber in Barbote and Chautara CFUG, as the timber quality the CF could provide was less desirable for reconstruction. In Chapleti CFUG, the amount provided by the CF after the earthquake was insufficient to meet the need for an entire house, and in Sundari CFUG the CFUG was unable to provide their members with any timber. To acquire timber for reconstruction, user households in all four villages thus were required to find sources other than the CF. As stated before, many households had trees of more desirable timber species (i.e. Saal and Chilaune) in their own *bari* and *kharbari land*. Those who did not have timber in their own land to use for reconstruction after the earthquake bought timber from neighbours. Many households also

took the timber from their old house that had been damaged in the earthquake and reused in their new house. But the access to timber in *bari* and *kharbari land* is also related to whether or not there was an incentive for the CFUG to act after the earthquake. The general trend in Nepal is that villagers increasingly plant timber and fodder trees on their farmland would so affect the perceived necessity for CFUGs to respond. If the user households generally have access to timber suitable for reconstruction in their own land, the CFUG would experience less pressure to distribute. Whether or not households have access to timber from other sources also affect how the CFUG chose to distribute among user households. User household who did not have timber in their own farmland were given priority in Chapleti CFUG, Barbote CFUG and Chautara CFUG. Timber in farmland instead became an important coping strategy in Sundari CFUG when the distribution of CF timber did not occur.

The Nepalese government have, in connection to the financial housing grant for earthquake victims, provided plans for how the new houses are to be constructed. To receive the government support, households will have to follow the given building plans precisely. These building plans, with the purpose of creating houses that are sturdier and earthquake secure, have also contributed to a change in the demand for timber overall. Timber is no longer as big a part of the construction as it was before when villages were constructing traditional two- or three story houses, but the demand for other materials have increased.

> *Most people harvest trees like Fadil, Khayer, Karam from their own land. And they commonly use the timber of this trees when constructing the frame of door and window. Those who do not have timber in their private land bought from their neighbours and rebuilt the house. We need less timber for constructing a house now, in comparison to before. According to the government guidelines we have to build one storey house and we need less timber for one storey house. But, instead of timber we also have the metal rod, cement, sand, stone, etc. for this new type of house. The cost of the rebuild is high as we need to buy cement, metal rod and all those things.* - A Barbote CFUG executive committee member

In December 2017 it was reported how these earthquake victims of Ramechhap have been hit hard by unexpected rise in price of these construction materials as many households were determined to start construction of their houses before the January 15 (2018) deadline set by the Nepali government of to receive the second instalment of the housing grant (The Himalayan Times, 2018). However, it was described by informants how this set date also created a deadline for the timber distribution for the CFUGs, and the executive committees

were under great pressure from their user households to provide the timber needed to construct the second level in time to receive the grant.

5.4.3 CFUG interaction policy environment

As stated in the 1993 Forest Act, the CFUGs are bound by their respective Operational Plan, and any changes in the OP should be approved by officially by the DFO. A decision taken in the CFUG general assembly to allow distribution of timber to user households must be sent to both Assistant Forest Official and DFO. Chautara CFUG, Chapleti CFUG and Barbote CFUG had all made transgressions in relation to their OP to be able to meet the demand of the user households after the 2015 earthquake but had so far not suffered any repercussions from the DFO.

During the interview with the DFO, it was made clear how there were both official and less official allowances made to the provisions regarding the distribution of timber in the district. Officially, the Department of Forest responded to the earthquake by making three exceptions in the original set of rules for timber transportation set in the 1993 Forest Act: I. After the earthquake the regulations for timber transportation was lightened to facilitate transportations of old timber between different villagers in the district, now without the permit. II. Also, transportation of farmland timber was made possible without the permit. III. CFUGs were now allowed to transfer timber without receiving a permit from Assisting Forest Official. However, there were also an additional, less official, response from the DFO. The DFO told of how they were aware of the situation in the district, and how they had loosened the regulations related to distribution and harvesting of timber to earthquake victims, creating space for the CFUG to negotiate the regulations in the operational plan.

> *In the regulations, it is mentioned that CFUGs must be approved by the forest office before harvesting timber. But after the earthquake we have provided some exceptions so that the CFUG can make a decision and cut timber according to their operational plan.* - DFO of Ramechhap

This response from the DFO was in turn facilitated by the decision taken by the Ministry of Forests and Soil Conservation (MoFSC) on April 25th last year, allowing CFUGs to provide timber to user houses damaged in the earthquake. The government has also supplied some CFUGs with additional timber from the Terai region, as well as allowed the users' groups with expired operational plans to operate without going through the renewal process (Kathmandu Post, 2018). The response was most likely also a direct effect of lobbying from FECOFUN which in the period following the 2015 earthquake was a strong advocate for laxer regulations for timber distribution.

Yes we informed all the CFUGs to provide timber to the victims for minimum cost and also we said that if the forest is rich in timber then distribute timber in free of cost for disadvantaged group and we advocated or supported that CFUG can distribute timber to the users without any restriction or without the supervision of District Forest Office. - FECOFUN Representative

There has been a change. Before CFUG distribute timber to the users on the basis of season. Previously before the earthquake, 75 percent of timber was distributed to the users and 25 percent are kept in stock for a year according to each Operational Plan. But after the earthquake, we recommend the CFUGs to distribute 100 percent of the timber to the users... Previously technical experts had to mark the trees before we cut it down, but this is not now necessary after the Earthquake. - FECOFUN Representative

There is, however, examples from other districts in Nepal were DFOs were not as lenient, and have punished the CFUG for illegally logging to meet the demand from families affected by the earthquake (Kathmandu Post, 2018). And so, the fear of repercussions might still be a factor that works to restrict whether or not the CFUGs of this study have harvested timber following the 2015 earthquake. The present situation can also be regarded as having created a void where it is unclear for the CFUGs which provision that can be negotiated and how. For example, the timber distribution and guideline prepared by the MoFSC, in an effort to facilitate timber access to earthquake-affected families, have not set the rate which the CFUGs are to charge for the timber (Kathmandu Post, 2018). The DFO in Ramechhap had, as described herein the Barbote CFUG group discussion, suggested that CFUGs distribute timber to a subsidised price. The CFUG had, however, then taken the matter into their own hands and distributed timber free of charge.

...one thing we want to share, before distributing timber free of cost we had visited DFO for some advice and DFO suggested that "it is better if you give only 10 percent discount in timber to the user instead of free of cost". But we didn't like to charge to the victims because they are members of our CFUG, and they safeguard and manage our CF as well, so we decided to distribute free of cost. Also, we have since before planned to harvest all the Salla tree in one plot and plant other variety of trees there, like Saal, Khair, etc. So we are now distributing Salla timber from that same plot. - A Barbote CFUG executive committee member

5.4.3.1 An external intervention

The Sundari CFUG has hesitated to exploit these new and less rigid regulations related to timber distribution. The Swiss Agency for Development and Cooperation (SDC) was present in the process of handing over the forest to the Sundari CFUG, providing training and knowledge within scientific forest management (SFM) through the Nepal Swiss Community Forestry Project (NSCFP). All of the studied CFUGs had, just like Sundari CFUG, taken part of the NSCFP programme, but Sundari CFUG were unique in being involved in SFM. The Sundari CFUG was chosen to be part of the pilot project of scientific forest management where regular monitoring was carried out to examine the biomass growth under different treatment in different areas of the forest. The data was then used for forest inventory guideline which NSCFP was in charge of. The SFM concept was initially focused on sustainable timber production, but with a larger focus on economic profitability and requires intensive technical support from the DFO, and other technical experts. Having experienced being a part of the SFM-programme, the Sundari CFUG have a long history of focusing on producing higher monetary value from forest products. Something which created conflicting opinions on how to relate to the forest resource following the earthquake:

> *There was a debate where some members said that if we sell timber to the user group then money will be piled in the account, and then later we need to distribute the money from the CFUG account to the members again. So instead- let's distribute timber free of charge! But other members said no, no we should not distribute it free of charge, we have worked very hard for this forest so we should earn money. Another reason is that there is good timber in the CF and everyone keep their eye on that good timber, so demand is high and resources are very low. So due to such reasons distribution of timber still have not happened.* – The Former secretary of Sundari CFUG

The households in the CFUGs which had experienced major deforestation also expressed pride in the part they had played in plantation and conservation of the CF. The fear of losing the forest yet again might by so be one reason for their more hesitant approach towards harvesting timber. This attitude is not unique to the Sundari CFUG, rather popular opinion in Nepal often equates forest management with conservation (Himal Southasian, 2018). The notion of the importance of conservation practices in forest management and the reliance on technical support from experts was seemingly well- established in all of the four forest user groups. But the sentimental connection was more directly put into words in the three villages of Sundari CFUG, Chautara CFUG and Barbote CFUG where the forest area had once been degraded and the conservation had given visible effect (see Table 3).

6 Discussion

Scholars of commons has repeatedly highlighted the importance of collective action and stable institutions to successful governance of forest commons (Chhatre and Agrawal, 2008; Negi et al., 2018). Success is in many regards determined by the group's ability to work together as a collective to overcome internal divisions. The four study locations varied in regard to community heterogeneity and village history, variables known to in different degree affect the organization of collective action. The four locations are also characterized by different physical attributes in regard to the species composition, forest conditions and forest management histories. These variables, by themselves or in combination with others, have been reported to have the ability to comprise the organization of collective action in forestry (Varughese & Ostrom, 2001). Given the uniqueness of the response of the four CFUGs following the 2015 earthquake, their ability to act as a collective were restricted or enabled by their particular context. The limitations in time and scope of this thesis have resulted in some limitations to cover the full complexity of different variables which has come to shape the response. What is clear is that the response cannot be traced back to one single action of one agent, but is rather a result of a range of variables. However, in this thesis, the four theories previously discussed in chapter three have guided the analysis of what potentially has come to affect how the CFUGs have handled the increase in timber demand. As well as what the result of this action became for the user households.

6.1 Collective action and characteristics of the resources

According to Ostrom (1990), correspondence between appropriation, provision rules and local conditions is the groundwork for successful collective action and stable forest management institutions. Similarly, the findings of this thesis have underlined how the quantity and size of the resource-restricted the CFUGs ability to take action following the earthquake. As previously mentioned, each of the four CFs is characterized by different resource composition and quantity. Sundari and Chapleti CFs both consisted of more desirable Saal timber, leading to a high overall demand. Chautara and Barbote CF, on the other hand, consisted of Salla, which was less desirable for reconstruction, resulting in low demand after the earthquake. In regard of CF size, all CFUGs but one, Chautara (115 ha), had about similar sizes of CF (Barbote CF 51.8 ha, Sundari CF 69.12 ha, and Chapleti with 78.12 ha). Chautara was in turn restricted by timber quality, as the trees in the CF consisted of Salla

and were too young to harvest. The importance of the quantity and size of the resource should not be overlooked as these factors are what ultimately restricts the harvesting of timber. But, as visible when analyzing the response of the CFUGs, these factors alone do not explain the current situation. This is illustrated by how Sundari CFUG, with a stable CF resource consisting of high-quality timber failed to distribute while Barbote CFUG, with a smaller resource and lower quality timber, harvested by far the largest amount from their CF.

Previous studies have pointed out that the size of the group can affect the way they engage in collective action in the forest management (Nagendra, 2011), and this is true also in the Nepalese context (Negi et al., 2018). Heterogeneity is commonly expected to be greater in larger groups, as each new group member will increase diversity in different dimensions. In worst case scenarios, a large and heterogenic group can equal higher transaction costs of decision-making, which is an economic term used for intense deliberation (Ojha, 2006). A high level of socio-economic heterogeneity can also result in a decrease of trust due to differences in power hierarchies, and challenges posed by differences in access to resources (Olson, 1965; Nagendra, 2011). Larger user groups may have more resources to their disposal (manpower and monetary funds), but at the same time, they face higher costs to create coherence between different individuals or subgroups within the group. The predicted correspondence of small group size with a homogeneity of interests provides another reason to expect size to influence prospects for collective action (Poteete and Ostrom, 2004). It is important to note that the role of group size in relation to a groups' capacity for sustainable resource management is contested. However, smaller groups tend to be more successful in collective action in comparison to larger groups, nonetheless within the context of Nepalese community-based natural resource management (see Negi et al., 2018).

A study carried out within the Multi-stakeholder forestry program (MSFP) (2012), reviewing the last 30 years of CF in Nepal, claim how there is a critical size of forest and user group that determines the outcomes for households. According to the study, forests greater than 100 ha and user groups of under 100 user households tend to have more successful outcomes than CFUGs with larger groups vis-à-vis smaller forest areas. The MSFP study also concludes how larger forest areas have a potential to benefit user households which is ultimately larger than the costs households experience when participating in community forestry (HURDEC Nepal & Hobley, 2012). When reviewing the findings of this thesis with this MSFP result, Sundari CFUG (147 households) was the largest and also most ethnically diverse community user group, with the second smallest CF resource. Barbote CFUG had the smallest resource, but the user group was ethnically homogenous and by far smaller in size (70 households). The size of the user group can, therefore, be said to gain significance for collective action furthermost in relation to the size of the forest resource, and specifically so the disproportion of a large user group paired with a small CF, like the Sundari CFUG. Still, the reality is far

more complex and this theory alone cannot explain why the CFUGs of this thesis responded in the way they did.

6.2 Heterogeneity and collective action

The importance of intra-community heterogeneity, and more specifically cultural heterogeneity, is highly debated in relation to collective action (Poteete and Ostrom, 2004). The context of Nepalese community forestry is no exception (see Varughese & Ostrom, 2001; Negi et al., 2018). Nevertheless, the CFUGs in this study makes a case for the fact that it is not entirely insignificant in affecting their ability to distribute timber following the 2015 earthquake. In the least, heterogeneity presents a challenge for collective action as it may result in a difference of interests among forest user households which the forest user group must overcome, adding to co-ordination- and distributional struggles associated with a common-pool resource (Varughese & Ostrom, 2001). The specific community characteristics; size as well as the degree of cultural and socio-economical homogeneity, gain importance because they influence the coordination and distribution of resources (Nagendra, 2011; Poteete and Ostrom, 2004). A study performed by Negi et al. (2018) in the Terai region of Nepal showed how income inequality and ethnic diversity have no significant association for collective action. Land inequality, however, was found to decrease participation in the management and use of community forests (Negi et al., 2018). This finding correlates with the initial outlook of this thesis where the access to large quantities of land is in large regarded as a proxy to wealth, as this generally equals timber in private land.

The largest user group of the four, the Sundari CFUG, was dominated by two large groups; the Newar and the Dalit. The two groups were separated by location in the village as well as socio-economic and cultural differences. These groups moved furthermost within their own caste, visible in how they exchanged services and did labour exchange solely with the same ethnic group. Additionally, they had separated languages and traditions. The question can be stated whether they can be regarded as one village at all, but rather two different villages clearly segregated in all aspects but the ones imposed for administrative purpose. The CFUG can in this perspective be regarded as a more or less temporary unity of situation, interest or purpose, created by forest officials (Leach et al., 1999). In the case of the Sundari CFUG, there were divergent interests regarding how the timber should be distributed which had created a stalemate in the negotiations of timber distribution following the 2015 earthquake. The conflict was mainly a result of the limited forest resource, which was unable to satisfy the demand. But instead of giving some households timber, preferably based on socio-economic strata and whether or not they had access to other timber sources, a situation had emerged

where it was "all should receive timber or none". An example of how conflicts over access often intensify when the resources in question become scarce (Leach et al., 1999).

The level of social diversity in a community can reflect on the level of trust between different individuals (Nagendra, 2011; Poteete and Ostrom, 2004). It would, however, be difficult to draw any conclusions on the levels of trust between the different groups of this thesis, based on heterogeneity. But, as individuals that regularly engage and interact tend to develop trust for each other, it may be safe to say that the Newar and Dalit population in Sundari have lower levels of trust. The level of trust, by extension, has proven to influence the perceived cost for an individual to engage in local management institutions such as the CFUGs (Poteete and Ostrom, 2004). The Chautara CFUG, Chapleti CFUG and Barbote CFUG, in this thesis regarded as less ethnically heterogeneous, had fewer ethnic groups in their communities as well as one major group which was dominant in number. Chautara CFUG and Barbote CFUG stand out in this regard with a large majority of Magar user households. And in contrast to the Sundari CFUG account, where the two main groups in the village could not come to terms with a solution, none of the other three user groups described a conflict of interest regarding the decision of how the internal timber distribution was to be administrated following the earthquake. Instead, they all portrayed the same sequence of events; a majority of the user group voted to distribute timber for the same price for all in the general assembly, but in line with the regulations of the operational plan user households with no access to timber in their own land or through other CFUGs would get priority. Priority was also given to household that had started reconstruction, and whose claim and intent, therefore, could be perceived as genuine. These examples can be seen as underlining how shared or complementary interests reduce the tension of distributional struggles while conflicting interest have the opposite effect as seen in the case of Sundari CFUG (Poteete and Ostrom, 2004).

Working together successfully towards a common objective promotes trust and social capital, where social capital should be understood as the networks between individuals and communities. Trust and social capital are both ingredients of significance in collective action (Olson, 1967; Ostrom 1990; Varughese & Ostrom 2000). The user groups in Chapleti CFUG, Chautara CFUG and Barbote CFUG can be regarded as relatively successful in handling the demand following the 2015 earthquake, while Sundari CFUG has failed to do so. With the exception of Chapleti CFUG, all CFUGs engaged in rotational patrolling to prevent forest fires and deforestation through illegal lodging. The patrolling was a duty performed by every user household and a part of everyday life in the village, from the time of handover until the present time. This type of collective action has the ability to strengthen bonds and is an example of how trust can be created within a community. The fact that Sundari CFUG had performed rotational patrolling since the handover would in that sense mean that they had a certain level of trust for each other, also between the different groups.

The patrolling is performed with the expectation of return in forest products. Based on the notion of how each actor within the user group will vary in his or her own perception of the costs and benefits of community action, ultimately influencing the degree to which they choose to participate in CF-related activities (Ostrom 1990; Varughese & Ostrom 2000). In light of how organizations that do nothing to further the interests of their members will eventually perish (Olson, 1967), there must be some incentives for the user households to maintain the act of patrolling, even in the case of Sundari CFUG where no timber has been distributed for a considerable period of time. In Nepal, user households often feel a strong sense of belonging to their CFUGs, and the institution is also known to be cohesive in nature (Negi et al., 2018). There might, in this case, be a social incentive for the user households to make contributions, such as patrolling, or a form of "social pressure" where each individual is encouraged to do their part toward achieving the group goal, without economic individual gain. In general, social pressure and social incentives operate best in groups where the user households can have face-to-face interaction with each other, just like the CFUGs (Olson, 1965). With this in mind, the fact that all individuals within a community engage in collective action, like patrolling, does not equal a high level of trust and by extension smooth interaction between different groups.

All the four locations, with the exception of Chapleti CFUG, had come together as a collective to plant saplings in the initial stages of the CFUG. This endeavour created an attachment to the forest as well as possibly stronger ties within the community. It is also important to add how the CFUGs historically, as well as in present time, have had an important role in the communities by performing development activities towards poverty alleviation and supplying credits and loans to their user households. Something that also may affect how the communities work together as well as how they relate to the CFUGs (Ojha et al., 2009; Kathmandu Post, 2018). By these examples, it becomes clear how Chautara CFUG, Sundari CFUG and Barbote CFUG have a history of more forest-related collective activities. They had a collective history with planting the forest, as well as regular rotational patrolling. This fact does so not explain why Sundari CFUG have failed in the collective action to resolve and distribute timber following the 2015 earthquake, but rather demonstrate potential reasons why Barbote CFUG and Chautara CFUG have been successful in their endeavour.

In the Nepalese context, it has been stated that differences in power and status between ethnic groups possibly is of greater importance for the outcome of a collective action than cultural heterogeneity (Waring & Bell, 2013; Negi et al., 2018). In line with this Varughese & Ostrom (2001) claim how the size of an ethnic group within a Nepalese community does not translate with more power. Just like in the case of Sundari CFUG, where the Dalit is a large part of the total village population, lower castes can frequently be numerically larger than those of higher castes (Varughese & Ostrom, 2001). The imbalance in power relations can instead be seen in

how the Sundari CFUG executive committee was dominated by members from Newar user households, seemingly representing their own interest to receive an equal part of the timber from the CF, rather than distributing timber first to the marginalised and poor (to which Dalit households are generally considered to belong) as stated in the Operational Plan.

6.3 Entitlement and access to timber

Timber from the CF was, as is described in this thesis, only one of the restricting factors for the reconstruction of private households in the four locations. But as the CFUG as an institution traditionally has had a role of aiding marginalized groups within the user group to level out socioeconomic differences, it is critical to point out the result when they fail to do so.

The set of entitlements measured in this thesis was the ability for the user household to derive the timber from the CF to build a house, and thus increase the welfare of the household (Sen, 1981). In each of the four operational plans, there are rules that determine how the timber should be distributed while making allowances for community heterogeneity. All of the four CFUGs of this study have rules for subsidy rated timber distribution for poor or marginalized user households. Chautara, Barbote and Chapleti CFUGs have higher levels of such regulations, as they have certain specific rates for timber for poor or marginalized people in their Operational Plan (see Table 4). The same CFUGs also all succeeded to provide timber to their user households, although with some restrictions as the CF resource was limited. In the case of Sundari CFUG, however, the CFUG committee can be considered to be acting in a manner which blocked access.

In the Chapleti, Barbote and Chautara CFUGs user household who did not have timber in their own farmland would be given priority to access CF timber. However, when Sundari failed to distribute timber to the user households this clearly affected the different groups in the Sundari CFUG to various extent, depending on their access to timber from other sources. As this study has shown; households belonging to higher castes with better economy had larger quantities of trees on their own land, and those who did not could afford to buy timber from elsewhere. And following the earthquake, timber in farmland became the only source of timber and an important coping strategy when the distribution from the Sundari CF did not occur after the 2015 earthquake. In this situation, the households of lower caste with less land and little access to cash would be the ones most affected by the Sundari CFUG s failure to distribute.

Whether or not user households gain access depend on intra-user group negotiation. As observed by Aggarwal (2000) costs of negotiating are likely to be higher in groups where heterogeneity among members in terms of their endowments and needs is high. The conflict found in Sundari CFUG is an example of this, where the two major ethnic groups; Newar and Dalits, showed differences in endowment while the need of timber was claimed to be the same by the two groups. The Newar ethnic group in Sundari CFUG generally had access to more land, livestock and cash. Agrawal and Gupta (2005) found that richer and upper caste households have a higher probability of joining the user groups like the CFUGs and distribute benefits from the resources such as the CF. More specifically, large land-ownership, having a high income and being upper caste facilitate greater participation in user groups and user group committee (Ribot and Peluso, 2003). Then, in the CFUG committee, individuals who are rich in different kinds of capital can exercise symbolic violence by repressing competing values and opinions in decision-making contexts (Bourdieu, 1998). A situation has emerged were households of higher caste and socioeconomic status control resource access, while other households must maintain their access through those who have control (Ribot and Peluso, 2003). In a way, this scenario does not only represent a traditional power imbalance within the communities, but it also produces and reinforces authority. As higher castes with higher socio-economic strata are able to control the access to the resource, their control over the timber is also legitimised (Sikor & Lund, 2009).

In the final stage, when the timber is to be collected from the CF, endowment- in the form of labour power within the user household, may be the regulating factor in determining whether or not timber can be extracted. In all of the villages studied in this thesis, it was clear that some user households had user rights (endowment) to the CFUG timber, but was unable to extract it and gain entitlement without access to labour or capital. This would be an illustration of having the right to benefit without access (the ability to benefit) (Ribot and Peluso, 2003).

6.4 Policy environment and symbolic violence

It is imperative to underline the importance of the CFUGs relationship to the broader policy environment, as this in different ways restrict the user groups ability to act. In principle, CFUGs have full autonomy and can determine which forest products that will be harvested and at what time. However, the reality is that the CFUGs often must seek permission from forest officials. The Forest Act of 1993 recognizes the CFUG as a self-governed institution, but the Community Forestry Program directives of 1995 and inventory guidelines enable the DFO to set the specific conditions for community forest management and are so overriding

the political autonomy granted by the 1993 Forest Act (Ojha et al., 2009). This can be regarded as an example of how national governments often manage local people as subjects to whom privileges, rather than rights over resources, are delegated. Laws are written so that decisions and regulations are to be made by executive decree to the approval an appointee or administrator (the DFO), which by extension maintain the ambiguity over who really holds the power to allocate rights of access to particular benefits (Ribot & Peluso, 2003).

But in this specific period, in the time following the earthquake, both the DFO as well as the FECOFUN in Ramechhap can be regarded as having created a policy environment that made exceptions to the restricting provisions. And the DFO even turned a "blind eye" when the CFUGs acted against regulations. FECOFUN has also been known to use political activism and lobbying to challenge the dominant technocratic view on forest management (Ojha et al., 2007). The DFO, as techno-bureaucratic authority, still have the authority to grant or deny legitimacy to the resource and harvest which gives them some of their original legitimacy. It was also clear how the more lax regulations regarding the harvest of timber which followed after the earthquake might have affected the relationship between the DFO and the CFUGs, and in a way lessened the authority of the former. This fact aside, there are decades of interaction with forest management institutions and their demands of a technocratic approach to forestry have affected the way the CFUG relate to the CF (Ohja 2008; Nightingale and Ojha 2013). The influence of technocratic values and practices in decision-making are visible the context of forest management all over the Global South, where centralised and technically-oriented colonial approaches of the past continue to be reproduced in policies and practices of contemporary forest management (Ojha, 2006; Shivaramakrishnan, 2000).

By their involvement in the early creation of the CFUGs, The Swiss Agency for Development and Cooperation (SDC) was able to reproduce the values underlining the importance of the forest and conservational practices, which is visible to this day. This ‘global' discourse of development and conservation is also still visible in many institutions in the Nepalese forestry sector. The young people migrating from the countryside and a decreasing trend in the number of livestock have resulted in a changed dependency on CF produces in Nepal. Nevertheless, the user households expect a return, of a sort, from the time and effort they put into the collective activities. The interest of a CF with the potential of creating monetary value is increasing. The shifting focus was visible in the four CFUGs, illustrated for example by how Barbote CFUG had harvested a large area of Salla trees to make room for varieties which possibly could produce higher monetary value (like high-quality timber trees). Sundari CFUG, as a part of the scientific forest management (SFM) with a specific focus on economic profitability in the management of the CF, had a focus on creating monetary revenues since the beginning. But the CFUG as an institution has also had an important role of aiding marginalized groups within the village to level out socioeconomic differences. The Master

Plan for the Forestry Sector (MPFS) has since creation identified community forestry as a prioritised program area for meeting livelihood needs of the people (Ojha, 2006). Following the earthquake, the CFUGs can be regarded as facing two competing values, one of maintaining economic profitability, and the other to provide subsidised timber to the user households. A shared sense of values, or doxa, generally can be expected to result in the effortless organizing of collective activities and little negotiation in decision-making processes (Ojha, 2006). But as it is, the CFUGs are torn between two competing doxic values (Bourdieu, 1991), something which have the ability to create conflict as in Sundari CFUG.

In the paper "Techno-bureaucratic Doxa and Challenges for Deliberative Governance: The Case of Community Forestry Policy and Practice in Nepal" (2006) Hemant R. Ojha describes exactly this scenario; how the technocratic domination of science in forest governance has taken new and more subtle, doxic, form. However, more importantly, Ojha also describes how such doxa secures the forest officials technical allowance and is so creating incentives for these to execute a form of symbolic violence to maintain their privileges (See Ojha, 2006). The values introduced through the SDC and SFM in community forestry in Ramechhap are based in the same technocratic and scientific doxa of timber oriented forestry, with the outlook to maximise commercially valuable forest products. As described, the scientific focus requires the high involvement of technical experts, encouraging them to maintain the current system to secure their privileges. It can thus not be eliminated that the scenario described by Ojha, where the CFUGs are subjects of symbolic violence, is applicable also in the context of forest management in Ramechhap. This, in turn, restricts the user groups to act with total autonomy in regard to the distribution of timber following the 2015 earthquake.

7 Conclusion

Earthquakes risk being treated as short-term catastrophes, although they have long-term consequences. This thesis has examined just what consequences that followed the 2015 earthquake in terms of damage on private houses and underlined the many dimensions of reconstruction in the Ramechhap district. More specifically it examined the local conditions and restraints for households to reconstruct private houses in four specific locations at the time after the earthquake. Findings showed that the three different variables on the household level that restricted their ability to rebuild their private houses post-earthquake; access to cash, labour and timber in private land. Additionally, it became clear how access to these three variables was interconnected with cultural and socioeconomic structures in the villages. It was also found that access to timber from the CF was restrictive to a different extent, depending on whether or not the CFUG had distributed following the earthquake, and in what quantity. Generally, households of higher socio-economical strata had access to more timber for rebuilding, mainly as they had more timber in private land and also access to cash and so could buy from neighbours to a larger extent. Access to community forest timber, being commonly lesser priced, proved to be extra critical for the poorest households for whom common resources make out a larger part of the asset base. By using the Entitlement framework this thesis put light on how user households access to timber depend on intra-user group negotiation and, just like in the Sundari CFUG, the costs of negotiating are higher in groups where heterogeneity among members in terms of their endowments and needs are more prominent. Additionally, higher socio-economic strata facilitate greater participation in user groups and in the CFUG committee and thus greater influence in distribution related discussions. A situation has emerged were households of higher caste and socioeconomic status control resource access, while other households must maintain their access through those who have control.

The empirical data showed great variations between the four locations in how the CFUGs had responded to the increased demand for timber following the 2015 earthquake. Chautara CFUG, Chapleti CFUG and Barbote CFUG all responded to the demand of timber that arose after the 2015 earthquake by distributing timber of varying quality and amount to their user households, but they did so by negotiating the rules of their Operational Plan to a different extent. Sundari CFUG, however, did not manage to respond. What is clear is that the response of the CFUGs cannot be traced back to one single action of one agent, but is rather a result of a range of variables. While there may be additional causes contributing to the way the four CFUGs of this study were able to respond to the need for timber in their user group, this thesis has focused on three. The most prominent factors which shaped the response of these

specific CFUGs was the effect of the heterogeneity of the community, quantity and quality of the CF and interaction with forest management institutions. Most noticeable in this specific context was how the heterogeneity in landownership affected individual households access to timber, and so their ability to reconstruct. This as individuals with agricultural land generally had access to timber trees in the same land. This, in turn, affected the interest of the different household in terms of distribution of the CF timber and how they related to the CFUG. Additionally, another restricting factor for collective action in regards to the CFUGs and their ability to distribute timber proved to be the condition and quantity of the CF. All four CFs had different characteristics in regards to tree species very much affected the demand for timber. The size of the CF and quantity of different species, in turn, showed to restrict the CFUGs ability to meet the demand of their user household. However, the importance of this specific variable should not be overstated as Barbote CFUG, with the smallest CF, also distributed by far the largest quantity of timber.

Lastly and not least, the history of interaction with forest management institutions and aid agencies revealed to be significant for how the CFUG responded following the 2015 earthquake, as well as how the user group relate to the CF when harvesting and distributing timber. The values introduced in Ramechhap through the NSCFP and SFM-programme was based in a technocratic and scientific doxa of timber oriented forestry, with the outlook to maximise commercially valuable forest products. Following the earthquake the CFUGs can thus be regarded as facing two competing values; one of maintaining economic profitability, and the other to provide subsidised timber to the user households. The latter is grounded in how community forestry historically have been identified as a prioritised program area for meeting livelihood needs of the people. The former of these two doxic values can, in turn, be considered to be maintained by different actors within the Nepalese community forestry who gain privileges from its existence.

This thesis is putting light on four Nepalese CFUGs and their ability to respond to the 2015 earthquake, as well as what consequence their action resulted in for the user households. These findings provide insight in the Nepalese context, and can be added to the growing volume of research underlining the role and importance of community-based institutions in the event of a disaster. However, I implore further research on the subject to provide government and international agencies with recommendations for disaster-related policies and recovery measures for communities undergoing post-disaster transitions.

8 References

Aggarwal, RM (2000), 'Possibilities and limitations to cooperation in small groups: The case of group-owned wells in Southern India' *World Development*, vol 28, no. 8, pp. 1481-1497. DOI: 10.1016/S0305-750X(00)00030-9

Agrawal, A. and Gupta, K. (2005). Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai. *World Development*, 33(7), pp.1101-1114.

Adhikari, B., Di Falco, S. and Lovett, J. (2004). Household characteristics and forest dependency: evidence from common property forest management in Nepal. *Ecological Economics*, 48(2), pp.245-257.

Anderson, J.; Mehta, S.; Epelu, E.W.; Cohen, B. (2015) Managing leftovers: Does community forestry increase secure and equitable access to valuable resources for the rural poor? *For. Policy Econ. 58*, 47–55.

Berkes, F. and Jolly, D. (2002). Adapting to Climate Change: Social-Ecological Resilience in a Canadian Western Arctic Community. *Conservation Ecology*, 5(2).

Bourdieu, P. (1998) *Practical Reason: On the Theory of Action*. Cambridge: Polity Press.

Bourdieu, P. Bourdieu, P. 1991. *Language and Symbolic Power*. Cambridge and Oxford: Polity.

Birkmann, J., editor 2006: Measuring vulnerability to natural hazards. New York: UNU Press.

Cameron, M. M. (1998). *On the Edge of the Auspicious: Gender and Caste in Nepal*. Urbana and Chicago: University of Illinois Press.

Carlsson, L. and Berkes, F. (2005). Co-management: concepts and methodological implications. *Journal of Environmental Management*, 75(1), pp.65-76.

Carter, J, Pokharel B and Parajuli R R. (2011). TWO DECADES OF COMMUNITY FORESTRY IN NEPAL: WHAT HAVE WE LEARNED? Nepal Swiss Community Forestry Project. Nepal: Zenith Printing Press, Kupondole, Lalitpur. [online] Available at: https://theredddesk.org/resources/two-decades-community-forestry-nepal-what-have-we-learned-0

CBS (2011). Nepal living standard survey 2010/2011: Statistical report vol. I and II. Kathmandu: Central Bureau of Statistics (CBS).

Chhatre, A. and Agrawal, A. (2008). Forest commons and local enforcement. *Proceedings of the National Academy of Sciences*, 105(36), pp.13286-13291.

Christoplos, Ian & Pain, Adam (2015). Nepal 10: Christoplos, Ian & Pain, Adam (eds). *New Challenges to Food security. From climate change to fragile states*. Routledge

Creswell, John W. (1996). Research Design: Qualitative and Quantitative Approaches. *The Library Quarterly*, 66(2), pp.225-226.

Delgado-Serrano, M., Oteros-Rozas, E., Ruiz-Mallén, I. et al. Reg Environ Change (2017).

Davies, C. (2008). *Reflexive ethnography*. London: Routledge.

Dof.gov.np. (2018). *Community Forestry | Department of Forests and Soil Conservation*. [online] Available at: http://dof.gov.np/dof_community_forest_division/community_forestry_dof [Accessed 21 Sep. 2018].

DiCarlo, J., Epstein, K., Marsh, R. and Måren, I. (2018). Post-disaster agricultural transitions in Nepal. *Ambio*.

Epstein, K., J. DiCarlo, R. Marsh, B. Adhikari, D. Paudel, I. Ray, and I. E. Måren. 2018. Recovery and adaptation after the 2015 Nepal earthquakes: a smallholder household perspective. *Ecology and Society* 23(1):29. https://doi.org/10.5751/ES-09909-230129

Ellis, F. (2012). *Rural livelihoods and diversity in developing countries*. Oxford: Oxford University Press.

Fao.org. (2018). *Nepal earthquakes: FAO in Emergencies*. [online] Available at: http://www.fao.org/emergencies/crisis/nepal-earthquakes/en/ [Accessed 28 Sep. 2018].

Fox, J. (2016). Community forestry, labor migration and agrarian change in a Nepali village: 1980 to 2010. *The Journal of Peasant Studies*, 45(3), pp.610-629.

Gautam, A. P., Webb, E. L., Shivakoti, G. P., & Zoebisch, M. A. (2003). Land use dynamics and landscape change pattern in a mountain watershed in Nepal. *Agriculture, Ecosystems & Environment, 99*(1–3), 83- 96. doi:http://dx.doi.org/10.1016/S0167-8809(03)00148-8

Himal Southasian. (2018). *A conservative harvest - Himal Southasian*. [online] Available at: http://m.himalmag.com/a-conservative-harvest/ [Accessed 8 May 2018].

The Himalayan Times. (2018). *Price hike hits quake victims*. [online] Available at: https://thehimalayantimes.com/nepal/price-hike-hits-quake-victims/ [Accessed 22 May 2018].

HURDEC Nepal, Hobley, M and ERI (2012). Persistance and change: review of 30 years of community forestry in Nepal. [online] Available at: https://www.researchgate.net/publication/282287096_Persistence_and_change_review_of_30_years_of_community_forestry_in_Nepal

Ito, K., Oura, Y., Takeya, H., Hattori, S., Kitagawa, K., Paudel, D. and Paudel, G. (2005). The influence of NGO involvement on local people's perception of forest management: a case study of community forestry in Nepal. *Journal of Forest Research*, 10(6), pp.453-463.

Kathmandupost.ekantipur.com. (2018). *Forest authorities concerned by government's logging decision*. [online] Available at: http://kathmandupost.ekantipur.com/news/2016-04-06/forest-authorities-concerned-by-governments-logging-decision.html [Accessed 8 May 2018].

Leach, M., Mearns, R. and Scoones, I. (1999). Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management. *World Development*, 27(2), pp.225-247.

Lovell, Terry. 2003. Resisting with Authority: Historical Specificity, Agency and the Performative Self. In Theory, Culture & Society. Vol. 20(1)

Marquardt, K., Khatri, D. and Pain, A. (2016). REDD+, forest transition, agrarian change and ecosystem services in the hills of Nepal. *Human Ecology*, 44(2),

Marquardt, K., Khatri, D (2017) *Back to Office Rapport PECA II* . SLU. (unpublished material)

Moore, J.C.; Stinson, L.L.; Welniak, E.J. Income measurement error in surveys: A review. *J. Off. Stat.* 2000, *16*, 331–361.

National Planning Commission (2015) *Nepal Earthquake 2015: Post Disaster Needs Assessment.*. [online] Kathmandu: Government of Nepal. Available at: https://www.nepalhousingreconstruction.org/documents/nepal-earthquake-2015-post-disaster-needs-assessment-volume-b-sector-reports [Accessed 3 Oct. 2018].

Negi, S., Pham, T., Karky, B. and Garcia, C. (2018). Role of Community and User Attributes in Collective Action: Case Study of Community-Based Forest Management in Nepal. *Forests*, 9(3), p.136.

Nightingale, A. and Ojha, H. (2013). Rethinking Power and Authority: Symbolic Violence and Subjectivity in Nepal's Terai Forests. *Development and Change*, 44(1), pp.29-51.

Ojha, H. (2006) Techno-bureaucratic Doxa and Challenges for Deliberative Governance: The Case of Community Forestry Policy and Practice in Nepal, Policy and Society, 25:2, 131-175, DOI: 10.1016/S1449-4035(06)70077-7

Ojha, H., Khanal, D R., Sharma, N., Sharma, H., Pathak, B. (2007). Federation of Community Forest User Groups in Nepal: An Innovation in Democratic Forest Governance. International Conference on Poverty Reduction and Forests, Bangkok September 2007. Available at: http://lib.icimod.org/record/12892/files/4954.pdf

Ojha, H., Persha L., Chhatre, A. (2009). Community Forestry in Nepal: A Policy Innovation for Local Livelihoods. International Food Policy Research Institute. Available at: http://www.ifpri.org/sites/default/files/publications/ifpridp00913.pdf

Olson, Mancur. (1965). The logic of collective action: Public Goods and the Theory of Groups. USA: Department of Economics of Harvard University.

Ostrom, E. (1990). *Governing the commons*. Cambridge: Cambridge University Press.

Paudyal, K., iial, H., Burkhard, B., Bhandari, S. and Keenan, R. (2015). Participatory assessment and mapping of ecosystem services in a data-poor region: Case study of community-managed forests in central Nepal. *Ecosystem Services*, 13,

Paudyal, K., Baral, H., Lowell, K. and Keenan, R. (2017). Ecosystem services from community-based forestry in Nepal: Realising local and global benefits. *Land Use Policy*, 63, pp.342-355.

Pelling, M. and Dill, K. 2006: 'Natural disasters' as catalysts of political action. ISP/NSC briefi ng paper 06/01. London: Chatham House.

Pelling, M. and Dill, K. (2009). Disaster politics: tipping points for change in the adaptation of sociopolitical regimes. *Progress in Human Geography*, 34(1), pp.21-37.

Poteete, A. and Ostrom, E. (2004). Heterogeneity, Group Size and Collective Action: The Role of Institutions in Forest Management. *Development and Change*, 35(3), pp.435-461.

Ribot, J. and Peluso, N. (2003). A Theory of Access. *Rural Sociology*, 68(2), pp.153-181.

Sen, A. (1981). Poverty and famines: An essay on entitlements and deprivation. Oxford: Clarendon Press.

Sharma, L. and Vetaas, O. (2015). Does agroforestry conserve trees? A comparison of tree species diversity between farmland and forest in mid-hills of central Himalaya. *Biodiversity and Conservation*, 24(8), pp.2047-2061.

Shivaramakrishnan, K. 2000. 'State Science and Development Histories: Encoding Local Forestry Knowledge in Bengal'. *Development and Change* 31: 61-89.

Sikor, T. and Nguyen, T. (2007). Why May Forest Devolution Not Benefit the Rural Poor? Forest Entitlements in Vietnam's Central Highlands. *World Development*, 35(11), pp.2010-2025.

Sikor, T. and Lund, C. (2009). Access and Property: A Question of Power and Authority. *Development and Change*, 40(1), pp.1-22.

Springate-Baginski, O and Wollenberg, E. (2010). *REDD, forest governance and rural*

Subba, C., Pyakuryal, B., Bastola, T., Subba, M. and Karki, B. (2014). *A Study on the Socio-Economic Status of Indigenous Peoples in Nepal*. [online] Khatmandu, Nepal: Lawyers' Association for Human Rights of Nepalese Indigenous Peoples (LAHURNIP). Available at: http://www.lahurnip.org/uploads/articles/Final-Book-NLSS.pdf [Accessed 4 Oct. 2018].

Sunam, R. K. and McCarthy, J. F. (2016). Reconsidering the links between poverty, international labour migration, and agrarian change: critical insights from Nepal, *The Journal of Peasant Studies*, 43:1, pp.39-63.

The Food and Agriculture Organization of the United Nations & International Fund for Agricultural Development. (2015). Regenerating forests and livelihoods in Nepal: a new lease on life. Boston, MA: CABI.

Thoms, C. A. (2008). Community control of resources and the challenge of improving local livelihoods: A critical examination of community forestry in Nepal. *Geoforum, 39*(3), 1452-1465. doi:http://dx.doi.org/10.1016/j.geoforum.2008.01.006

Teorell, J., Svensson, T. (2007). Att fråga och att svara: Samhällsvetenskaplig metod. Liber: Malmö

Timsina, N.P. Promoting social justice and conserving montane forest environments: A case study of Nepal's community forestry programme. *Geogr. J.* 2003, *169*, 236–242.

United Nations Office for Disaster Risk Reduction (UNISDR). 2015. *Disaster risk reduction and resilience in the 2030 Agenda for sustainable development.* UNISDR, Geneva, Switzerland.

Ullberg, S. (2013). *Watermarks*. Stockholm: Acta Universitatis Stockholmiensis.

Varughese, G. and Ostrom, E. (2001). The Contested Role of Heterogeneity in Collective Action: Some Evidence from Community Forestry in Nepal. *World Development*, 29(5), pp.747-765.

Wolford, W., Borras, S., Hall, R., Scoones, I. and White, B. (2013). Governing Global Land Deals: The Role of the State in the Rush for Land. *Development and Change*, 44(2), pp.189-210.

Waring,T.M.;Bell,A.V. Ethnic dominance damages cooperation more than ethnic diversity: Results from multi-ethnic field experiments in India. *Evol. Hum. Behav.* 2013, *34*. [online] Available at: https://www.sciencedirect.com/science/article/pii/S1090513813000718?via%3Dihub

World Bank Group. (2018). *Nepal Systematic Country Diagnostic*. [online] Openknowledge.worldbank.org. Available at: https://openknowledge.worldbank.org/handle/10986/29421 [Accessed 30 Jul. 2018].

Özerdem, A. and Jacoby, T. 2006: Disaster management and civil society: earthquake relief in Japan, Turkey and India. London: I.B. Tauris.

Appendix I

Informants cited in the thesis

Informant	**Date**
FECOFUN representative	2018-03-04
District Forest Officer in Ramechhap	2018-03-08
Ex secretary of Sundari CFUG	2018-02-14
Sundari CFUG committee member 2	2018-02-03
Chapleti CFUG committee member 1	2018-02-17
Chautara CFUG committee member 1	2018-03-04
Chautara CFUG committee member 2	2018-03-04
Barbote CFUG committee member 1	2018-03-05
Barbote CFUG committee member 2	2018-03-05
Sundari CFUG user household	2018-02-03

Appendix II

Interview guides

CFUG Executive Committee group discussion x 4

Group interview with the CFUG committee will focus on how the group deal with the issue of the earthquake and what rules that were changed as a result of it to allow users to rebuild their houses. The group will be consisting of 8-10 people, with representatives from present committee. Questions will also focus on figures of how much timber were extracted and supplied.

- An opening discussion about the history of the village - What are the special characteristics for this village would you say?
- What is the CFUG history in the village? Since when is there a CFUG in the village? What did the process look like? When were the committees formed, why were it formed and who formed or initiated it?
- What are the most common species of trees in the CF?
- How many households are members of the CFUG in the village? Who are not members (is there a specific group?)
- How often have the CFUG distributed timber the last 10 years? Why this time interval?
- Do the CFUG have a revised OP at the moment? If not, what was the implications after the earthquake (if any)?
- Has the village had previous experiences with earthquakes in history? What happened then?
- How was the village affected by the earthquake in 2015? How big was the damage?
- How many HH needed rebuilding (approximately)?
- How did the CFUG handle and act right after earthquake to support members? Did CFUG provide immediate support to members affected by EQ, in what forms?
- How many members demanded timber for rebuilding? How much quantity?
- How much timber did the CFUG provide to members to rebuild (per hh and total timber by year since EQ)?
- What is the supply per HH in a normal year?
- What was the proportion of timber people harvested from private land? Why?
- Were there other ways that people dealt with construction demand? (bought from neighbour, or use timber from old house)
- Did the CFUG handle the distribution of timber well? Are you happy with the result? What was the biggest achievement? Why?
- What is the regulation of distribution timber a normal year, is there differentiated price for people for different income groups? Is there any provision of providing subsidy or reduction in price of timber to people from low-income group? What are the provisions?
- What are the challenges the CFUGs faced to respond the demand? [any stories?]
- Is there anything else you would like to share with me or add to this interview?
- Do you have any questions for me?

Households

The household interviews will be conducted to focusing on the access of timber from CFUG and the issues related to accessing timber. Focus will be on poor/very poor HH (defined as HH with little land) and middle income farmer HH with more cattle less land. And finally interviews will also be conducted with representatives from HH belonging Dalits as well as female headed HHs. The following questions will guide the household interview – focusing on changes experienced before the 2015 earthquake in contrast to present day. Before starting: What does this HH represent as a category; female headed HH, cast, ethnic group and income level. Or something else?

- Tell me about yourself.
- General information: family size, land holding size (*bari* and *khet*), major crop production types, major livelihood activities (income sources). Food sufficiency - how many months of year can the farm feed your family? How do you cover food gaps?
- What is your major income sources in the household?
- How often do you go to the forest? Why do you go there? Distance from HH to CF? Who in the HH goes to the forest?
- How was your HH affected by the earthquake?
- Did you need to rebuild after the earthquake, how much timber did you require, from where did you get the timber you needed? (bought, use old timber and so on)
- Did you get government support to rebuild your house? If not, why?
- Did you get timber from CF? If not, why?
- Was the procedure of timber distribution different from the usual procedure of the CF a regular year?
- Does your HH have any specific story about struggle for getting timber and other issues of rebuilding that you would like to share.
- Is there anything else you would like to share with me or add to this interview?
- Do you have any questions for me?

interviews with key informant from the CFUG Committee (or teacher/ex chairperson):

- General information: family size, land holding size (*bari* and *khet*), major crop production types, major livelihood activities (income sources).
- How many households are members of the CFUG in the village? Who are not members (is there a specific group?)
- How often have the CFUG distributed timber the last 10 years? Why this time interval?
- How was the village affected by the earthquake in 2015? How big was the damage?
- How many HH needed rebuilding (approximately)?
- Do the CFUG have a revised OP at the moment? If not, what was the implications after the earthquake (if any)?
- How did the CFUG handle and act right after earthquake to support members? Why?
- How did the CFUG respond to the rise in demand for timber after the earthquake?
- Were there new regulations? What aspects did the committee focused on when deciding which HH that were able to collect more timber?
- How many members demanded timber for rebuilding? How much quantity?
- Which HH in the village will receive timber? Why these? Is there any group in the village which has received less?

- How much timber CFUG provided to members to rebuild (per hh and total timber by year since EQ)?
- What are the challenges the CFUGs faced to respond the demand? [any stories?]
- Were there other ways that people dealt with construction demand? (bought from neighbour, or use timber from old house)
- What is the supply per HH in a normal year?
- What is the regulation of distribution timber a normal year, is there differentiated price for people for different income groups?
- Did the CFUG handle the distribution of timber well? Are you happy with the result? What was the biggest achievement? Why?
- Is there anything else you would like to share with me or add to this interview?
- Do you have any questions for me?

Interview with DFO

- The questions will here focus on the response from DFO with regard to decisions or change in policies to allow the CFUGs to extract timber to meet the increasing demand following the earthquake.
- How were villages in the district damaged by the earthquake in 2015?
- How many HH were affected by the earthquake in the district? In what ways?
- What was the DFOs immediate response after the earthquake (if any)?
- Did the DFO experience an increased need of timber from the CFUG after the 2015 earthquake? How did the DFO react?
- What were the key challenged faced and what were the major changes in rules and practise with regard to harvesting of timber from CF?
- Are there any numbers on how many CFUG that has distributed timber to their members, and how many that has failed to do so? Are there any general trends in policy changes on CFUG level (changes made in distribution of timber after the EQ)? What are these?
- Were there any changes in the price of timber supplied by CFUGs to households after the earthquake?
- Are there any cases where the DFO has stopped a CFUG from harvesting green timber after the earthquake? What was the cause?
- Did the DFO get timber from outside to assist CFUGs? In what quantity was timber extracted? From where was it extracted (from other district)? How did the distribution work? Who got timber? What price was paid by the CFUG members?
- How many OP was revised this period? How many CFUGs are yet to revise their Op? How has the OP backlog affected distribution of timber for reconstruction from CF?
- Have the DFO done anything else to help CFUG to help their members with rebuilding?
- Is there anything else you would like to share with me or add to this interview?
- Do you have any questions for me?