

Changing Forestry Governance in Nepal Himalaya

Interactions of Community Forestry with REDD+ and Traditional Institution

Dilli Prasad Poudel

Thesis for the Degree of Philosophiae Doctor (PhD)
University of Bergen, Norway
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बुवाको आत्माको चीरशान्तिको लागि।

This work is dedicated to the memory of my father, Jaya Prasad Poudel, who passed away shortly before the submission of this thesis, and also to my mother, Laxmi Devi Poudel.

Scientific environment

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Abstract

Although traditional institutions remained *involved* in the management of local forests in some areas of Nepal Himalaya, Community Forestry (CF) is now a well-established formal forest management institution of the country. The emergence of Reducing Emissions from Deforestation and Forest Degradation (REDD+) in 2008 brings a new dimension to CF. Given that CF has been successfully implemented and adopted by many local communities, with one third of the nation's population being involved in various types of CF institutions, it has been used as an institutional platform to pilot REDD+ since 2010. Since then, the responsibility of CF has been extended from its initially national concerns such as meeting locals' subsistence needs and promoting local biodiversity conservation, and has now moved towards more global concerns such as curbing climate change. Nepal's preparation to reform its forestry governance warrants a study of the interactions between existing forestry institutions and emerging frameworks of forestry governance like REDD+, as such a study may provide valuable policy insights. This study therefore aims to examine the interactions of CF with both emerging forestry governance and traditional institutions. By specifically applying political ecology and discourse analysis approaches, the study analyses the effectiveness of the REDD+ pilot project in CF, the disjunctions and conjunctions between formal and traditional forestry institutions, and lastly the reasons of local variations in acceptance of CF models. Two cases of CF models were selected for this study - the Community Forestry User Group (CFUG) of Dolakha District and the Conservation Area Management Committee (CAMC) of Mustang District.

The study found that after the implementation of the REDD+ pilot project in Dolakha, the CFUGs tightened the rules regarding forest use and banned livestock grazing in order to help sequester more carbon in the forest, both of which negatively affected the existing agroforestry-dependent communities. Consequently, the villagers tended to have a negative perception of REDD+ intervention in local forests. REDD+ is not an ordinary type of management framework; it pays money to protect the forest and conserve the environment. The distribution of the REDD+ benefits was found to be a sensitive issue in the study areas where it is primarily determined on the basis of individuals' caste and ethnic affiliation. Although the pilot project advocates forest protection, increases environmental protection awareness and supplies income to the CFUGs, it is concluded that ignoring the subsistence users, REDD+ cannot achieve sustainable environmental goals.

The traditional institutions of Mustang – known as the village councils – still hold the right to decide who should use the forest and who should not. The formal institutions, that is, CAMCs, select their representatives from the same villages where the village councils have executed traditional rules. The CAMCs’ members and supporters still need to follow the traditional practices and cannot simply ignore the councils’ norms. However, the village councils have also started to relinquish their management authority to the CAMCs. One of the study villages has recently started to collaborate with the CAMC. When distributing timber from the local forests and implementing development projects in the villages, the two institutions work conjointly. However, a disjunction regarding traditional and formal forest boundaries was found. A CAMC regulates the forests of a Village Development Committee (VDC), which comprises several villages. However, each village of Mustang occupies some forestland which the respective village councils consider to be the property of their village. The village council prohibits any outsiders from using the forest, even other villages of the same VDC. These interactions between institutions should be understood prior to implementing any new forestry governance.

The study also found that the CF models (i.e., CFUGs & CAMCs) were accepted to varying degree by the local communities. Three potential reasons were discussed. Firstly, it was found that an acceptance of or resistance to a CF model cannot be determined solely by migration of the local forest users and their decreasing dependency on the forest. Besides reducing active leadership within communities, out-migration can limit local participation in the design and implementation of new institutions and thereby increase institutional vulnerability. Secondly, an institution that has wider institutional flexibility in terms of rules and rights can better succeed in incorporating villagers' priorities and can thus enjoy a greater level of acceptance. Thirdly, the persistence of traditional institutions and their ability to sanction forest uses can lead to the resistance of a formally designed forestry institution. It is suggested that knowledge of these local variations in acceptance can help to inform policy makers and facilitate future reforms of local forestry governance.

Two conclusions are drawn from this study. Firstly, the success of any emerging forestry governance framework relies on how easily it allows communities to access and use local forests. Secondly, in order to achieve the desired success, the emerging forestry governance system has to allocate space for traditional institutions. The success or failure of a forestry institution can therefore be largely determined by the flexibility of its rules and whether it is accepted or resisted by traditional institutions.

Acronyms and abbreviations

ACAP: Annapurna Conservation Area Project

ANSAB: Asian Network of Sustainable Agriculture and Bio-resources

CAMC: Conservation Area Management Committee

CBS: Centre Bureau of Statistics

CF: Community Forestry

CFUG: Community Forestry User Group

CPRs: Common-Pool Resources

DDC: District Development Committee

DFID: Department for International Development

DFO: District Forest Office

DFRS: Department of Forest Research and Survey

DoF: Department of Forest

FCPF: Forest Carbon Partnership Facility

FECOFUN: Federation of Community Forestry Users, Nepal

GHG: Greenhouse Gas

ha: Hectare

HICAP: Himalayan Climate Change Adaptation Program

ICIMOD: International Centre for Integrated Mountain Development

INDC: Intended Nationally Determined Contributions

INGO: International Non-Governmental Organization

masl: Meters Above Sea Level

MoFALD: Ministry of Federal Affairs and Local Development

MoFSC: Ministry of Forest and Soil Conservation

MoPE: Ministry of Population and Environment

NGO: Non-Governmental Organization

NTFP: Non Timber Forest Product

NTNC: National Trust for Nature Conservation

REDD: Reducing Emissions from Deforestation and Forest Degradation

RIC: REDD Implementation Centre

R-PIN: Readiness Programme Idea Note

R-PP: Readiness Preparation Proposal

RWG: REDD Working Group

t: Ton

tCO₂: Ton Carbon dioxide

UNFCCC: United Nations Framework Convention of Climate Change

VDC: Village Development Committee

List of publications

- Poudel, Dilli P. (2014) REDD+ comes with money, not with development: an analysis of post-pilot project scenarios from the community forestry of Nepal Himalaya, *International Journal of Sustainable Development & World Ecology*, 21:6, 552-562, DOI: 10.1080/13504509.2014.970242
- Poudel, Dilli P. & Aase, Tor H. (2015) Discourse analysis as a means to scrutinize REDD+: An issue of current forest management debate of Nepal, *Journal of Forest and Livelihood*, 13: 1, 44-55.
- Poudel, Dilli P. (2018) Are traditional and modern forestry institutions complementary or do they prescribe contradictory rights in Trans-Himalayan Nepal? A lesson to be learned for REDD+ implementation, *Norsk Geografisk Tidsskrift–Norwegian Journal of Geography*, 72:1, 13–26, doi.org/10.1080/00291951.2017.1413418
- Poudel, Dilli P. Migration, forest management and traditional institutions: Acceptance of and resistance to community forestry models in Nepal (submitted to *Journal of Rural Studies*)

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1. Introduction

1.1 Community forestry: a proxy of development and conservation

Community Forestry (CF) is defined as forestry practices that are undertaken by local communities who are involved in common decision-making and the implementation of forestry activities (Maryudi et al., 2012; Ojha, 2014). It is conceived as the common property resource management of a community which takes socio-economic development and environmental conservation into consideration (Acharya, 2002; Bhattarai et al., 2002; Gautam et al., 2004; Nightingale, 2005; Baral et al., 2007; Charnley & Poe, 2007; Kanel & Acharya, 2008; Thoms, 2008; Ojha, Cameron, et al., 2009). The concept of managing forests through the community has developed as an alternative system to government administration and market-oriented management (Ostrom, 1990), and was first initiated in the 1970s (Gilmour & Fisher, 1991: 4; Charnley & Poe, 2007). At present, approximately 1.6 billion people depend on community-managed forests for their livelihoods (Sikor et al., 2010), with around 10% of the total worldwide forests being managed by local communities (Chhatre & Agrawal, 2009) and about 27% of the forests in developing countries being designed for the community (Larson, 2011). The key aims of CF are to alleviate local poverty, empower forest users and improve forest conditions (Agrawal, 2007; Charnley & Poe, 2007; Kanel & Acharya, 2008; Ojha, Cameron, et al., 2009; Maryudi et al., 2012; Bixler, 2014; Larsen et al., 2015). If these objectives are met then the local implementation of CF is considered to be successful (Richard, 1995; Pagdee et al., 2006). The implementation of CF therefore becomes a justification for decentralization reforms designed to increase efficiency, equity and inclusion by means of sustainable management (Larson & Ribot, 2004). However, the ways in which such institutions are adopted, facilitated or resisted by those who are associated with them continue to raise many discussions concerning development and conservation, and subsequently the society-nature relation.

CF can be viewed as a proxy of development and conservation, which are contentious notions both theoretically and politically. Theoretically, development is an ideology for those who claim to have the ability to change communities through both physical (e.g.,

construction) and non-physical (e.g., education and awareness) means (Pigg, 1993; see also Bista, 1994). For community, the improvement of their livelihood situations is an index of development (Ibid). But if a forest is coercively managed primarily focusing on environmental conservation (see Peluso, 1993), then the CF model could be less effective for the improvement of forest users' livelihoods (Blaikie, 2006; Thoms, 2008). For local communities, CF is a means of meeting subsistence needs, and so they may be less concerned with environmental conservation.

Politically, if a forest is considered to be the property of a local community, as suggested by the common-pool resource theorists (Ostrom, 1990; Agrawal, 2001), then variability in control of and access to the forest exists at various scales (Timsina & Paudel, 2003; Adhikari et al., 2004; Sikor, 2006; Peluso & Lund, 2011). Since communities treat forests as a resource to which individuals require *access* (Ribot & Peluso, 2003),¹ forest users tend to vary socially and economically, with some users therefore often gaining *privileged access* to forest resources on account of their caste, ethnicity, gender and local power relations (Nightingale, 2005; Thoms, 2008; Sikor & Lund, 2009). Under a CF model, different users' access to the forest resources can therefore vary considerably (Ribot & Peluso, 2003). Consequently, local-level interactions, social differences that are expressed through everyday interactions and access to the forests can all determine the success of forest ecology and the development of a community (Nightingale, 2003; Thoms, 2008; Nightingale, 2011; Ojha, 2014).

As the implementation of CF mirrors development and conservation motives, different actors such as forest bureaucracy, national and international development agents and civil activists all involve in the guise of serving these motives (Ojha, Chhetri, et al., 2008). Traditional institutions, moreover, possess an identity as non-state actors in local forest management (Howell, 2014; Wallbott, 2014). But when a society consisting of class, caste, ethnicity, and gender division operates land use practices such as CF, there

¹ According to Ribot and Peluso (2003), 'property' refers to possessing the rights to something, whereas 'access' denotes the ability to utilize that right. This ability is therefore not only determined by whether or not an individual has the rights to a property, but also the extent to which they have access to various means that facilitate access, such as technology, capital, markets, labor, knowledge, authority and access through social identity.

is always the possibility of contestation in terms of resource appropriation and accumulation. Such contestations arise not only through enforcing the knowledge that one social group has (see Nightingale, 2005; 2006), but also by the persistence of traditional forest management institutions and their ability to sanction forest use (Messerschmidt, 1986; Messerschmidt, 1995; Aase & Vetaas, 2007). As forest-community relations are shaped by patterns of ownership (state owned, private property or collectively owned), bundles of rights (rights to access, use, manage, exclude and alienate) and the basis of the claims made over resources (de jure, de facto and customary) (Paudel et al., 2015), these contestations could not only remain apparent but also become magnified when customizing existing forestry institutions or implementing new ones. The implementation of a new framework of forestry governance,² for instance Reducing Emissions from Deforestation and Forest Degradation (REDD+), is not only an example of the involvement of various actors aiming to serve development and conservation motives, but also holds the potential to raise contestation at various scales (see Phelps et al., 2010; Larson, 2011; Patel et al., 2013).

REDD+ is a climate change mitigation option designed to reduce the increasing concentration of greenhouse gases (GHGs) in the atmosphere through minimizing deforestation and forest degradation.³ The emissions from anthropogenic activities, such as the combustion of forest biomass and the decomposition of the remaining plant material and soil carbon, contribute 12-20% of the total global carbon dioxide (CO₂) emissions (van der Werf et al., 2009; Zarin, 2012). Under REDD+, the maintenance or restoration of forests is primarily taken as an effective way to sequester carbon and absorb it from the atmosphere, which is considered as a potential option to reduce climate change and find an economic incentive through the trade of carbon. Since the increasing temperature of the Earth is not simply a local or national problem, REDD+

² I have understood 'governance' as "the body of rules, enforcement mechanisms and corresponding interactive processes that coordinate the activities of the involved persons with regards to a concerted outcome; governance is thus constituted and legitimised by institutions" (Fischer et al., 2007: 123).

³ The full definition of REDD+ is "reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (UN-REDD, 2014: 12)."

is conceptualized as an international climate policy framework which is supposed to reward developing countries and forest owners for opting to reduce emissions from deforestation and forest degradation instead of cutting their forests down. REDD+ did not initially focus on poverty reduction, the enhancement of livelihoods or the associated socio-economic impacts to those who rely on forest resources. These ideas were added after recognizing the importance of forest communities in REDD+ through several pilot projects and a series of negotiations concerning communities' safeguards after its inception in 2005 (Agrawal et al., 2011; Pistorius, 2012; Visseren-Hamakers, McDermott, et al., 2012; Luttrell et al., 2013; Wallbott, 2014). Since CF is an established governance system in terms of clearly defined boundary of forests, local autonomy in designing enforceable rules for the access and use of forests, and provisions for monitoring and sanctioning rule violations, it has been considered an institutional platform to pilot REDD+ (Agrawal & Angelsen, 2009). However, it has since been realized that REDD+ cannot yield successful outcomes if it undermines traditional institutions and the livelihoods of forest-dependent communities (Karky & Rasul, 2011; Lederer, 2011; Visseren-Hamakers, Gupta, et al., 2012; Vatn & Vedeld, 2013). In this context, studying the local-level interaction of CF with both REDD+ and traditional forest management institutions is very important not only to understanding development and conservation motives, but also to providing knowledge to emerging forestry governance such as REDD+. To explore such interactions, the following main research question guides this study:

How does community forestry interact with emerging forestry governance and traditional institutions?

To operationalize the above question, this study, taking cases of CF from Nepal, first examines the interaction of CF with the REDD+ pilot project. It then explores the interaction of CF with traditional institutions, and finally it attempts to combine both types of interaction to provide knowledge to emerging framework of forestry governance such as REDD+. In what follows, I will contextualize the main research question by presenting the historical development of forest governance in Nepal,

explaining the changing state of Nepali forests and placing it in its local context with specific research questions.

1.2 A brief history of forest management in Nepal

In Nepal, various forest management institutions have been implemented, especially since the 1970s, but their principal goals, either implicitly or explicitly, have remained as the conservation of forests and to allow their users some degree of access to the forests for the purposes of their wellbeing. The forests provide firewood, fodder, leaf litter, timber, grazing resources, medicinal plants, saleable products, and edible fruits, and are integrated into agricultural practices that serve the major sources of livelihoods for 72.6% of the total population (WorldBank, 2017). Historically, the forests were traditionally managed by the local inhabitants of small chiefdoms and fiefdoms, and had abundant coverage up until the early 19th century (Bhattarai et al., 2002; Bhattarai & Khanal, 2005).⁴ Prior to 1957, as the land was a source of wealth and power for the state (Stiller 1975: cited in Mahat et al., 1986), the rulers invited anyone to convert as much forestland as possible into agriculture land and asked them to pay tax up to half of their production (Mahat et al., 1986). The ruler also granted forested land as *jagir*⁵ and *birta*⁶ to state employees and the nobles. These grantees were free of tax⁷ and were allowed to keep all of the production from their land (Mahat et al., 1986; Acharya et al., 2008). The rulers also appointed *Jamindars* (village headmen and revenue functionary). The *Jamindar* was also entitled to reclaim as much new land as they wanted without paying any additional tax to the state. *Jagirdars* (state employees) and *birtawal* (land grantees) could lease granted land to peasants. The distribution of land in the name of *jagir* and *birta* accelerated the pace of deforestation during this period.

⁴ A brief history of community forestry in Nepal has also been presented in Paper IV.

⁵ *Jagir* is land granted by the ruler to government officials. These people were known as *jagirdar*. Other land on which the government collected taxes was known as *Jagera* (Regmi 1978: 22).

⁶ *Birta* is land granted to individuals by the ruler for some noble cause until it was confiscated by the ruler (Regmi 1978: 25).

⁷ The terms and conditions of *birta* grants varied greatly. Some grantees used to pay a nominal tax to the government (Regmi 1978: 25).

During the rule of the *Rana* (1846-1950), the policy of encouraging individuals to convert forest land to agricultural land continued (Gautam et al., 2004), and forest decline continued even more rapidly (Bhattarai & Khanal, 2005). *Talukdar* and *jimmawal* (village headmen appointed by the *Ranas* in the Western and Eastern hills) and their *chitaidar* (forest watchman) were responsible for regulating forest use, however there were almost no restrictions on the use of forest products for subsistence purposes (Mahat et al., 1986; Springate-Beginski et al., 2007). Until 1950, one-third of the nation's forest was under *jagir* and *birta* holders, of which about seventy-five percent belonged to *Rana* families only (Mahat et al., 1986; Malla, 2001).

The *Rana* regime was overthrown in 1950, and in 1952-53 a new interim democratic government succeeded at drafting a forest policy. As deforestation was widespread, the policy recommended immediate action towards reforestation in the hills and soil conservation in the *chure*⁸ (Graner, 1997). However, the drafted policy was not able to prevent the conversion of forest land into agricultural land and the export of timber from the *tarai* (southern low-land of Nepal), thus the deforestation continued (Gautam et al., 2004) (see Map 1 in Chapter 3 for the administrative divisions of Nepal).

During 1957-1977, the government nationalized the forests through the Private Forest Nationalization Act of 1957 in an effort to halt deforestation. It diminished the power of the revenue functionaries, the *jamindars* and *talukdars/jimmawal* (Mahat et al., 1986), and immensely restricted forest use (Malla, 2001; Ojha, Timsina, Kumar, Belcher, et al., 2008; Paudel et al., 2009). The nationalization act was further strengthened by the Birta Abolition Act of 1959, the Forest Act of 1961, the Rangeland Nationalization Act of 1961, the Forest Protection (Special Arrangement) Act of 1967 and the National Parks and Wildlife Conservation Act of 1973 (Bhattarai & Khanal, 2005; Sinha, 2011). Although the intention of nationalization was to prevent further deforestation and to promote the use of privately owned forests (Gilmour & Fisher, 1991; Kanel & Acharya, 2008), farmers interpreted the situation as allowing almost free access to the local forests (Malla, 2001). Additionally, as the government had insufficient human and technical

⁸ *Chure* or *Churiya* is the narrow hill land extending east to west between middle hill and the *tarai* (plain) land, which is also known as *siwalik* in India.

resources, it was not able to regulate the forests effectively, thus illegal use of the forests also increased (Gilmour & Fisher, 1991; Malla, 2001; Bhattarai et al., 2002). Consequently, the national forests became *de facto* open access resources, causing widespread deforestation during this period (Bajracharya, 1983; Hobley, 1985; Arnold & Campbell, 1986; Messerschmidt, 1986).

In the 1970s, a major concern of the government was the development of rural areas and the protection of the environment. This led them to follow the recommendations of the Forestry Conference, held in Kathmandu in 1974, to draft a National Forestry Plan (Gautam et al., 2004), which was passed in 1976. This plan recognized the importance of community participation in forest management and realized the impossibility of the protection and development of the forests by the government alone (Shrestha, 1996; Gautam et al., 2004; Bhattarai & Khanal, 2005). The Plan not only focused on forest conservation but was also concerned with meeting local people's needs. This plan can thus be considered a major turning point in the history of the forestry institutions of Nepal.

In addition, the rhetoric of degradation, which was based on the writings of Eckholm (1975) regarding the alleged environmental degradation of Nepal and was later labelled the *theory of Himalayan Environmental Degradation* by Ives & Messerli (1989), also became widespread during 1970s (Kanel & Acharya, 2008). In line with the theory, the World Bank projected in 1978 that the forests of Nepal would be completely depleted within the coming 15 to 25 years (Ibid). The theory contended that the underlying reason for the disastrous flooding of the plains was the depletion of forests by the poor hill farmers of Nepal (Ives & Messerli, 1989). Ojha et al. (2009) and Springate-Beginski et al. (2010) argue that the emergence of a CF model in the hills of Nepal was a response to the theory.

By the late 1970s, in addition to the ongoing deforestation and degradation rhetoric, the growing concern of local people to participate in forest management, the failure of centralized government management and pressure from international agencies all forced the government to initiate a community-level forest management program in 1978 (Bhattarai et al., 2002; Gautam et al., 2004; Paudel et al., 2009). In 1978, the government

implemented Panchayat Forest Rules and Panchayat Protected Rules, and allowed users to form Panchayat Forests (<125 ha of degraded forests) and Panchayat Protected Forests (<500 ha of good forests) at Village Panchayat⁹ (Fox, 1993), which were the precursors of the current CF (Bhattarai et al., 2002). Yet the forest policies were mostly guided by the concept of environmental protection (Malla, 2001; Gautam et al., 2004), and provided limited rights to local communities to use forest resources (Collett et al., 1998; Malla, 2001). Consequently, only a very small proportion of forest land (36,376 hectares compared to a target of 1,835,000 hectares) was handed over to the local communities during 1976 to 1987 (Bhattarai & Khanal, 2005).

Although several policies were implemented before the mid-1980s, the participation of local communities was not as expected. Consequently, the Nepali government, with the help of international donor agencies and Nepali experts, designed the 25-year Master Plan for the Forestry Sector during 1986-88, which was approved by the government in 1989. This plan recognized community and private forestry, and encouraged the transfer of forest management rights to communities (Gautam et al., 2004). The plan also established the concept of Forest User Groups (FUGs) for the management of the forests, and recommended that all accessible forests of the hills be handed over to local communities. The Master Plan for the Forestry Sector of 1989 can therefore be considered as another major policy shift in the history of forest management.

Even after the implementation of the Master Plan, the situation of many villagers did not improve. Villagers did not generally believe that the promise of decentralization of forest management would be effective (Malla, 2001). However, the promulgation of the Master Plan gained momentum after the introduction of the multi-party democracy in 1990. The newly elected government also wanted to enhance community development through the decentralization of power and resource management, and as a result, the

⁹ Forests managed by a *Panchayat*, which was the lowest administrative unit of the government from 1960-1990. The Panchayat system, which elected members from the three-tiered Panchayati institutions (Village Panchayat, District Panchayat and National Panchayat), was headed directly by the king. It was a party-less regime which was established by King Mahendra Bir Bikram Shah Dev in 1960, and was demolished by the People's Movement in 1990, during the reign of King Birendra Bir Bikram Shah Dev. This period is also known as the *Panchayat* regime in Nepal.

Forest Act of 1993 and the Forest Regulation of 1995 were introduced, which contain the most decentralized policies of the government to date. Meanwhile, the National Parks and Wildlife Conservation Act had also been revised in 1993, and initiated the concept of community participation in the management of protected and conserved forests.

The Forest Act of 1993 provided the basis for implementing the Forest Regulation of 1995, which regulates (1) government-managed forest, (2) protected forest, (3) community forest, (4) leasehold forest, (5) religious forest and (6) private forest.

The *government-managed forest* offers limited user rights to the local people, and is regulated by a state agency (the District Forest Office). Locals are allowed to collect grass, dead branches and certain fruits (Acharya et al., 2008).

'*Protected forests*' are being managed with a conservationist objective, and, according to the government, are protected for scientific and environmental reasons (MoFSC, 2013). The local community has limited access to the protected forests. The government states that they are primarily designed to enhance the mobility of wildlife and to conserve biodiversity by linking the existing protected and conserved areas (Shrestha et al., 2014).

Community forest is the most successful local-level forest management program of Nepal, and provides more rights than any other forestry programs to local communities to access, use, manage and sell forest products (Agrawal & Ostrom, 2001; Ojha, Timsina, Kumar, Belcher, et al., 2008; Thoms, 2008). It is implemented by forming a Community Forestry User Group (CFUG).

The *leasehold forest* is handed over to a community for an initial period of up to forty years with the possibility of renewal for another forty years, and is designed to promote local industries and encourage production and sale through forestation. Under the special arrangements of the Forest Regulation, poor and marginalized communities can also apply to the District Forest Office (DFO) for a leasehold forest.

Religious communities or institutions can conserve national forest that is near any religious site by claiming it as a *religious forest*. The procedures for claiming religious forests are similar to those for community forests (Bhattarai & Khanal, 2005).

Private forest that has been planted and conserved in privately owned land by an individual or organization can also be officially registered at the DFO as a private forest. The owner has the right to decide how to conserve, develop, manage and use the forest, and can also determine the price of its timber for commercial purposes (MoFSC, 2013). In the case of timber logging, the owner has to inform the DFO, and also pay the necessary tax to the government.

The National Parks and Wildlife Conservation Act of 1973 manages '*protected areas*', which are particularly aimed to conserve and protect the wildlife and biodiversity of the country. Protected areas are further categorized as (1) national parks, (2) wildlife reserves, (3) hunting reserves, (4) conservation areas and (5) buffer zones. There are currently 10 national parks, 6 conservation areas, 3 wildlife reserves and 1 hunting reserve under the protected areas category (www.dnpwc.gov.np) (see map in appendix 1). This Act was amended for the fourth time in 1993, when the option was created for community participation through the Conservation Area Management Regulation of 1996 and Buffer Zone Management Regulation of 1996 (Heinen & Mehta, 1999; Bajracharya et al., 2008; Paudel et al., 2008). These regulations introduce community-level forestry institutions, namely the Conservation Area Management Committee (CAMC) and Buffer-Zone Management Committee (BZMC), in order to regulate the forests that are under the boundary and buffer of protected areas.

This study concentrates on community forestry that is regulated by the Forest Regulation of 1995 and the Conservation Area Management Regulation of 1996. The details of these regulations and their community-level practices are presented in Paper IV.

In 2008, Nepal first showed its interest in REDD+ (MoFSC, 2008), and embarked into 'REDD+ readiness' in 2010 (MoFSC, 2010).¹⁰ Subsequently, Nepal has formed a three-

¹⁰ REDD+ is supposed to pass through three phases. In the first phase, a country prepares for REDD+ by designing the necessary strategies, such as changing existing legislation,

tiered REDD+ institution, consisting of (1) the Apex Body, (2) the REDD Working Group and (3) the REDD Implementation Center.¹¹ The national objective of REDD+ for Nepal is “to strengthen the integrity and resilience of forest ecosystems, and improve socio-economic and environmental values of forests for emission reductions and increased community benefits through improved policy and legal measures, improved institutional functioning, and with enhanced stakeholders' capacity, capability and inclusiveness” (MoFSC-RIC, 2015: 4).

Following the embarkation into REDD+, six pilot projects have been implemented by national and international organizations in order to support the national REDD+ objective (MoFSC, 2011; Newton et al., 2015). These pilot projects have been implemented in selected districts representing all the geographic regions of Nepal (Ibid). As CF has been successfully implemented and adopted by local communities, it has been used as an institutional platform to pilot REDD+. Since the emergence of REDD+, the responsibility of CF has shifted from purely national concerns such as meeting local people's subsistence needs and local biodiversity conservation, and moved towards more global concerns such as curbing the increasing levels of climate change.

1.3 The changing state of Nepali forests and carbon storage

Alongside Nepal's history of forest management and policy development, national forest coverage has also changed. At the time of the realization of community participation in forest management in 1978, 42.7% of the total land of Nepal was covered by forest. By 1986, this figure had decreased slightly to 42.2%, and then decreased even further to 39.6% in 1994 (MoFSC-FAO, 2009). Today, 44.74% of the

establishing a 'reference level' (a *baseline* for changes in carbon stocks, which is used as a benchmark for measuring the impact of REDD+ policies and actions and to define emission reductions (Angelsen et al., 2012: 381 [emphasis in original])), developing a mechanism for monitoring, reporting and verification of the stored carbon, and capacity building activities. Although Nepal has not fixed its national Reference Level yet, its historical reference period is 2000-2010, and gross emissions and gross removals during the period are 293,231,645 tCO₂ and 85,964,612 tCO₂ respectively (camco-MoFSC, 2015: 24). In the second phase, in addition to capacity building activities, a country starts demonstrating REDD+ activities by piloting REDD+ projects. In the third phase, a country will start to receive incentives for the demonstrated emissions reduction; however, the reduced emissions must be measured, reported, and verified continuously.

¹¹ The details of these institutions have been presented in Papers II & III

country's total land is covered by forest (DFRS, 2015).¹² The following table shows the changes to forest cover between 1978 - 2015.

Table 1: Forest cover status of Nepal (1978-2015)

Cover type	Unit	Years			
		1978*	1986*	1994*	2015**
Forest	Area (000 ha)	5,616.8	5,504.0	4,268.0	5,962.0
	Percentage	38.0	37.4	29.0	40.4
Shrub	Area (000 ha)	689.9	706.0	1,560.0	647.9***
	Percentage	4.7	4.8	10.6	4.4
Total	Area (000 ha)	6,303.7	6,210.0	5,828.0	6,609.9
	Percentage	42.7	42.2	39.6	44.7

Source: * adopted from “Nepal Forestry Outlook Study” (MoFSC-FAO, 2009: 17) and ** “State of Nepal’s Forests” (DFRS, 2015: 25). *** This also includes areas with trees having 5-10% crown cover (531,066 ha or 3.59%); shrub land occupies 116,826 ha or 0.79% of the total land.

During 1978/79 – 1994, the forest area decreased at a rate of 1.7% per year, whereas forest and shrub coverage together decreased at an annual rate of 0.5% (Ibid). The decrease was 0.06% annually during 1990/91 – 2000/01 (MoFSC-FAO, 2009: 17). High population growth, unregulated settlement, unemployment, encroachment, grazing and forest fires were all reported as some of the causes of this forest depletion (Ibid). However, the rate of deforestation slowed during the period 2000-2010 when compared with the period 1995-2000 (FAO, 2010: 230).

Of the country's total forest, 82.68% (4.93 million ha) lies outside the protected areas and is regulated by the Forest Act of 1993. The remaining 17.32% (1.03 million ha) lies inside protected areas and is regulated by the National Parks and Wildlife Conservation Act of 1973. Within the protected areas, core areas contain 0.79 million ha of forest, with the buffer zones containing 0.24 million ha (DFRS, 2015: 29). Approximately 30%

¹² The forest coverage is further divided into two categories as (1) forest, which has more than 10% tree crown cover, occupies 5.96 million ha or 40.36% of the total, and (2) Other Wooded Land (OWL), which includes tree that has 5-10% crown cover and shrub land, occupies 0.65 million ha or 4.38% of the total forest coverage (DFRS, 2015).

of the country's total forest is managed by more than 25,000 community-based forest management institutions (MoPE, 2016).¹³

According to recent estimates, Nepal, which contributes 0.027% of the world's total carbon emissions (MoPE, 2016), preserves a total of 1,157.37 million tonnes of carbon (DFRS, 2015: 41). This figure comprises 1,054.97 million tonnes (176.95 t/ha) from forests, 60.92 million tonnes (105.24 t/ha) from 'other wooded land' (trees with 5-10% crown cover and shrub land) and 41.48 million tonnes (7.84 t/ha) from 'other land'. Furthermore, of the total carbon stock in the forest, tree components (live, dead standing, dead wood and belowground biomass) constitutes 61.53%; forest soils constitute 37.8%; and debris constitutes 0.67% (Ibid).

By implementing REDD+, Nepal aims to reduce about 14 million tons CO₂ emissions by 2020, enhance forest carbon stock by at least 5% by 2025 as compared to 2015 level, and put in place forest carbon trade and payment mechanism by 2025 (MoPE, 2016). Preliminary estimates of the UN-REDD Program (2014: 5) show that REDD+ may bring between \$20 million and \$86 million per year to Nepal.

1.4 Placing main research question in local context

The changes in the forestry institutions, policies and forest coverage, as presented in the above subsections, have not happened in isolation, but must be seen in connection with the wider political and ecological context of Nepal. Despite analyzing deforestation as a historical phenomenon which was mainly caused by the government's land reclamation policy (Bajracharya, 1983), Nepalese farmers and forest users were blamed as the degraders during the 1970s (Eckholm, 1975). The degradation rhetoric created the basis to initiate conservation-oriented and aid-based intervention (Thompson & Warburton, 1985; Guthman, 1997). Subsequently, recognizing the forest as one of the main sources of basic needs¹⁴ (Gilmour & Fisher, 1991; Graner, 1997), the antecedent

¹³ The lands covered by community-based forestry institutions range from 1 to 4,000 hectares (DoF 2009: cited in Ojha, Persha, et al., 2009, p.: 4).

¹⁴ Although food, clothes, housing, education, and health were identified as the basic needs under the Basic Needs Fulfillment Programme of 1985 by the government, the need for firewood was also later recognized as a securement of the basic needs (Graner, 1997: 3).

of current CF was initiated in 1978 considering the farmers as the original managers of the forest and protectors of biodiversity (Hobley, 1985; Arnold & Campbell, 1986; Ives, 1989; Bhattarai et al., 2002). CF flourished during the 1990s and the 2000s, and the same communities who had previously been blamed for the degradation were now considered as the masters to reverse the deforestation process, establish local-level institutions and support economic development in rural areas (Gilmour & Fisher, 1991; Rusten & Gold, 1995; Jackson et al., 1998; Acharya, 2002; Gautam et al., 2002; Manandhar-Gurung, 2007; Ojha, Persha, et al., 2009). During the 2010s, CF institutions have been considered for generating possibilities for both commercial and subsistence purposes (MoFSC, 2010; Paudel, 2016b). The implementation of the REDD+ pilot project in various parts of the country (see MoFSC, 2011; Newton et al., 2015), taken as a potential mechanism to alleviate poverty and conserve biodiversity (MoFSC, 2010; Shrestha et al., 2014; MoPE, 2016), is an output of such consideration.

History shows that the CF of Nepal was sparked by a sense of crisis, that is, deforestation and degradation. REDD+ is a continuation of this conception, and has also been initiated to conserve forests and develop villages through supporting the livelihood earnings of forest users (see Thompson et al., 2011). As REDD+ has been piloted in the country, the extent to which its implementation affects local communities' ability to access forests and the ways in which communities perceive the insertion of such new management frameworks in their local forests are both important issues, not only as a means of understanding development and conservation motives but also to analyze REDD+'s future potential as a system of forestry governance. Studies show that different discourses emerged after its piloting (see Vijge et al., 2016; Blais-McPherson & Rudiak-Gould, 2017). Communities are reported to be skeptical about access to forests, and uncertain about their share of the carbon benefits (Neupane & Shrestha, 2012; Maraseni et al., 2014; Poudel et al., 2014), REDD+ increases external dominance, including donors and international organizations, in local forest management (Ojha et al., 2013), and REDD+ may create conflict at a local level (Patel et al., 2013; Saito-Jensen et al., 2014). However, there is a lack of studies that are methodologically investigating such discourses within the Nepali context. Previous studies also show that the forests and forestry institutions have mainly benefitted the elites and those who hold

more land and livestock (Bhattarai et al., 2002; Adhikari et al., 2004; see also Larson & Ribot, 2007), which therefore severely challenges the development potential of local communities (Thoms, 2008). The implementation of REDD+ may also be an opportunity for providing additional earning potential to those community members who would have more ability to access to forest resources and benefits. If this situation persists, it also challenges meeting the very goal of REDD+. The analysis of discourses concerning the implementation of REDD+ and its interaction with CF users can therefore not only provide insights into ways of rectifying its flaws for future implementation, but also provide insights to policy makers.

Although the traditional institutions of Nepal's hills were formalized as CF after the 1970s (Rusten & Gold, 1995; Malla, 2001; Gautam et al., 2004; Nightingale, 2006), the traditional institutions of the Himalaya region still hold some rights to regulate local natural resources such as the forests, water and pastureland (Aase & Vetaas, 2007; NTNC, 2008; Paudel, 2011; ACAP, n.d.). The persistence of traditional institutions is influential in the decision-making processes regarding local use of natural resources (Messerschmidt, 1986; Aase & Vetaas, 2007; Spiteri & Nepal, 2008). Consequently, while regulating local forests, there are disjunctions and conjunctions between traditional and formal forestry institutions. Being an emerging framework of forestry governance, REDD+ should not dispel the existing institutional plurality and their apparent influence on forest management (Sikor et al., 2010; Howell, 2014; Wallbott, 2014). Neglecting such plurality, when devising regulations in the context of REDD+, may augment conflicts at a local level. In Nepal, however, there is a lack of studies to investigating the diverse relations between formal and traditional forestry institutions, and extrapolating those relations as useful knowledge to emerging forestry governance. The ways in which an emerging framework assumes accountability for incorporating traditional practices and solving potential conflicts also determine the success or failure of a CF (Lederer, 2011; Vatn & Vedeld, 2013).

Moreover, Nepal's forests are also being managed by different types of CF models and their actors, such as the members of local CF user groups, traditional institutions, conservation projects and development agents (see also Ojha, Timsina, Kumar, Banjade,

et al., 2008). Some models offer communities flexible rules to use and manage local forests, while others restrict them to some extent (Agrawal & Ostrom, 2001; Ojha, Timsina, Kumar, Belcher, et al., 2008; Ojha, 2014). Due to such variations in management, the factors behind their success also vary (Paudel et al., 2006; Thoms, 2008; Ojha, 2014). Additionally, due to traditional institutions' ability to sanction local forest use, some communities also resist CF models that are implemented. Consequently, some communities accept CF models while others resist them (see also Lawrence, 2007; Ruiz-Mallén et al., 2015). However, the extent to which these variations in local acceptance of CF models can provide knowledge to emerging forestry governance has also been a largely neglected issue in Nepal. Identifying the reasons behind such local variations and their different actors and factors can make policy-makers more aware of these issues in advance, which may in turn be instrumental to increasing the potentiality of local acceptance of emerging forestry governance in the future.

To fill the above research gaps, this study operationalizes the main research question by framing the following specific research questions:

- i. *How effective is the change of forest management from community forestry to new management frameworks such as REDD+ in terms of forest use?*
- ii. *How can ongoing debates about REDD+ in Nepal be analyzed by using the method of discourse analysis?*
- iii. *How can an understanding of the disjunctions and conjunctions between traditional and formal institutions be a source of knowledge to facilitate future change in forest management?*
- iv. *Why are there local variations in the acceptance of formal forest management models?*

Taking a political ecology approach to analysis of two CF institutions of Nepal (the Community Forestry User Group of Dolakha District and the Conservation Area Management Committee of Mustang District), the above four questions are addressed respectively in four papers. The papers are attached at the end of this thesis. A brief summary of them is presented below.

1.5 Summary of papers

The first research question is addressed in Paper I. This paper, taking a case from Dolakha district of Central Nepal, focuses on the effectiveness of the REDD+ pilot project's implementation in the local community managed-forests, and analyses villagers' experiences after the implementation. The study found that most villagers lacked knowledge about REDD+ and the associated benefits from the pilot project. Few villagers were therefore found to be motivated to participate in the pilot project. In order to facilitate the pilot project, the local CFUGs banned grazing and tightened user rules, which limited the locals' ability to collect and make use of forest products. Furthermore, REDD+ benefits were distributed to some poor households but not to all of them, which resulted in an antagonistic sentiment in the villages. This study suggests that a rigorous assessment of REDD+, combined with the involvement of local community without compromising the uses of forest products, is of the utmost importance before considering REDD+ as an alternative to the CFUG model in Nepal.

The second research question, which is theoretical by nature and addressed in Paper II, is presented in detail in the next chapter, which also explains the theoretical orientation of this study. In brief, a discourse, which is an articulation of an individual or an organization, can be analyzed by using a poststructuralist perspective as presented by Laclau and Mouffe (2001), or a structuralist perspective as presented by Fairclough (1995). The study ultimately suggests combining both perspectives to scrutinize REDD+ in the Nepali context, where people tend to consider the forests as a vital source of earning livelihoods and the foundation of sustaining the local environment.

The third research question is addressed in Paper III. Examining the case of Mustang district of Western Trans-Himalayan Nepal, this paper analyzes the disjunctions and conjunctions between the formal and traditional institutions that simultaneously exist to regulate the forest, and discusses how disjunctions can be reduced to fit the present context of forest management. The study found that the local forests which should by regulation be managed by Conservation Area Management Committees (CAMCs), which are locally formed community-based forest management institutions, are simultaneously managed by the local traditional institutions known as Village Councils.

However, CAMCs were also found to be gaining prominence, as one of the studied villages was collaborating with one. Villagers appreciate the development initiatives undertaken by the CAMCs, but three disjunctions regarding forest management were identified. Firstly, there was a disjunction between two sets of rules for forest resource utilization. Secondly, there were role dilemmas between the members of village councils and CAMCs in regulating the forests because the representatives of the CAMCs, who also live in the villages where the village councils exist, are required to follow the traditional rules. Thirdly, there were territorial disjunctions because the formal administrative forest borders do not coincide with the customary ones. The simultaneous existence of two institutions thus blurs the actual rights over forest resources. The study suggests that knowledge of parallel institutions is vital to acclimatise forest management to new circumstances, such as the implementation of REDD+.

The fourth research question is addressed in Paper IV. This paper explores the reasons for the variations in local acceptance of implemented CF models, that is, CFUGs in Dolakha and CAMCs in Mustang. It does so by proposing three hypotheses. Firstly, that the variation in local acceptance is due to increasing out-migration and decreasing use of community-managed forests for livelihoods. Secondly, that acceptance is due to the management arrangements of the CF models themselves. Finally, that the resistance to CF models can be explained by the persistence of traditional practices of forest use. The study found that acceptance of or resistance to a CF model cannot be explained solely by the migration of forest users and their decreasing dependency on the forests. Rather, out-migration prevents the participation to implement new institutions, and increases institutional vulnerability by reducing active leadership. A CF model that has wider institutional flexibility can succeed in incorporating villagers' priorities and can thus enjoy enhanced acceptance. And the persistence of traditional institutions' ability to impose sanctions on forest uses can resist a formally designed CF model. The study concludes that institutional flexibility and the persistence of traditional institutions are the main reasons behind the variation in local acceptance of CF models. Finally, as the government of Nepal is revising forestry legislation, it is recommended that knowledge of these variations in local acceptance can help policy-makers to better prepare for REDD+ or any other future management model.

1.6 Organization of the study

The diverse control of, and access to, forest resources by differently positioned members of a community may be better represented through cohering different realities that are analyzed in the previously described papers. Philosophically, the extent to which observed realities are real has been debated for several years (Burawoy, 1991b). In chapter two, I shall elaborate on the theoretical orientation of this study. The chapter presents political ecology as the theoretical basis of this study, and discourse theory as an analytical tool of political ecology. The chapter also presents Paper II and reiterates some of the concepts presented in the paper. Chapter three justifies the selection of cases for this study, introduces the study areas, and documents the methodology and methods that have been applied to collect and analyse data. The fourth chapter discusses the study's findings, assesses the potential contribution of these findings to Common-Pool Resource (CPR) theory, and draws conclusions. Finally, the four aforementioned papers are attached in the subsequent section, with each paper sequentially addressing the research questions of this study.

2. Conceptual and theoretical framework

2.1 Introduction: understanding an institution

Forests affect people and their habitat (e.g., ecosystem services), and, simultaneously, people affect forests (e.g., livelihoods use, policy development and management practices). The management of forest is guided by the institutions of a society. These institutions can be formal and/or traditional (see Agrawal, 1995). An institution can be best understood if we look at how it forms or originates in a society. Berger & Luckmann (1966: 70-71) define institutions as regular human actions such as sharing greetings, which are subject to habitualization in society and are understood by those who share the same actions. For them, any activity or action of individuals that is repeated frequently orients to form a social pattern and, therefore, is subject to habitualization. Over the course of time, individuals develop shared concepts, actions and mental maps in the form of language, which establish shared meanings of their actions and cooperation among individuals. Such shared meanings generalize actions and habits and become sources of knowledge for other individuals, and are thus institutionalized in society.

Giddens (1984: 17) considers institutions as the embedded practices which persist in society, such as marriage. According to him, institutions enable human actions through regular practices. During the course of exchanging behavioral practices in society, they create social relations and routines, which establish social systems. Enduring social systems are institutions (Ibid).

In more practical sense, Ostrom (1986) considers ‘rule’ as a concept to refer to an institution. She conceptualizes the prescriptive nature of rules to understand an institution. A prescription refers to commonly known and used actions by individuals, such as required, prohibited, or permitted. These rules are the result of repetitive actions and implicit or explicit efforts of practitioners in defined situations. According to her “institutions are the prescriptions that humans use to organize all forms of repetitive and structured interactions including those within families, neighbourhoods, markets, firms, sports leagues, churches, private associations, and governments at all scales” (2005: 3).

Her definition indicates diversity and various understanding of institutions in various social contexts. This also indicates an elongated use of the term ‘institution’ in the literature. The reason behind diverse understandings of institution, she says, is due to ‘structured situations’ of human relations. Structured situations denote market, elections, regular activities, hierarchies, sports, various social contexts, etc. These situations are guided by regularized behaviour of interaction, which are constructed by institutions.

Differently from the above definitions, North (1990: 1) defines institutions as “the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction”. He considers established social institutions as constraints for the material and social benefits of individuals. However, he agrees that social institutions reduce uncertainty by providing a structure for everyday life, such as how to perform certain actions and tasks in society. But institutions also prohibit or permit human actions, thus, limiting their choices. According to him, the purpose of rules of institutions is to define the way the game is played. Then, this also denotes how to win the game. So, some people use their skills, strategies and techniques ‘to win the game’ or to gain benefits from the established institutions. To mold these tasks people establish organizations, such as political body, economic body, social body and educational body. In a practical setting, institutions determine the *opportunities* available within society, and communities’ practices (the action of individuals and organizations) to take advantage of those opportunities (Ibid: 7).

In the context of natural resource management, however, institutions rather mediate social and environmental relations to get access to resources. Young (2010) thinks that unlike social institutions, natural resource institutions should have the ability to manage socio-environmental concerns. Managing natural resources such as forests not only regularizes human habits or behavior, but also mediates the people-environment relationship (Leach et al., 1999) because they are embedded in a complex socio-ecological system (Ostrom, 2009). An individual’s social position and identity are the instruments of investment in order to gain access to natural resources (Berry, 1989; Nightingale, 2011). This is why politically-oriented leaders, elites (Malla, 2001; Lama

& Buchy, 2002; Timsina & Paudel, 2003) and gender (Nightingale, 2002; Giri & Darnhofer, 2010) are all particularly significant in determining access to forest resources and their institutions.

At present, an institution designed for the management of natural resources, such as community forestry (CF), is beyond the conventional understanding of a small spatial unit, a homogeneous social structure, and as a shared norm (Agrawal & Gibson, 1999; Blaikie, 2006). Rather, these institutions should be viewed as the involvement of differentiated actors with contested interests. The relationship between people and forest is power-laden (Green, 2016) because strategic actors can bypass the constraints of an existing institution and create new institutions that match their interests (Agrawal & Gibson, 1999) and networks of powerful and well connected actors are able to control the flow of knowledge and information (Yates, 2012).

In Nepal, the material access to forest and acquisition of benefits are socially varied and locally contested (Malla, 2001; Bhattarai et al., 2002; Lama & Buchy, 2002; Nightingale, 2002; Timsina & Paudel, 2003; Adhikari et al., 2004; Nightingale, 2005; Poudel et al., 2014). Although local community is the sole actor to govern CF, multiple actors such as development and conservation agents, traditional institutions are embedded within it (see Ojha, Chhetri, et al., 2008), which are also visible in the forest management of Dolakha and Mustang (Papers I, III & IV). Both districts represent different discourses concerning the forest management and resource extraction. Additionally, traditional social structures that are institutionalized through caste and ethnicity and their consequences on local forest management cannot be ignored. Knowing the existing social structure, action of actors and “agency” – ability of actors (Campbell, 2009), are important to examine the interactions of community forestry with emerging forestry governance and traditional institutions. Political Ecology, which conceives social relations and human engagement with nature as dialectically related (Watts & Peet, 2004: 3; Neumann, 2005: 9; Walker, 2005), facilitates an understanding of such embedded social practices of local forest managements.

2.2 The political ecology of community forestry

The term ‘community’ means a group of interrelated people and ‘forestry’ refers to an entity of natural resources that is managed and used by the same group of people guided by an institution. The goal of a CF model, therefore, is not only to conserve the forest but also to utilize it.

Although forest users are equally entitled by rules (see Leach et al., 1999), the utilization of resources varies between them based on factors such as the farm size, possession of domestic animals, the number of family members, social and political networks and their position in society (see also Ribot & Peluso, 2003). Ontologically, the rendering of CF is therefore power-laden. Political ecology, first, seeks to understand the complex relationship between society and nature through careful analysis of social forms of access to and control over resources, which, second, display them through politics of scale (Watts & Peet, 2004: 3). It is complex because it explains non-linear relations between socio-political processes and environmental issues (Walker, 2005; Robbins, 2012). A political ecological lens is therefore useful not only to see its dynamic nature and implementation on a local level but also to examine the complementarity and contestation between governing institutions and their subjects, that is, users.

In the management of natural resources, execution of power through social relations is instrumental (Yates, 2012; Tschakert et al., 2016; Nightingale, 2017), which can become apparent by analyzing local practice of politics (Paulson et al., 2003). Political ecology thus critically assesses the subjectivity – how actors (individual, group or organization) are brought into a position to stake claims, to have a voice, and to be recognizable by authorities (Krause & Schramm, 2011) - while accessing, accumulating and materializing natural resources.¹⁵ Considering political ecology in the guise of political economy, Blaikie and Brookfield (1987: 17), the pioneers, say;

¹⁵ A subjectivity can be represented through the concept of power. Power, in the sense of Foucault, is both productive and repressive, both an enabling and constraining factor that exists only in its exercise, and is thus key to understanding subjectivity (Allen, 2002; Collier, 2009). Power is grounded in varying degrees in diverse dimensions of social class – such as caste, economic assets, social status, gender and also ethnicity (Ojha, Chhetri, et al., 2008).

The phrase 'political ecology' combines the concerns of ecology and a broadly defined political economy. Together this encompasses the constantly shifting dialectic between society and land-based resources, and also within classes and groups within society itself.

Thus,

[T]he human transformation of natural ecosystems cannot be understood without consideration of political and economic structures and institutions within which the transformations are embedded (Neumann, 2005: 9).

Political ecology is an eclectic and inclusive approach that has been retrospectively created from the work of different disciplines, cultural settings and epistemological foundations (Blaikie, 2008). The couplet - political and ecology - was commenced during the 1970s. Nepal nurtured political ecology by hosting the pioneer researchers like Blaikie and Brookfield who not only investigated political ecology but also applied it while linking soil erosion and land degradation with society (see Blaikie, 1985; Blaikie & Brookfield, 1987). Later, several geographers, anthropologists and ecologists nurtured and consolidated theoretical foundations of political ecology. Some put emphasis on 'political' aspects of political ecology (Paulson et al., 2003), whereas others argue that the 'ecology' part is largely ignored in analyses (Vayda & Walters, 1999). Nonetheless, political ecology has increasingly been acknowledged for its potential for contextual analysis of environmental issues (Graner, 1997: 34).

Political Ecology questions both the simplified and misleading descriptions and causes of human-environment relations, such as overpopulation, environmental degradation and underdevelopment (Walker, 2006; Benjaminsen et al., 2010; Robbins, 2012). Blaikie (1985: 4 [emphasis in original]) uses the term 'colonial' or classical model to describe the oversimplified representation of the causes of environmental degradation as a policy prescription. It is colonial because rulers cannot see degradation as a complex socio-environmental problem. They blame the land users themselves as a cause of degradation, subjecting them as *lazy, ignorant, backward or irrational*, which later link the problems with overpopulation and prescribe an involvement of cultivators and

pastoralists in the market economy as a policy solution (Ibid). The political ecological approach is a tradition that dismantles such oversimplified descriptions by creating as well as nurturing the space for other possibilities (Robbins, 2012: 98).

The politicizing of Nepalese forest management accelerated after the emergence of Erick Eckholm's (1975) rhetorical writings regarding alleged environmental degradation in Nepal. Despite Nepali farmers' being aware of local physical and environmental fragility for a long time, Eckholm blamed them for the degradation (Ives, 1989; Manandhar-Gurung, 2007). The rhetoric, consequently, established an imaginary environmental crisis narrative, according to which "environmental degradation is seen as a *result* of underdevelopment (of poverty, inequality and exploitation), a *symptom* of underdevelopment and a *cause* of underdevelopment (contributing to a failure to produce, invest and improve productivity)" (Blaikie, 1985: 9 [emphasis in original]). It became a hegemonic¹⁶ discourse and justified many aid-based interventions in Nepal (Thompson & Warburton, 1985; Guthman, 1997). As the theory had influenced Nepali bureaucrats (Kanel & Acharya, 2008), it was also one of the justifications to accelerate the implementation of CF in Nepal, whose main financial source is still international donors (Kanel & Acharya, 2008; Ojha, Persha, et al., 2009; Springate-Beginski et al., 2010).

As the political ecological approach seeks to demystify narratives and the status-quo, and expose unseen power relations among actors at different scales (Walker, 2006), analysis of discourses concerning control over and access to forest resources is inextricably associated with political ecology. Extension of political ecology through discourse analysis further sharpens its analytical capacity, which has commonly been adopted as a method of analysis (Neumann, 2005: 7).

2.3 Discourse theory: a tool of political ecology

A discourse is an attempt to fix a web of meanings within a particular domain (Laclau & Mouffe, 2001) which creates a particular way of talking about and understanding an

¹⁶ Hegemony is a social consensus achieved without recourse to violence or coercion, but rather through articulation (Cox, 1983)

aspect of the world (Jørgensen & Phillips, 2010). It emerges through a talk or discussion which is articulated – relying on cultural and political context – by an individual or an organization to produce an intended meaning. Articulation is an act or process which establishes relations between words by distorting and/or modifying their independent meanings. The words are therefore treated as signs¹⁷ which interpret other signs in the analysis of discourses (Paper II). Laclau & Mouffe (2001: 105) say;

The structured totality resulting from the articulatory practice, we
[will] call *discourse*.

A discourse can be a perspective of social actors and organizations such as politicians, conservationists, academicians (Fairclough, 2012). It is therefore a special form of social practice, which should be understood as (1) a language text, written or spoken; (2) a discursive practice, text production and interpretation; and (3) a socio-cultural practice, with impacts on individual and organization (Fairclough, 1995). An articulated discourse can therefore dominate in a society which masks people's real interests (Jørgensen & Phillips, 2010: 32). Dominant discourses may later be implemented as policies and laws which undoubtedly affect local resource users (Benjaminsen & Overå, 2011). Analysis of discourses, in addition to unpacking articulated texts, can explore how a particular knowledge of society becomes dominant and common sense, while simultaneously silencing other interpretations (Waitt, 2010).

As discourses are embedded in material social practices, they can be performative as well as descriptive (Dittmer, 2010). Discourse theory suggests that knowledge is created through regular interactions, so it is contingent. Being an action, an emergence and practice of discourse can be thus seen as an exercise of power (Fairclough, 1995; Jørgensen & Phillips, 2010; Fairclough, 2012; Rear, 2013). Broadly speaking, discourse theory, which is also called discourse analysis, is rooted in two school of thoughts. The first advocates that discourse is constitutive of society, thereby all social relations, ideologies, identities, conventions and so on are parts of discourse (Laclau & Mouffe,

¹⁷ A sign is a something physical, perceivable by our senses; it refers to something other than itself; and it depends upon a recognition by its users that it *is* sign (Fiske, 1990: 41 [emphasis in original]).

2001: 107-111). It does not consider a rule-bound society prior to discourses. Consequently, other social fields like the economy, infrastructure and institutions are also parts of discourse. It rejects a world outside discourse, and simultaneously rejects non-discourses (Laclau & Mouffe, 2001: 107). The second school of thought holds that discourse is both constitutive and constituted by society through a dialectical relation between discursive and non-discursive social practices (Fairclough, 1995: 96-98; 2012). It assumes the pre-existence of rule-bound society and its structures (norms, rules, institutions). Jørgensen & Phillips (2010: 20) categorize the first school of thought as poststructuralist and the second as structuralist discourse theories. Both have been used as analytical tools while analyzing the political ecological character of a phenomenon (Demeritt, 2005; Neumann, 2005: 7; Walker, 2006). Escobar (1996: 326), advocating the poststructuralist analysis of discourse in political ecology, says;

[T]he poststructuralist analysis of discourse is not only a linguistic theory; it is a social theory, a theory of the production of social reality which includes the analysis of representations as social facts, inseparable from what is commonly thought of as ‘material reality’.

In Paper II, in addition to the above theoretical foundation, the methodological dimensions of both school of thoughts have been explained with an objective to show how discourse analysis can be a methodological tool to scrutinize texts under the aegis of REDD+. A brief summary of them is given below.

For Laclau and Mouffe (2001: 112 [emphasis in original]), the poststructuralists, an articulatory practice begins at the *nodal point*, which is a privileged sign that succeeds to attain a paramount position among existing signs. For instance, REDD+ introduces itself as a solution to an ecological as well as a social problem. A nodal point gains exclusive status through the articulation of *elements* (Ibid: 105 [emphasis in original]). Elements are also signs but their meanings are yet to be fixed by a nodal point. The elements whose meaning had been fixed by discourse are called *moments* (Ibid: 105 [emphasis in original]). The form of relation of elements with the nodal point is indicated by *field of discursivity* (Ibid: 111 [emphasis in original]). The signs used to articulate REDD+ are all either elements or moments of REDD+, or under the field of discursivity

of REDD+. For instance, in the REDD+ piloted districts of Nepal, deforestation, carbon sequestration, poverty reduction and aid mechanism are examples of elements or moments whose individual discourses are under the aegis of REDD+. Those signs which are not in the position of elements or moments are called *floating signifiers* (Ibid: 113). For example, the role of CF in REDD+, inclusion of traditional institutions like that of Mustang, the possibility of recentralization of CF, and the government's intervention through the declaration of new conservation areas are some of the floating signifiers in the context of REDD+ in Nepal.

Fairclough (2012: 9), the structuralist who prefixed 'critical' in front of discourse analysis, sees relations between elements as material and discursive, thereby they are dialectical. He finds discourse analysis critical and normative as well as explanatory because it not only describes the realities, but also establishes, explains and evaluates them as the effects of social structures (inequalities in wealth and access to various goods). In the model he developed, called *three-dimensional method of discourse analysis* (see figure 2 in Paper II), he not only tries to bridge language with society but also crystalizes a link between social structures and practices. In the model, he links regular social relations and behaviors (socio-cultural practices) and text production and interpretation (articulatory practices), which are mediated by existing discourses (discursive practices).

Finally, Paper II recommends combining Laclau & Mouffe's concepts of nodal point and elements with Fairclough's three-dimensional method to scrutinize REDD+ in Nepal and elsewhere.

In this study, the adoption of discourse analysis to execute political ecology fills the hiatus of theory and methodology while analyzing control over and access to forest resources. As data are the preconstituted concepts of respondents, their meaning can be evaluated only in relation to the context of their production (Burawoy, 1991b), so they are discursive by virtue.

Epistemologically, the terms 'political' and 'ecology' stand for two different approaches to knowledge. 'Ecology' is objective and more related to environmental science,

whereas ‘political’ is subjective and socially constructed by different actors of society (see Blaikie & Oliver, 2007). However, according to Neumann (2005: 8), political ecologists incorporate ‘ecology’ in their analysis in two ways: as a source of empirical evidence and as a subject of critical analysis. In this study, presentation of the state of forest coverage, carbon storage and their environmental consequences are the empirical evidences of ‘ecology’. I have considered the ‘political’ aspect of political ecology in three ways: as a subject of analysis of community relations with forests through local interactions; as a subject to analyze variations in access to local forests; and as a subject to assess the policies devised to manage community forests. The application of political ecology, thus, enables me to examine discursively (1) *how* forests are being managed, (2) *who* has access to forest products, forest benefits, and access to and control over forest managements, and (3) *how* context, that is, REDD+, affects forestry institutions and simultaneously gets feedback from local interactions. This study is guided by these notions of political ecology where I have discussed the diverse management institutions, their regulations, and contested distribution of resources and access to forests. In this line, specifically, in Paper I, I have analyzed how forest users’ access was hampered after the introduction of REDD+ pilot project, and how the distribution of REDD+ money created an antagonistic sentiment among some of the users. Paper II, as stated earlier, discusses the potential application of discourse analysis in the context of REDD+. The knowledge I have gained from this Paper has been supportive to analyze informants’ discourses in all Papers. Paper III presents disjunctive and conjunctive relations between formal and traditional institutions, and analyzes complementary and conflicting rights to use, manage and access to local forests. Paper IV critically assesses two of CF policies and analyzes the potential reasons of why some communities accept implemented CF model and why others resist it. Finally, the political ecological thinking also helps me to make sense of historical process of forest policy outcomes in Nepal (see Paper IV).

3. Fieldwork and Methodology

3.1 Introduction

Methodology entails a research strategy that outlines selection of study sites, method of data collection, fieldwork process, researcher's positionality and subjectivity, unit of study, samples and mode of data analysis. In this chapter, I will present the methodology used in this study in details.

3.2 Why Mustang and Dolakha? Selection of the cases

Three reasons motivated me to select Mustang and Dolakha districts as two case study sites for this study.

Firstly, the influential position of the Thakali community in the management of local forests of Mustang has been largely neglected in academic research. As the present influence of Thakali on local political ecology is historically rooted (Paper IV), studying this issue in the context of REDD+ can provide new knowledge for the future implementation of forestry governance. Additionally, the selection of Thakali villages where the forests are conjointly managed by formal and traditional institutions is an opportunity to analyze how future changes in forestry institutions could be affected by the interrelationship between traditional and modern institutions. Dolakha, being a pioneer district for the implementation of CF program in Nepal during the 1970s, was also one of the pioneer districts for the implementation of REDD+ pilot project in 2010. The pilot project was one of the largest in Nepal (see Shrestha et al., 2014), and, in 2013, it was coming toward the end of its program. Conducting fieldwork at the end of the pilot project made it possible to study how communities shared its effects. As Dolakha not only had a fluctuating history of forest management policy (Paper IV) but was also the site for an emerging forestry governance, selection of this district as one of the case study sites could provide knowledge of how forest users were affected after the implementation of a REDD+ pilot project and how forest communities perceived REDD+ *per se*.

Secondly, in addition to the influence of traditional institutions, the forests of Mustang are managed by the Conservation Area Management Committees (CAMCs) under the

Conservation Area Management Regulation of 1996, and Dolakha's forests are managed by forming the Community Forestry User Groups (CFUGs) under the Forest Regulation of 1995 (Paper IV). Like Dolakha, which was one of the pioneer districts for the CF program under the Forest Act of 1993, Mustang was also a pioneer of implementing conservation CF under the National Parks and Wildlife Conservation Act of 1973. Presentation of these divergent management institutions places this study in a unique position. As most studies regarding the community forestry of Nepal focus on CFUGs or the management institutions designed under the Forest Act of 1993, the selection of two different CF institutions allows me to provide cumulative knowledge that may be illuminating for the emerging framework of forestry governance.

Thirdly, the selection of these districts is also due to my previous experience working in these areas. I worked in Mustang as part of my M. Phil's fieldwork in 2007 and was involved in fieldwork in Dolakha in 2012 (see below). My knowledge of the study areas both geographically and socially in advance of fieldwork and the opportunity to draw on existing contacts eased my access to the field and also reduced data fallacy.

3.3 Study area: Dolakha and Mustang districts of Nepal

Dolakha and Mustang districts share their northern borders with China (Map 1). Among the five Development Regions of Nepal, Dolakha and Mustang Districts belong to the Central and Western Development Regions, respectively. Although both districts belong to the Himalayan region, they are different in terms of geography and people (see appendix 2 for caste-ethnic composition).

Dolakha ranges from 732 to 7148 meters above sea level (masl), and covers 2191 square kilometers of land. It receives an average of 2043.5 mm of rainfall annually and has approximately 70% of its land area with a slope greater than 30° (DDC, 2008). Being located on the windward side of the Himalaya, the average annual temperature of Dolakha ranges between 8° to 18°C, and receives more rainfall during the monsoon season (Ibid).

According to the 2011 census, the total population of Dolakha is 186,557 with average annual growth rates between 2001-2011 of -0.91 (CBS, 2014). Agricultural land

occupies 28% of the total land, and agriculture, livestock rearing and migration are the primary livelihood activities (Ibid). The forest is an inextricable component of the local livelihoods (DDC, 2008).

Dolakha district is further divided into 51 Village Development Committees (VDCs) and 1 Municipality. VDC and Municipality are the lowest administrative and political units of the Nepal government.¹⁸ Of them, Lakuridada and Magapauwa¹⁹ were selected for this study (Map 1).²⁰ As a VDC contains several villages and hamlets (*toles*), more than 20 settlements were visited during the survey (see appendix 3). The study villages, which are located between approximately 1500 to 2700 masl, belong to subtropical-to-temperate climatic zones (Lillesø et al., 2005). The villages of Dolakha are relatively scattered where less than 10 households to more than 65 households have been observed. A total of 924 households in Lakuridada VDC and 284 households in the study villages of Magapauwa VDC are inhabited (CBS, 2012). Newar is the main community of the Dolakha study villages, which is followed by Tamang, Kshetri, Thami and Brahman (see Gurung, 2007 for the caste system of Nepal). Newar, Tamang and Kshetri comprise more than 90% of the total population of the study villages. Except for the Buddhist Tamang, all of the communities follow the Hindu religion. The caste - ethnic affiliation of the respondents has been presented in appendix 4 & 5, and see appendix 6 for the total population of the VDCs by caste/ethnicity.

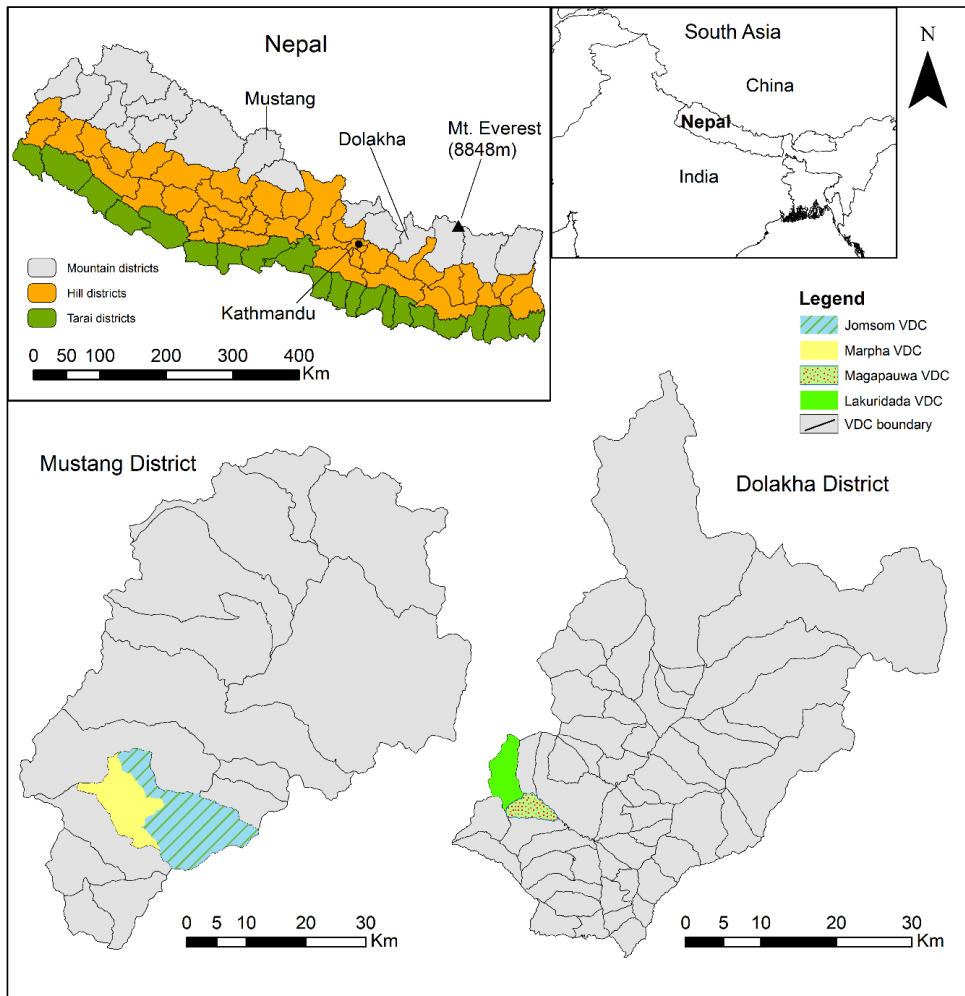
Forest area covers 47.4% of Dolakha district (DDC, 2008). The forest is mainly covered by chir pine (*Pinus roxburghii*: e.g., known locally as *gobre salla*), blue pine (*Pinus wallichiana*: *rani salla*), oak species (*Quercus glauca*: e.g., *baajh*) and alder species (*Alnus nepalensis*: e.g., *utis*) (www.ansab.org, accessed on 07 June 2014).

¹⁸ The government of Nepal has recently restructured the VDCs and municipalities and converted them into Gaupalikas and municipalities (MoFALD, 2017). At present, there are two municipalities and seven Gaupalikas in Dolakha District.

¹⁹ According to the recent federal restructure of the country, Lakuridada VDC belongs to the Bhimeshwor Municipality and Magapauwa VDC belongs to Sailung Gaupalika.

²⁰ See Paper I for the specified location map.

Map 1: Study area²¹



Mustang ranges from 1640 to 7061 masl and covers 3573 square kilometers of land. It receives less than 200 mm of rainfall annually (70 mm in the upper region) and has more than 83% of its land area with a slope greater than 30° (DDC, 2014). The average annual temperature ranges between 0 and 17°C (Ibid). Most parts of Mustang are located on the leeward side, so it is a rain shadow district of the Himalaya, receiving less rainfall during the monsoon.

²¹ Unless otherwise stated, all location maps in the thesis are designed in ArcGis 10.3.1 by the author

According to the 2011 census, the total population of Mustang is 13,452, with average annual growth rates between 2001-2011 of -1.08 (CBS, 2014). Although agriculture is one of the main means of earning local livelihoods, only 2% of the total land of Mustang is classified as agricultural land (DDC, 2014). In addition to agriculture, tourism, business and migration are other sources of earning livelihoods (NTNC, 2008). The forest is an important component of local livelihoods (Paper III).

Mustang district is further divided into 16 VDCs.²² Of them Jomsom and Marpha²³ were selected for this study (Map 1). Since the district adheres to traditional practices of forest management, two compact villages, Thini in Jomsom VDC and Syang in Marpha VDC,²⁴ were selected (see appendix 4, 5 and 6 for the caste-ethnic composition). The study villages, which are located between approximately 2700 to 3000 masl, belong to cold temperate zones (Lillesø et al., 2005). Thini and Syang contain a total of 115 and 235 households respectively (DDC, 2014). They are inhabited predominantly by the Thakali community, which comprise about 70% of the total population. Pariyar and Bishwakarma²⁵ are the second largest, the third is Gurung, and recently migrated households from other districts comprise the fourth. The third and fourth category of households are mostly sharecroppers, tenants and those taking care of migrants' properties. Except for the Hindu castes of Pariyar and Bishwakarma, all other communities are Buddhist.

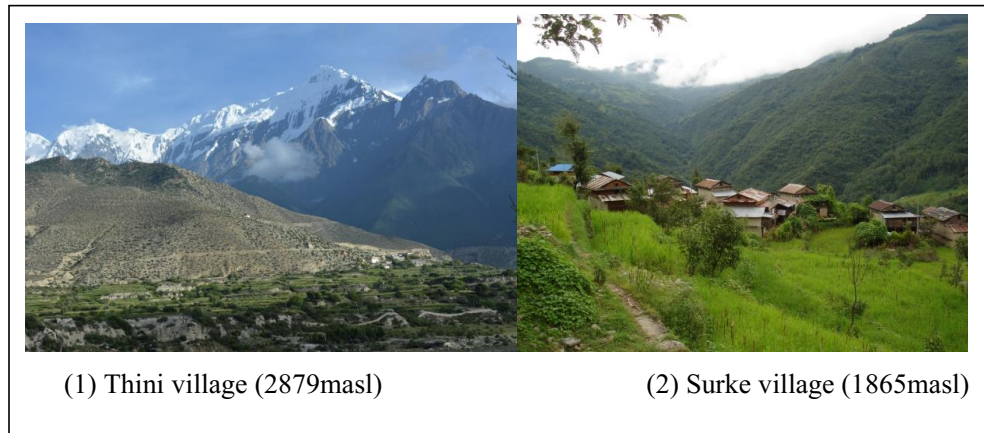
²² According to the recent federal restructure of the country, Mustang district has five Gaupalikas (MoFALD, 2017).

²³ According to the recent federal restructure of the country, Jomsom and Marpha VDCs belong to Gharapjhong Gaupalika.

²⁴ See Paper III for the specified village level location map.

²⁵ Lower caste communities who are also known as *dalit* were previously categorised as 'untouchables' (DFID & WorldBank, 2006; Aahuti, 2007).

Photo 1: Thini village of Mustang and Surke village of Dolakha



According to myth, there was forest even in the upper Mustang 200 years ago (Peissel, 1968: 213), but at present only 3.24% of the total land is covered by forest (NTNC, 2008). Mainly maple (*Acer* species: known locally as *pangre*), blue pine (*Pinus wallichiana*: *rani salla*) and rhododendrons are found in the lower region, while at the higher elevations conifers (*Juniperus* species: e.g., *dhupi*, *Abies* species: *talis patra*) and birch (*Betula utilis*: *bhojpatra*) are found (DDC, 2014).

3.4 Positionality during fieldwork

Fieldwork is an intensive interaction between a researcher and a targeted population over a substantial period of time (Briggs, 1986: 7). It is a dynamic process which does not happen in a social vacuum (Dowling, 2010). Researcher and respondents are affected by their own socio-cultural background, meaning that their age, gender, caste/ethnicity, occupation, religion, region etc. can all either inhibit or support the research process (England, 1994; Banks, 1998). Recognizing our own position as well as that of the respondents while exploring situated knowledge about the phenomenon under study is conceptualized as ‘positionality’ and ‘self-reflexivity’ in human geography (Rose, 1997). England (1994 [emphasis in original]) defines reflexivity as a self-critical and self-conscious *analytical* scrutiny of the self as researcher. Being reflexive means presenting the situations that one has experienced during the data collection process, which is in fact crucial to the research and its results (Berreman,

1962). Based on these epistemologies, the following sections present my positionalities during fieldwork.

The fieldworks for this study lasted a total of five months and were undertaken during the periods August - November 2013 (2.5 months), July – September 2014 (1.5 months), and November – December 2015 (1 month). Since the main festivals of Nepal (*dashain* & *tihar*) fall during October and November, breaks were taken during the fieldwork. Both study districts are far from my home district. Although my parents both migrated from neighboring districts of Dolakha, I was born and grew up in the southern Tarai plain (Sarlahi District). The people I interacted with, especially in Mustang, were therefore completely different in terms of region, caste/ethnicity, and society. In the case of Dolakha, some of the respondents were similar to my cultural background, although the geography of the study area was completely different.

As I indicated in the earlier section, I had visited both study districts prior to commencing the PhD program. My familiarity with the study areas was very useful for initiating the fieldwork. Initially, in Mustang in 2014, the senior members of the village with whom I had previously conversed were unable to recognize me (photo: 3 of the subsection 3.5.3). However, the former CAMC head who hardly remembered me when I met him on the way to Mustang became a ‘door opener’ after my reintroduction. Some villagers expressed that although they recognized me, they couldn’t place me, while others looked at me with an expression of familiarity or confusion. My repeated presence in the villages increased the perceived trustworthiness of my research activities. My knowledge about their social structure from the MPhil’s fieldwork helped me to demonstrate familiarity with their culture and traditions during the interviews, which facilitated the collection of additional data.

I was in Dolakha in 2012 with eight other colleagues to carry out a household survey as a part of the Himalayan Climate Change Adaptation Program (HICAP), which was funded by the Norwegian Government and administered by the International Centre for

Integrated Mountain Development (ICIMOD).²⁶ During this fieldwork, I met several villagers who later helped me to extend my contacts during the PhD fieldwork. These contacts especially helped me to meet CFUG members and those who were involved in piloting REDD+ in the VDCs.

The positional space that I gained from my previous experiences influenced my fieldwork process. In Mustang I mostly remained *a student*, but sometimes I was also positioned as *a consultant* and a *researcher*. Being a PhD student of a foreign university some people, especially youths, were curious to know about international education and the admissions process. I happily shared my knowledge with them and in exchange I was able to collect information about important people in the villages. For instance, in Syang village, which I had not visited during my MPhil fieldwork, whilst sharing information about international education with local youths I could ask them about individuals who might have knowledge of forest management and the local traditions. The CAMC's head of Marpha VDC and the village headman of Syang village, with whom I talked to several times, were brought to my attention. Two teachers whom I had also interviewed during my MPhil fieldwork, and some people of Jomsom (the district headquarter of Mustang) positioned me as a researcher. They had heard about REDD+ and were curious to know more about it. After interviewing them I understood how deeply the tradition of using forests was rooted in the villagers' habits.

One of my contacts in Dolakha, a roadside teashop owner, introduced me to a local CFUG member who later helped me to expand my list of contacts to other CFUG members. When the teashop owner introduced me for the first time, he said "*this sir was from ICIMOD last year*". Initially, I did not think anything of his introduction. Later, upon reflection, I realized that it had given a positive impression to the person to whom I was being introduced. This was because at that time ICIMOD had thrice distributed the REDD+ fund to local CFUGs in collaboration with the Asian Network of Sustainable Agriculture and Bio-resources (ASNAB) and the Federation of Community

²⁶ ICIMOD outsourced the fieldwork part of this project to the Nepal Development Research Institute (NDRI), a Kathmandu-based NGO, where I used to work as a Research Associate. NDRI assigned me to carry out the project as a Project Coordinator.

Forestry Users, Nepal (FECOFUN), who had been implementing the REDD+ pilot project in the local CFUGs of the Charanawati Watershed (Paper I). ICIMOD, ANSAB and FECOFUN therefore all enjoyed very good reputation among the CFUGs. In addition, as I had coordinated a survey in 2012, the early informants took me as a *bikase hakim* (an officer from an NGO or INGO). After having frequent contact with key individuals, I established my position as a *PhD researcher*. When I was a *bikase hakim*, my relation with the respondents was probably not *reciprocal*, but rather would have been *exploitative* (Dowling, 2010). Informants could have taken me as a person who might have access to INGOs and could therefore bring a development project like the REDD+ pilot project to the villages. However, when I succeeded in switching my position to that of a PhD researcher, I felt sometimes as an ‘insider’ and sometimes as an ‘outsider’. In Mustang, I also occasionally felt ‘avoided’.

Having fluctuating positions reminded me of Banks’s (1998) typology of *the insider-outsiders*. Banks explored four types of insider-outsiders while doing social research. First is *the indigenous-insider*, who is perceived as a legitimate member by the community because this person endorses the unique values, perspectives, behaviors, beliefs and knowledge of his or her community. Second is *the indigenous-outsider*, who has been socialized and also belongs to the same indigenous community but has experienced high levels of cultural assimilation into an outsider or oppositional community, and whose values, beliefs, perspectives and knowledge are therefore aligned with those of the outsider community. The third type is *the external-insider* who does not belong to the studied community but has rejected many of the values, beliefs and knowledge of his or her own community and endorsed those of the studied community. This individual, according to Banks, is viewed as a new member or as an adopted insider. The last type is *the external-outsider*, who has been socialized in a different community and has only partial understanding of and little appreciation for the values, perspectives and knowledge of the studied community.

In Dolakha, the influence of NGOs and INGOs on local development is substantial. Some CFUG members and elites were aware of the benefits that they could potentially gain from such organizations, and so I therefore got a lot of attention while I was

perceived as a *bikase hakim* at the early stage of fieldwork. Once they understood that I was a mere student and not able to bring any such project, it started to take longer to get appointments for interviews. Later I realized that this was not only related to my position as a student, but also to the high frequency with which these persons were interviewed by I/NGOs and researchers. Since Dolakha is located about 150 kilometers northeast of Kathmandu, several I/NGOs have selected it and its neighboring areas (Sindhupalchowk, Kavrepalanchowk, Ramechhap districts) as their pilot district or the areas for baseline surveys concerning their respective projects. Key individuals, including many villagers, have been extensively interviewed over the last decade. Being in an area similar to mine in terms of culture, I was an insider, but being in the overwhelmingly researched area I was outsider. However, I never felt avoided in Dolakha. Perhaps, in Dolakha, I was *the indigenous-outsider* in terms of my social and cultural affinities.

In Mustang, the culture and community were completely different from those of Dolakha as well as from my own. Although I was aware of their unique traditions to some extent, I still did not belong to their community. I explicitly was *the external-outsider* in Mustang. Due to repeatedly being present in the villages, my face was known to many villagers. However, compared to my experiences during the MPhil fieldwork, this time I noticed that many villagers were less interested in talking to me. Since ethnic politics have recently increased in Nepal (Paudel, 2016a), I initially thought that their decreased interest to talk with me was due to my social background of being Hindu and Brahman (so-called high caste in Hindu society), but later realized that there were other factors which inhibited the early stage of my fieldwork. Firstly, since one of the studied village's forests was recently merged with CAMC (in 2012), the villagers had mixed reactions to this change (Paper III). Some of them even avoided talking about it. Secondly, when I was in the field, especially in November 2015, the villagers had just harvested the buckwheat and so were busy ploughing and manuring their fields in preparation to sow barley. Due to their busy schedules in the fields, some respondents could not spare enough time to talk with me. In addition, some respondents simply did not show interest while talking. Sometimes I visited respondents at their homes in the evening – of course with their expressed permission - which may not have been the ideal

time for some informants, having worked hard all day in the fields. It was particularly during this period that I had to contact key individuals several times in order to arrange a meeting. If I had not mobilized local field assistants, it would have been difficult to complete the fieldwork in Mustang.

I was also in the field with my personality, ability and academic as well as social knowledge and skills, all of which I found instrumental to carrying out the fieldwork, even in such varied cultures and geographies. Moser (2008) points out that an individual's mental and emotional abilities have an impact on the research process and outcome. The respondents and I communicated in Nepali, which not only made it possible to understand the direct answers of the questions that I asked, but also helped me to understand their reactions and facial expressions. I was aware that a respondent could share information in different *message forms* (auditory, visual), relying on local *codes* (linguistic, nonverbal) and *social situations* (context: location, time) (Briggs, 1986: 41). Information from these sources could have been missed if I was not familiar with the local social settings.

Furthermore, I showed patience during the interviews. I never began the survey without informants' consent. After explaining my interest, purpose, need and importance of talking with them, I always took their consent, and marked with yes/no in each survey questionnaire to ensure it. I met key informants in advance to build a rapport with them. While conducting the interviews, I strived to be *a good listener* (Silverman, 2011: 161), and remained flexible (in terms of time and the issues they would like to discuss) until the end of the interviews.

Informants' were fully assured that they could leave the interview at any time and skip any question. They were assured that the information they provided would solely be used for academic purposes and without mentioning their name. I participated in local traditional festivals. I visited respondents' homes whenever they wanted me to come. I never took any photographs without prior consent. I never oriented myself politically, religiously and socially to any groups, political parties or religious communities. I therefore succeeded not only to establish some enduring contacts with villagers, but also collected the desired information, which I will explain in more detail below.

3.5 Research design, approach and techniques

Research design invokes a connection between participant community and interpretative community (Stratford & Bradshaw, 2016). The former refers to the people with whom we interact, survey and talk (i.e., informants), and the latter refers to the people who interpret trustworthiness, rigor and credibility of the knowledge we produce (i.e., readers). Based on this epistemology, this study attempts to link the two communities through the two cases, which requires a case study method.

3.5.1 Case study method

The three reasons for selecting the two cases explicitly denote that the selection of cases are *inherently particular* in terms of society, place and their importance to the interpretative community (Burawoy, 1991a). Selection of a case, therefore, is not “natural” but is an analytical construct aiming to organize knowledge about reality in a manageable way (Lund, 2014 [emphasis in original]). Indeed, there are instances where a case needs a researcher to find a solution to a problem, such as in action research (Stratford & Bradshaw, 2016).

Theoretically, there are two ways of knowing a case. They are concrete and abstract. Concrete cases are discrete sets of events and actions which an observer can discern, whereas the abstract cases, which participants may experience but are not easily discernible, need to be established through concepts (Lund, 2014). For instance, ‘forest management in Nepal’ is an abstract case, but ‘effect of REDD+ on the community forestry of Dolakha’ is an example of a concrete case. However, the concrete cases can be interpreted as abstract cases through concepts and theories. For instance, ‘effect of REDD+ on the community forestry of Dolakha’ can be interpreted through the concept of political ecology which can link management activities and policies at different scales from local to national level, and can show *how* forests are being managed in Nepal in general and how it is in Dolakha in particular. The concrete and abstract cases are contingent in space and time.

In an empirical sense, a case, according to Gerring (2007: 19), ‘connotes a spatially delimited phenomenon (a unit) observed at a single point in time or over some period of

time. It comprises the type of phenomenon that an inference attempts to explain'. A case study, therefore, analyses a social phenomenon specific to time and place (Ragin, 1992: 2).

The case study approach is an appropriate method when research is exploring what is going on in a particular situation (Hammersley & Gomm, 2009: 7), seeks to understand complex social phenomena (Yin, 2014: 4) and needs to improve understanding (Stake, 2009: 11). A case, according to Yin (2014: 4 [emphasis in original]), needs to be examined when we: (1) need to answer “how” and “why” questions; (2) are dealing with a contemporary set of events; (3) cannot manipulate the behaviour of the cases under study; and (4) want to cover contextual conditions because they are relevant to our study (however the boundaries between phenomena and context may not be clear). Since my research requires me to answer “how” and “why” questions and the emerging context (i.e., REDD+) is relevant to the phenomenon under study, the case study method was suitable to apply. Importantly, the cases of this study are concrete cases by nature, and require *in-depth* understanding and *detailed examination* in order to analyze the interactions of community forestry institutions with emerging forestry governance and traditional institutions. ‘Case study method’ is endowed with these abilities (Stake, 1994; Flyvbjerg, 2006; Yin, 2014).

Stake (1994: 237) heuristically identifies three types of case study: intrinsic, instrumental and collective. The first is undertaken because of intrinsic interest in, for instance, this particular child, curriculum or CFUG of a village. It does not primarily intend to represent other cases and does not illustrate a particular trait. This kind of study is conducted because the case itself is of interest. The purpose of this type of case is not theory-building but to enhance one's understanding of a particular phenomenon.

The second, incorporating existing contexts, scrutinizes a case in-depth in order to provide insight into an issue or to refine existing theory. This type of case study facilitates the broadening of our understanding because it helps us to pursue the external interest. It may be seen as typical of other cases. Stake (Ibid) clarifies that there is no clear line to differentiate intrinsic case studies from instrumental.

The third – the collective case study - is an extension of several instrumental case studies. The cases are jointly studied in order to examine a given phenomenon, of which it is believed that the collective cases will lead to a better understanding. The study of collective cases could be instrumental to better theorizing the results. The cases of this study are instrumental (Paper I & III), and they are also collectively analyzed (Paper IV).

3.5.2 Sampling

In order to produce data on the selected cases, I have applied quantitative and qualitative data collection techniques (see below). Purposive sampling method (Gobo, 2007; Tongco, 2007; McGuirk & O'Neill, 2010) has been applied to select informants. The aim of purposive sampling, according to Patton (2002: 46), is to select information-rich informants who can illuminate the questions under study and put emphasis on in-depth understanding.

As stated earlier, the cases were purposively selected based on their historical and political significance. The purposive sampling method for household survey was however not initially intended, although it did become the most reliable way to carry out the fieldworks. Originally, in 2013, a systematic random sampling method was adopted, with a five household gap between two surveyed households. It became immediately apparent however that the technique was ineffective due to widespread adult migration from the study villages and the existence of dispersed settlements.

As presented in Paper IV, the migration of adult people was widespread in the study villages. Consequently, I had problems finding adult informants in the sampled households. Initially in such instances I skipped such sampled households and moved to the next one for the sake of randomization. Still, it was uncertain I would find an adult. There were also several instances when I encountered abandoned houses or houses without a household head. I had to keep skipping these houses as well. As most of the surveyed households lacked enough labor to maintain their agroforestry practices, some respondents were reluctant to give enough time to talk. It was not because s/he did not want to talk with me but s/he was needed in the household chores. These situations compelled me to familiarize myself with local contexts and talk with those people who

were present, who were well informed, and who could spend some time with me. After all, the intention of conducting fieldwork is to collect required data in trustworthy ways. Demeritt (2001: 309) reminds us:

All science, even the very “hardest” varieties, involves contingent social relations. How to conduct this experiment or measurement? Whether to trust that datum or result? Whose interpretation to believe?

There was a special moment when I stopped doing random sampling for household survey and started to select informants purposively. To conduct a survey, I needed either a household head or an adult member of that household who had sufficient knowledge about local forest management practices. One day in a settlement called Rol of Lakuridada (Dolakha District) in 2013, the house that was selected randomly for survey was headed by a 16 year old girl who was taking care of her two siblings, a sister of 14 and a brother of 11. Both her parents had migrated to Malaysia for earnings during the fieldwork period. I did talk with her. She knew almost nothing about forest management and she was very timid to answer the questions. Except for the demographic composition of her household, most of the questions were left unanswered. This event raised two questions in my mind. (1) Should I survey an *informant* or a house for the sake of randomization? (2) Should I look for *information-rich cases* or just increase the number of houses for the sake of large sample size? The answers were clear to me: I deployed purposive sampling and searched for information-rich informants.

The settlement patterns of the study areas, especially of Dolakha, are dispersed and scattered. It was impossible to find the needed households with adults within a settlement so I had to keep travelling from one settlement to another. I started to collect names of some key persons of the next settlement from the informants being surveyed. After all, the intention was to find informed informants, which was more likely if I did select them purposively. I therefore surveyed not only in a house where a family with at least an adult member lives but also in agricultural fields where people work, and in taverns and shops where people gather, take rest, and socialize. Concerning the purposive sampling method, Patton (2002: 40) says;

‘Cases for study (e.g., people, organizations, communities, cultures, events, critical incidences) are selected because they are “information rich” and illuminative, that is, they offer useful manifestations of the phenomenon of interest; sampling, then, is aimed at insight about the phenomenon, not empirical generalization from a sample to a population.’

It was crucial to find informed informants because data represent the preconstituted theories and concepts of respondents (Burawoy, 1991b) which could have a lasting impact on my study. The purposive sampling method, which has at least been used since 1940 (Patton, 2002: 46), is a well-established method of data collection and analysis (Patton, 2002: 243; Gobo, 2007; McGuirk & O'Neill, 2010; Stratford & Bradshaw, 2016). It allows a researcher to use a variety of data collection techniques (qualitative and quantitative) and data sources (oral and archive) (Flyvbjerg, 2006; Baxter & Jack, 2008; Yin, 2014), and has also been used by both social and natural scientists (Tongco, 2007). Actually, according to Bryman (2012: 418) – ‘[m]ost sampling in qualitative research entails purposive sampling of some kind.’ Data collected from purposive sampling can be used for both qualitatively and quantitatively (Tongco, 2007).

Based on the above epistemological rigor of the case study method, I have collected data from household surveys, semi-structured interviews and group conversations. Data were also collected from observation and secondary sources.

3.5.3 Unit of study, Sample size and Data collection

The unit of this study has to be understood in a hierarchical sense. In general, a forest management institution is a unit of study. However, on the one hand, as a forestry institution is constituted by its members or forest users, their households and local traditions, it should be understood from the perspective of users. So data were collected on the individual and household level representing their forest management institutions. On the other hand, as a forestry institution is also governed by acts and regulations I have reviewed such documents to analyze how they shape forestry institutions and users’ attitude towards it. So, this study takes a forestry institution incorporating users’ attitudes as units of study to analyze the interaction of community forestry with REDD+ pilot project and traditional institutions.

In order to have diverse perspectives from purposively sampled informants, I surveyed more than 60 households during each fieldwork (table 2), which is described as *large sample* size for statistical analysis (Wheeler et al., 2010: 116 [emphasis in original]). However, empirical generalization is not the intention of this study. The collective case study does not aim for generalization (see Patton, 2002: 40), rather it seeks to identify diverse realities and conclude theoretically.

Table 2: Data acquisition

Data Collection Techniques		Study districts and years				Total	Data Recording
		2013	2014	2015			
		Dolakha	Mustang	Dolakha	Mustang		
Household Survey		121	62	65	65	313	Questionnaire
Semi-structured interviews	Key Informant Interview	3*	1* + 1	3	5	11 + 2**	Record. device and diary
	Informal Interview	13*	10	0	0	23	Record. device and diary
	Expert interview***	2* + 1				3	Record. device and diary
Group conversations	No. Participants	0	1	1	1*	3	Record. device partially used, and diary
		0	13	4	8	25	
* Used a recording device with prior consent; **1 CFUG secretary and 1 CAMC head were interviewed for a second time in 2015; *** 3 experts were interviewed in Kathmandu							

The diverse methods that were applied to collect data complemented each other during fieldworks and analysis.

Interviewing informants through household surveys, key informant interviews, group discussions and informal chats was the main tool that I applied to gather the required information. An interview is a face-to-face communication that occurs between an interviewer and a respondent, where the respondent delivers messages to questions posed by the interviewer (Briggs, 1986). An interview has three forms; structured, semi-structured, and unstructured (Dunn, 2010; Silverman, 2011). The first is conducted with

a predetermined and standardized list of questions. The second is guided by a predetermined checklist of questions or topics to be discussed, however there remains flexibility with regards to raising issues depending on how the informants respond to the questions (Longhurst, 2010). The third form of interview denotes an open conversation with interviewees. It is not guided by the predetermined questions. I applied the first and second forms of interview to accumulate the information.

The **household survey** method was one of the primary techniques of data collection. The technique, which explores people’s perceptions and experiences by administering standardized questions to some or all of its members (Preston, 2009; McLafferty, 2010), was applied to carry out four such surveys during 2013-2015 (table 3).

Table 3: Household questionnaire survey

District	VDC	National census, 2011				Surveyed household		
		Population		Household		from study villages		
		Study villages	VDC	Study villages	VDC	2013	2014	2015
Dolakha	Lakuridada	3713	3713	924	924	93		65
	Magapauwa	1030	2950	284	780	28		
Mustang	Jomsom	390	1370	115	430		62	65
	Marpha	876	1551	235	414			
Total						121	62	130
		6009	9584	1558	2548	313		
Mean age of the respondents						45	50	47

I needed to conduct household surveys for three reasons. First, it helped me to compile, organize and identify individual household cases in a standardized way, which have provided a richness of information when analyzing the cases. Second, conducting household surveys were also instrumental in raising micro-level issues while interviewing informants. For instance, household variations in access to forests, effects of REDD+ pilot project on households, and the role of caste-ethnicity in management would have been less visible if I had not conducted household surveys. For example, the

tradition of not selecting a non-Thakali as a village headman was initially known from a Dalit household. Finally, although decreasing use of forests due to migration was known to me anecdotally, household surveys helped me to document it thoroughly.

The survey questions, which were designed in Nepali language and pre-tested before conducting the actual surveys, were mainly formulated to produce data on ordinal and ratio scales. The surveys also included open questions where the respondents could freely express their ideas, experiences and beliefs, such as ‘*do you like the current forest management model? Why?*’ and ‘*which system is better for collecting forest products: CAMC or Mukhiya? Why?*’. These open questions helped me to acquire standardized information about the interactions between users and their forestry insitutions. The ratio data, such as frequency of use of the community-managed forests and adult migration, allowed me to infer the decreasing use of forest due to increased adult migration in Paper IV. The ordinal variables in questions provided more insight into the local forest use patterns (Paper I & III), such as ‘*which forest types do you use mostly (ranking: most used to least used)?*’ and ‘*what are the causes of forest growth (ranking: most important to least important)?*’.

Photo 2: Photo 2: Household questionnaire survey



Four female and three male local assistants supported me in carrying out the household survey. The selection of female assistants was intentional. The involvement of rural women in the day-to-day extraction of forest resources is quintessential in Nepal (Lama

& Buchy, 2002; Nightingale, 2006; Giri & Darnhofer, 2010; Nightingale, 2011). It is possible that I or the male assistants would have had less access or collect less information than female assistants were able to do. In some instances, adult males of some households had migrated and we had to survey female household-heads. The female respondents were fully aware of local forest management. Of the surveyed household respondents, 64.5% were female and 35.5% were male in 2013, 34% were female and 66% were male in 2014, and 46% were female and 54% were male in 2015 (see appendix 4 & 5).

In a social research, respondents differ in terms of both their ability and willingness to provide detailed information, and so some informants become particularly important to a research who have more knowledge and have the capability to explain it verbally (Briggs, 1986: 8; Bryman, 2012: 439). These selected **key informants** (table 4) had these abilities.

Table 4: Semi-structured interview

Semi-Structured Interview	Affiliation	District		Total No.
		Dolakha	Mustang	
Key informant interview	CFUG member	4		4
	CAMC member		2	2
	Village headman		3	3
	School teacher	1		1
	Local hotelier		1	1
Total		5	6	11
Informal interview	CFUG member	3		3
	Village headman		1	1
	School teacher	1	1	2
	FECOFUN member	3*		3
	District Forest Officer	1		1
	Ranger	1		1
	ACAP head		1	1
Villagers (excluded from the household survey)	4	7	11	
Total		13	10	23
*The national head of FECOFUN (# 1) was interviewed in Kathmandu				

The **group conversation** method, differing from the conventional focus group discussion, was carried out spontaneously. A group conversation for my purpose means an accidental or unplanned conversation with more than one villager either in a local tea shop, in an informant's house or at a cultural gathering. During the fieldwork, I participated in three such group discussions.

This method helped not only to complement the data collection process, but also to triangulate the data that were being collected otherwise. It was also a useful means to strengthen my own position during fieldwork. For instance, in Mustang in 2014, one informant whom I knew from my MPhil fieldwork in 2007 took me to a local festival where many adult villagers were chatting in a natural setting. After having introduced myself, I sat nearby them for some time. Once I felt that the villagers had sufficiently relaxed after my introduction, I started to talk with them (photo 3). This group discussion helped me to resume my previous positionality as a student who revisited the village.

Photo 3: Group conversation in Mustang, 2014



I also selected 3 Nepali **experts** who have been working in forestry research for several years. All of them have published several articles and have been actively engaged in policy research. I have understood an expert to be a person who has *institutionalized authority to construct reality* and can be *influential in structuring the condition of action*

for other actors (Meusar & Nagel, 2009: 19 [emphasis in original]). The selected experts were very helpful as a means of understanding the on-going situation with REDD+ activities at both the national and subnational level, and also regarding the changing forestry legislation of the nation. In addition, talking with such experts broadened my own knowledge about the national forestry situation and its management.

The semi-structured interviews were particularly useful as a means of generating data regarding the traditional forest management system, villagers' perceptions of the REDD+ pilot project in Dolakha, the involvement of the CAMC in Mustang and the problems of increasing adult migration and decreasing agricultural practices in the villages. The interviews also explored different perspectives, such as the government's and FECOFUN's perspective on REDD+ piloting, and the ACAP perspective on local forest management. Eleven villagers who were interviewed during the early stages of the fieldwork not only supplied information, but also helped to access other villagers and key informants.

Observation is the outcome of an active choice by a researcher rather than mere exposure in the field, which requires an active role to determine *what* to see and *how* to see a phenomenon under study (Kearns, 2010: 242 [emphasis in original]). For instance, my understanding was widened by observing while walking inside a community-managed forest with a CFUG head and participating in forest- and REDD+-related seminars and meetings. These activities helped to associate my study with ongoing local and national processes. For instance, I got the chance to participate in a seminar in Kathmandu in 2013 where the participants were researchers, NGO members and foresters. The seminar was designed to collect feedback on the upcoming Forestry Sector Strategy (see Paper I). Several discourses concerning future forest policy, REDD+, and climate change were debated by the participants (photo 4). Actually, the idea of writing about discourse analysis and REDD+ in Paper II emerged after participating in this seminar. Additionally, participation in such an event was very important to a researcher like myself because it allowed me to gain knowledge and experience of current affairs relating to the forest management of Nepal, and how experienced people foresaw the future of the national forestry institutions.

Photo 4: Concerns about future forest management of Nepal



In photo 4: participants of the seminar shared their views on what should be included in the upcoming Forestry Sector Strategy. Their suggestions mostly concentrated on the inclusion of issues related to REDD+, climate change, biodiversity, scientific forest management, poverty reduction, NTFP and its management, good governance, eco-tourism etc.

Likewise, while walking in the forest, I not only saw several places where trees had been cut down but also got the opportunity to talk at length with the CFUG head. The head was uncertain regarding the cutting of trees. The villagers were also aware of such instances taking place inside community-managed forests and had mentioned the illegal harvesting of timber during interviews. This observation led me to acknowledge that the forest is not completely secure even within the CF framework.

Finally, information collected from **secondary sources** such as government documents and other published material plays a very important role in my study. Forestry legislation such as the Forest Regulation of 1995 and the Conservation Area Management Regulation of 1996 were reviewed while analyzing Paper III & IV. Reviewing the R-PP²⁷ helped me to understand the government’s motives and plans concerning REDD+ (Paper I). The information regarding the forest management history of Dolakha and

²⁷ Readiness Preparation Proposal (R-PP) is “a framework document which sets out a clear plan, budget and schedule for a country to achieve REDD+ Readiness. This document is shared to all stakeholders within the country and submitted to the Forest Carbon Partnership Facility Readiness Fund where it is independently reviewed and assessed before the grant is allocated” (cited from <http://theredddesk.org>; accessed 22 July 2016).

Mustang enabled me to analyze why the traditional institutions were still active in Mustang and why there were no such institutions in Dolakha in Paper IV. Additionally, the information of Nepali history of forest management has been entirely collected from secondary sources.

3.6 Data organization and analysis

The data embodies facts and values which are represented quantitatively and qualitatively. Analyzing data from both sources entails several strengths, for instance the triangulation of findings, and also offsets weakness (Greene et al., 1989; Teddlie & Tashakkori, 2003; Bryman, 2006). The application of multiple methods and data complemented each other throughout the analyses.

Coding method was adopted to organize, analyze and present the studied cases. Both qualitative and quantitative data are presented through this method. Coding is a process of *categorizing the data* that have some internal cohesion (Patton, 2002: 465; Cope, 2016). Emphasizing the importance of coding in data analysis, Patton (2002: 463) adds;

Raw field notes and verbatim transcripts constitute the undigested complexity of reality. ... Developing some manageable classification or coding scheme is the first step of analysis. Without classification there is chaos and confusion.

Coding creates the basis of analysis by distilling two types of categories: descriptive and analytic. Descriptive code reflects themes or patterns of data that are apparent on the surface and salient in vernacular categories as stated directly by informants (Aase, 2007; Cope, 2016). It was found instrumental when reviewing forestry legislation, analyzing informants' direct statements, and describing the social structure of Mustang. The topic of Paper I actually emerged from a direct statement of an informant, that is, *REDD+ comes with money, not with development* (Paper I: 558).

The analytic code, on the other hand, is the researcher's categories that emerge after careful scrutiny of data and their contexts (Cope, 2016). For instance, two major codes

of Paper III and three hypotheses of Paper IV are examples of analytic coding.²⁸ Through these codings I have presented findings of the situations of different actors, contested access to resources, and varied social structures.

Aase (2007) suggests four methodological steps to interpret informants' categories. First, a researcher has to map out the categories of the subject under study. For instance, the realization of two categories of forest management institutions in Mustang (i.e., traditional and formal) helped me to explore the diverse management responsibilities of the institutions (Paper III & IV). CAMCs have been trying to manage local forests, but due to the existence of traditional institutions (i.e., the village councils or *gaun samiti* in Nepali) in each village, they could not succeed as they had expected. Without knowing these management categories, any conclusion could be coincidental in the case of Mustang.

The second step is to explore how the categories are constituted, or what meaning they possess. As explained in Paper III, the CAMCs have categorized local forests as 'common' or 'sharable resources' among the villages that belong to a certain administrative unit (i.e., VDC). But each village of Mustang has a traditional institution to regulate the forest, which does not allow the forest to be used by other villages of the same VDC. They have territorialized the forest as 'village forest'. Without interpreting the constituted meanings and associated practices like in Mustang, the future change in local forest management is unlikely to achieve success.

The third step involves clarifying the way in which informants relate the categories to each other, or in other words to their context. For instance, although the REDD+ pilot project had been implemented for three years in Dolakha (Paper I), it was found that the local forestry institutions (i.e., the CFUGs) and the local forest users (i.e., the community) perceived of its implementation in different ways. The CFUGs saw the pilot project as a 'new framework' to manage local forests and a 'new way' to earn money by implementing it in the forests, whereas the users considered it as a development project lasting only a certain amount of time. As REDD+ was an alien idea in local forest

²⁸ Paper III & IV present that how I have used coding as an analytical tool.

management, the users could not subjectively accept it as CFUGs. Understanding these diverse interpretations of the pilot project helped me to analyze the Dolakha case.

Finally, Aase suggests identifying informants' localization of observations in the respective categories. For instance, as stated earlier, CAMCs in Mustang could not achieve the expected levels of success. Previous studies also show that CAMCs' activities were not properly accepted by the northern ACAP dwellers (Spiteri & Nepal, 2008; Khadka & Nepal, 2010). Perhaps the reasons behind this can be found in the perceived 'ownership' or 'actual manager' of local forests. Being the traditional managers, the village councils and their headmen consider managing the forests to be part of their customary duties. On the other hand, CAMCs, guided by the modern perspective of forest management have tried to manage the forests by merging the traditionally managed 'village forests' into a single administrative boundary, that is, the VDC. The conversion of forest boundary - from traditional to administrative - could dismantle the traditional power of village councils and village headmen. The village councils probably fear losing their traditional power over local forests, and so they want to keep holding management rights over the forests (Paper IV). Understanding the informants' localization of observations helped me to understand the causes and effects of the dual ownership and management, which have been discussed in Paper III.

Informants' categories and different themes were coded by following two processes: *convergence* and *divergence* (Patton, 2002: 465 [emphasis in original]). Convergence entails figuring out what things fit together and looking for *recurring regularities* in data (Ibid [emphasis in original]). Whereas divergence helps to find out codes by bridging different themes and verifying their existence.

The data that were generated by the four household surveys were also analyzed through a ranking method (Wheeler et al., 2010: 43) that ranks the answers from the most important to the least important. A rank is a numerical expression of importance and is assigned by the respondent based on perceived degree of importance of each of the options provided in the survey questions. The options to be ranked were finalized after consulting villagers and key informants during the piloting of questions. Simple

statistical inferences, such as mean, percentages and frequencies were used in the analyses.

Field notes and audio recordings were reviewed several times to understand and analyze respondents' views and interpretations. The data extracts (informant quotations) presented in the Papers were selected as *representative* of the total data (Silverman, 2011: 356). Selecting representative statements while designing table 4 of Paper IV was time consuming, however it helped me to explore the local position of CAMCs, CFUGs and the village councils. Some of the qualitative data that were collected by the household surveys were also analyzed by selecting key themes, which were selected as per their frequency of occurrence. Table 2 of Paper I was the product of this type of analysis.

3.7 Reliability and validity

Reliability refers to whether or not the results that we have drawn from the study are replicable, whereas validity refers to whether the collected data are appropriate to draw the conclusion or not (Briggs, 1986: 23; Golafshani, 2003; Silverman, 2011: 356). It has, however, been argued that reality is contingent to time and space (Burawoy, 1991b; Braun & Wainwright, 2005; Castree, 2005; Mansvelt & Berg, 2016; Young, n.d.). Reaching a valid and real knowledge of a topic is an iterating process because observations are *always* theoretical (Mansvelt & Berg, 2016: 403 [emphasis in original]). Reliability and validity of a study are themselves therefore contingent of time-space and they are context-dependent.

The tradition of measuring reliability and validity comes from natural sciences (Mansvelt & Berg, 2016). In social sciences, how accurately we have represented the respondents' perception of phenomena corresponds to the validity of a research (Creswell & Miller, 2000). As social phenomena and relations are dynamic, a nuanced interpretation of data is motley and manifold (Healy, 2017).

Triangulation, according to Golafshani (2003), improves reliability and validity of a research. Denzin (cited in Patton, 2002: 247) has identified four types of triangulations: data triangulation (the use of variety of data sources), methodological triangulation (the

use of multiple methods), theory triangulation (the use of multiple perspectives), and investigator triangulation (the use of several researchers or evaluators). In this line, I present a brief note on reliability and validity of this study in the following section.

This study has collected data from a variety of sources by applying multiple methods which not only enabled me to accumulate appropriate and required data but also to complement each other during fieldwork and analysis. For instance, although decreasing use of forests due to migration was recurrently stated by informants, collection of quantitative data from household surveys enabled me to document and analyze the contention systematically. The use of information from secondary sources enabled me to discern the historically rooted community-forest links in the study districts (Paper IV). Applying multiple methods, as Golafshani (2003) states, leads to a more valid and reliable construction of realities. Additionally, the description of the fieldwork process and reflexivity not only establishes *transparency* of this study but also takes the interpretative community to the center of the experience and study contexts. This also establishes the trustworthiness of data collection and assures the validity of this study (see Creswell & Miller, 2000; Silverman, 2011: 369).

The adoption of a mixed qualitative and quantitative research design allows for triangulation in order to increase reliability of my research. The use of multiple concepts and theories to interpret data in the Papers strengthens the validity of analyses. The political ecological thinking enabled me to make sense of historically rooted forest policy outcomes of the country. Additionally, the attached Papers are evaluated by internal and external reviewers (e.g., the journal's peer-reviewers), which have also increased the reliability and validity of this study (see Creswell & Miller, 2000).

4. Discussion and Conclusion

4.1 Introduction

The implementation of REDD+ as a framework of forestry governance is crucial in terms of addressing community rights and access to carbon benefits (Larson, 2011; Leach & Scoones, 2013; McDermott et al., 2013; Ojha et al., 2013; Vatn & Vedeld, 2013; Paudel et al., 2015). In order to realize REDD+, two issues are therefore pivotal: *conservation* to curb climate change, and *development* to maintain local livelihoods. Although community forestry (CF), motivated by conservation and development, is now well established in Nepal, the emergence of REDD+ brings a new dimension to it.

The historical development of forest policies in Nepal (see subsection 1.2) has firmly established two features, primarily in the Hill region. Firstly, the policies have succeeded in promoting and establishing locally initiated community-based forest management institutions (i.e., CF). Secondly, these community institutions have succeeded in both preserving and considerably enhancing forest coverage (see Niraula et al., 2013; subsection 1.3). Since these communities have proven to be successful at recovering and maintaining forests that had previously been degraded mainly as a result of the government land reclamation policies prior to 1957, these two features provided a secure platform to pilot REDD+ through local forest management institutions in 2010.

The previous changes to CF policies and institutions of Nepal were initiated from either a national or local level. The emergence of REDD+, which would be another *major policy tool* in Nepal's forest management history, originates from a global level. Finding synergies between local interests and national or global interests is the major concern of REDD+'s "road map". In aiming to examine CF's interactions with both emerging forestry governance and traditional institutions, which is the main research question of this study as stated in first chapter, this chapter firstly discusses the study's findings relating to these interactions and their relations with REDD+. Secondly, it discusses the findings in relation to Common-Pool Resource (CPR) theory. Lastly, the chapter concludes with the main findings.

4.2 Interaction of community forestry with REDD+

REDD+ has heuristically been presented as an option to counteract the increasing levels of global warming and to contribute to conservation and development goals (Angelsen & MacNeill, 2012; Luttrell et al., 2013). However, in the case of the Community Forestry User Groups (CFUGs) of Dolakha (Paper I), two principal risks are apparent. Firstly, as the implementation of the pilot project was designed to conserve the forest and to sequester more carbon, some restrictions have been imposed on users, such as limiting the collection of forest products and banning livestock grazing. This has a particular impact on the poorest households for whom the forests account for four times more income than for better-off households (Shrestha et al., 2017). These restrictions have also created doubts about local users' access to forests in the future after the full implementation of REDD+ or similar frameworks of forestry governance. This finding is in line with current studies (Neupane & Shrestha, 2012; Visseren-Hamakers, Gupta, et al., 2012; Maraseni et al., 2014; Poudel et al., 2014). Secondly, the income that the CFUGs received was not satisfactorily distributed among the different caste-ethnic communities because the amount of funds that were received was too small to reach everyone. A small portion of the fund was distributed to a few poor households of the villages, which served to create antagonistic sentiments among others, and therefore lacks *social legitimacy* (see Corbera & Schroeder, 2017). One of the main reasons for this is that non-*dalit* households tend to be less prioritized for support from the REDD+ pilot project than *dalit* and *janajati* (ethnic communities) households. These findings are also in line with contemporary literature (Ojha et al., 2013; Patel et al., 2013; Poudel et al., 2014; Saito-Jensen et al., 2014; Shrestha et al., 2017).

The above findings clearly indicate that it is difficult to achieve the *equity* outcome from the implementation of REDD+. The piloting of REDD+ in Dolakha was therefore not particularly satisfactory from the users' perspective. However, the CFUGs' leaders were excited to see its future prospects and were happy to have some financial income from the project. For local communities, involvement in the CFUGs was a regular practice, whereas REDD+ was perceived as a development project which was *yet to be internalized*. It was detached from users' traditional knowledge. The pilot project was

an *opportunity* for some actors, especially for the CFUGs' executive members and some elites (see Ojha et al., 2013; Saito-Jensen et al., 2014). Studies suggest that by undermining local communities' livelihoods, REDD+ cannot achieve its set goals (Agrawal et al., 2011; Karky & Rasul, 2011; Pistorius, 2012; Visseren-Hamakers, Gupta, et al., 2012; Visseren-Hamakers, McDermott, et al., 2012).

In addition, the CFUGs do not own the rights to the land where the forests stand (MoFSC, 2013), which will pose significant challenges both to successfully distribute the REDD+ benefits and to determine the owners of below and above ground carbon sequestration. This finding is in line with Paudel et al. (2015) and Murdiyarsa et al. (2012), who also foresee land tenure rights as a major challenge to reforming forest governance under REDD+. Ojha et al. (2013) also find that forest tenure and benefit sharing in the REDD+ process are both contentious issues in Nepal.

REDD+ renders CFUGs governable by subjecting them as vehicles to increase carbon sequestration through the restriction of users' access to forests. Traditional practices became silent as a result of the piloting of REDD+, not only because REDD+ was an alien concept to the users, but also because they lacked the required technical knowledge and understanding, and therefore had to rely on the input of outsiders. Users understood the project as simply *a money distributing program*, and saw themselves as the passive recipients of technical jargon concerning the implementation. The implementation of REDD+ can thus be perceived by some locals as tyrannical (see also Staddon et al., 2015).²⁹ In the same vein, the pilot project was not able to support traditional practices of local livelihoods as expected, such as the utilization of REDD+ money for the betterment of villagers. Although REDD+ money could be instrumental in advancing local *development*, its distribution could not satisfy *all* of the poor. Despite REDD+'s potential to prevent deforestation and reduce climate change, previous studies have also criticized it for creating conflict on a local level (Larson, 2011; Patel et al., 2013). It potentially poses the threat of re-centralization of forest management (Phelps et al., 2010; Vijge et al., 2016), and can also be seen as a medium for decreasing socio-

²⁹ Tyrannical refers to the 'unjust exercise of power' (Cooke & Kothari, 2004: 4).

economic resilience by converting natural resources into a commodity (Corbera, 2012; Fairhead et al., 2012; Osborne, 2015).

Subjecting the users as *poor people of developing countries* by piloting of REDD+ in a CF is an example of a *discursive practice*. Since the forest is an inextricable component of local livelihood earnings, the discursive practice has affected the traditional practices of forest use. As discussed in Paper II, the REDD+ discourse becomes apparent through the so-called new approach to forest management. The *elements* and/or *floating signifiers* such as the role of CF, the access rights of users, biodiversity conservation and carbon sequestration all fall under the *field of discursivity* of REDD+. Consequently, REDD+ has achieved a paramount position (a ‘nodal point’) in climate change discourse, which is an *articulatory practice* (Laclau & Mouffe, 2001; Stephan et al., 2014), devised to achieve the ‘triple-wins’ – carbon reduction, biodiversity conservation and poverty control (Angelsen & MacNeill, 2012; Luttrell et al., 2013). The articulatory practice puts in regimes of practice³⁰ through piloting, as in the case of Dolakha. From this case, it can be inferred that the REDD+ pilot project has more or less succeeded in achieving its conservation goals at the expense of development potential.

Besides the above flaws, the REDD+ pilot project has increased the number of trees being planted, and raised awareness about forest conservation. However, REDD+ must also harmonize the new value of carbon sequestration with the more traditional values of CF, that is, local livelihoods and ecology. Some families have received economic support for livelihood earning activities, however the support was insufficient to invest in livelihood enhancement activities. Instead of rigidly stating whether or not REDD+ is suitable in the context of Nepal, I would rather say that if the flaws discussed above are addressed, then it could well be an effective framework for managing the forests.

³⁰ A regime of practices refers to a set of activities and techniques that addresses a particular issue without necessarily consisting of a coherent policy program or following an overall logic (Stephan et al., 2014: 60).

4.3 Interaction between community forestry and traditional institution

The relationship between forest users, their institutions and emerging forestry governance such as REDD+ can perhaps be best presented by discussing how accessible the forests are for differently positioned users. The *rights to the forest*, the *rules for forest use* (Larson, 2011) and *access* to resources (Ribot & Peluso, 2003), all of which enhance an actor's agency to *control* the benefits, are the tools to analyze local political ecology of interactions. In order to discern this, in Paper III I have presented the disjunctions and conjunctions between traditional and modern forestry institutions.

In Mustang, the traditional institutions hold customary rights over the forests. These institutions exist in each village and regulate the forests alongside the formally designed CF institutions (i.e., the CAMCs). These two institutions constitute *different actors* in regulating the forests, such as the traditionally authorized members of the village council, the village headman, the CAMC, the Annapurna Conservation Area Project (ACAP) and its associated actors. The traditional institutions in particular, which have *regularized patterns of behavior* (see also Berger & Luckmann, 1966; Leach et al., 1999) and have been regulating the local forests for long time, still primarily hold the *exclusion* and *withdrawal* rights (Paper III). Although they share the *management* rights with the CAMCs to some extent, these traditional institutions will undoubtedly claim the rights over future forest benefits. Although villagers appreciate development initiatives undertaken by the CAMCs, some clear-cut disjunctions between the institutions have been identified, such as dual management and different boundaries of the same forests. These are basic and genuine issues that need to be addressed in future forest management policies. As REDD+ is considered to be a national-level program, these contentious issues and actors will challenge the distinction between the *bundle of rights* (Agrawal & Ostrom, 2001) and the distribution of benefits equitably. This finding is in line with McDermott et al. (2013), who say that pre-existing conditions that either limit or facilitate people's access to a decision-making procedure is pivotal for the distribution of benefits. Before implementing any new framework of forestry governance, the existing disjunctions must therefore be corrected.

Besides the institutional plurality, the variation in different users' access to local forests and management is another feature of local traditional institutions of Mustang. In-migrants, such as those who have settled in the villages by renting or sharecropping migrants' land and the employees of government and non-government organizations, must take on social responsibilities before accessing local forests. In spite of this, in-migrants, including the local *dalits*, are not allowed to lead the traditional institutions. The traditional institutions, which also circumscribe the formal rules of local forest management, are headed by the Thakali ethnic community. These differences raise two issues in the context of the implementation of REDD+. First, how to incorporate traditional practices of forest use into the new governance system; and second, how to maintain and provide justice to in-migrants and *dalits* who are socially subordinated. Without solving these issues, emerging forestry governance like REDD+ will not only be contentious at a local level, but will also mainly benefit the local elites.

The above discussions raise three different *types of access and role* that are apparent in local forest management. Firstly, the influential role of traditional institutions and their customarily determined access to local forest resources and management in general. Secondly, the *privileged* role of the Thakali community. Finally, the restricted role and access to local forest resources of in-migrants and reduced role in forest management institutions of the *dalits*. However, the access and rights to forests are equal as encoded in the Conservation Area Management Regulation of 1996 (MoFSC, 2016). In the context of the persistence of traditional institutions, therefore, providing rights to forest users through regulation like the Conservation Area Management Regulation of 1996³¹ do not necessarily determine and secure users' access to forest. Previous studies also show that social difference to access and manage forests hold potentiality to affect local livelihoods when devising REDD+ as a framework of forestry governance (Larson, 2011; Saito-Jensen et al., 2014).

The above variations in access rights to the forests differs from Ribot and Peluso's theory of access: the *ability* to derive benefits from resources (Ribot & Peluso, 2003;

³¹ This regulation is less flexible than the regulation adopted by the forest users of Dolakha (Paper IV).

see footnote 1). In Mustang, where two institutions simultaneously regulate the same forests, users' abilities are controlled mainly by the traditional institutions, thereby limiting the effect of formal rules. The ability of local users to access the forests is less visible in terms of the extent to which they have access to various means that facilitate access, such as technology, capital, labor, knowledge and authority (cf. Ribot & Peluso, 2003). Rather, traditionally determined social identities mold users' ability to derive benefits from forest resources.

The importance of traditional institutions and local practices to the successful implementation of REDD+ has been firmly recognized (Chhatre et al., 2012; Howell, 2014; Wallbott, 2014). Studies show that without addressing traditional practices and their institutions, REDD+ cannot achieve success (Barr & Sayer, 2012; Visseren-Hamakers, McDermott, et al., 2012; McDermott et al., 2013; Saunders, 2013; Vatn & Vedeld, 2013). As designing an institution centred on the fair distribution of forest benefits is a major concern in the REDD+ debate (Chhatre & Agrawal, 2009; Corbera & Schroeder, 2011; Kanowski et al., 2011; Thompson et al., 2011; Visseren-Hamakers, Gupta, et al., 2012), the solution of the existing disjunctions could help to minimize any problems. In order to achieve *effectiveness, efficiency, and equity outcomes* from the REDD+ implementation (Angelsen & Wertz-Kanounnikoff, 2008; see Paper I), communities' equal participation, access to forest, access to management and access to benefits are all essential.

Although the strong persistence of traditional institutions like in Mustang is a feature of only some locations in Trans-Himalayan Nepal, the issues that have been discussed in Paper III can nevertheless help to make policy makers more aware of the potential challenges that they face.

4.4 Factors affecting local acceptance of emerging forestry governance

The communities of Dolakha and Mustang have had different reactions to the formally designed CF models, that is, CFUGs in Dolakha and CAMCs in Mustang (Paper IV). In Dolakha, although there were both negative as well as positive effects of the REDD+

pilot project on local communities, the pilot project itself and the local CF were not resisted by the communities. Additionally, the local forest management was not dominated by any single case/ethnic community. In Mustang, however, this was not the case, and the local CF was also not fully accepted by the communities. These local variations in acceptance of CF models show that when forests are regulated by a society constituted by a dominant caste or ethnic group and traditional institution, there is a chance not only of contestation in terms of resource appropriation and accumulation, but also of local variations in the acceptance of or resistance to a formally implemented CF model. Moreover, these variations in local acceptance were particularly apparent in areas witnessing high levels of migration among local CF users (see table 2 and 3 of Paper IV), and where there was a concomitant lack of leadership available to run the CF institutions (Paper I). The lack of users' participation and active leadership can be a hindrance for successful implementation of emerging forestry governance such as REDD+.

Two factors can nonetheless encourage acceptance of emerging forestry governance. First, the extent to which the rights and access to local forests are encoded in formal rules and practiced by users equitably. Second, the extent of the influence of traditional institutions over local forest management and formal forestry institutions. For instance, CFUGs have much more autonomy than CAMCs to manage local forests and can associate with any civic organization that they wish (Paper IV). This finding is also in line with previous studies (Agrawal & Ostrom, 2001; Pokharel et al., 2008; Ojha, 2014). The CAMCs, on the other hand, provide their users with much less flexibility (Paper IV). This finding is contrary to those of Baral & Stern (2011), who claim that CAMCs are free from control of the District Forest Office and have more secure access to funds as they are supported by the Annapurna Conservation Area Project. I argue that the institutional flexibility provided by both the rules and the possibility of earning income are greater in CFUGs than in CAMCs (see also Ojha, Timsina, Kumar, Belcher, et al., 2008; Pokharel et al., 2008; Thoms, 2008). Studies show that institutional flexibility through the right to use and access forests is crucial when designing national and sub-national REDD+ institutions (Larson, 2011; Vatn & Vedeld, 2013). Additionally, local communities' clearly defined ownership of local forests is one of the most important

variables for the success of a CF (Pagdee et al., 2006). Based on the present institutional design of CFUGs and CAMCs, it can be inferred that any future forestry governance similar to CFUG's framework would have a better chance of being accepted than the present CAMC's institutional framework.

The traditions of the Thakali community have variously affected the local political ecology of Mustang in terms of forest management, business and politics (see Bista, 1971; Manzardo, 1977; Chhetri, 1986). Although migration is high in Mustang (see table 2 of Paper IV), the traditional institutions nevertheless possess a large degree of influence over the formally implemented CF model (Paper III & IV). These traditional institutions, their practices and local dominance seem to be *non-discursive elements* at present, which can be challenging or even can be an *anti-REDD+* discourse when devising REDD+ as a forestry governance (Paper II). The entanglement of traditional institutions in local forest management can therefore be challenging when customizing or implementing a new framework of forestry governance (see also Howell, 2014; Wallbott, 2014).

The above reasons for the local variation in the acceptance of the CF models are arguably in line with Ruiz-Mallén et al. (2015), who explore two main factors that encourage users in local forest management and conservation, that is, institutional 'drivers' and 'motivations'. 'Drivers' include the extent of property rights devolved to communities, management policies, financial mechanisms and new market opportunities such as payment for ecosystem services. 'Motivation' includes the development of a collective sense of autonomy to gain access to natural resources and the encouragement of local people to participate in institutionalized management. The 'drivers' factor relates to the Dolakha case, where CFUGs and users enjoy wider autonomy in the management and use of income, which resulted in the REDD+ pilot project not being resisted. The 'motivations' factor, on the other hand, primarily concerns the Mustang case, where, in addition to the strong persistence of traditional institutions, users have less autonomy compared to the CFUGs, which resulted in the local CF being resisted.

Ruiz-Mallén et al., however, think that migration facilitates *conservation* of local forests because users extract less resources from them. I argue that decreasing use and users of forests reduce the participation and leadership in local forest management, which may limit the extent of effect of ‘motivations’ factor on communities. Previous studies also show that the active involvement of communities is essential for the successful progression of REDD+ (Lederer, 2011; Chhatre et al., 2012; Visseren-Hamakers, McDermott, et al., 2012).

Based on the above discussions, it can be inferred not only that acceptance of emerging systems of forestry governance is affected by the freedom to use and manage local forests and the existence of traditional practices, but also that high levels of migration can increase institutional vulnerability by preventing users’ participation and active leadership. Subsequently, it can affect the local ecology of forests.

4.5 A critical reflection on CPR theory

Theories of commonly held resources focus on the sustainable management of common resources such as forests, water, fishery and pastureland by a community's self-designed institutions (Feeny et al., 1990; Ostrom, 1990; Agrawal, 2001). The study of community forestry is therefore a study of a common resource. This study has criticized Common-Pool Resource (CPR) theory in Paper IV. Here, I shall discuss how CPR can be modified and strengthened. The above discussions have the potential to contribute to the discussion on the management of common resources and can be used for the enhancement of CPR theory in general.

There are two well-known theories regarding the management of common resources: Hardin’s ‘tragedy of the commons’ and Ostrom’s ‘CPR theory’. Hardin (1968) claims that if the commons are open to all, it brings ruin to all, meaning that the openness destroys the resources and thereby causes a ‘tragedy of the commons’. An individual or rational user, according to Hardin (1968), always tries to augment his/her private benefit when using the commons. Being open to all denotes freedom to all, which can lead to the problem of users seeking to free-ride. Hardin (1968) conceptualizes the commons as an ungoverned, open-access resource from which nobody can be excluded. Unregulated use of the commons therefore creates environmental problems which affect all users,

and which therefore lead to a tragedy. To avoid such a tragedy, Hardin suggests the nationalization or privatization of common resources. Hardin did not recognize that commonly used resources could also be managed by the users themselves if they share common interests.

Criticizing Hardin's model of managing the commons, Ostrom (1990) argues that both privatized and nationalized institutions are external mechanisms which can affect the individuals who use the common resources on a regular basis. According to Ostrom (1990: 88-102), the common resources or Common-Pool Resources (CPRs) can be sustainably managed without the interference of the state if they are managed through the users' own self-organized institutions with some sort of rules concerning implementation, management and monitoring of CPRs. The individuals who self-organize mostly earn their economic returns from the CPRs and are thus motivated to solve common problems to enhance their own productivity over time. Ostrom (1990: 25) challenges the presumption that individuals cannot organize themselves and always need to be organized by external authorities. This CPR model of Ostrom has been adopted by many developing nations, and in some cases has also succeeded in preventing the problem of free-riding to some extent (Cox et al., 2010; Saunders, 2014; Chaudhary et al., 2015).

In 1957, prior to Hardin's theory, Nepal's government nationalized the forests with the objective of halting deforestation and environmental degradation. Despite these good intentions, the government was not able to regulate the national forest effectively due to insufficient human and technical resources (Gilmour & Fisher, 1991; Bhattarai et al., 2002). The nationalization also undermined traditional systems of management (Paudel et al., 2009). Consequently, farmers regarded the government-owned forest as if it belonged to nobody, and so it therefore became a *de facto* open access resource. As a result, nationwide deforestation occurred between 1957 – 1977 (Bajracharya, 1983; Hobley, 1985; Arnold & Campbell, 1986; Messerschmidt, 1986; Ostrom, 1990: 23; Agrawal & Ostrom, 2001). The government realized that without decentralizing some degree of management rights to local communities, the deforestation could not be halted.

The 1957 change in forestry regime proves that Hardin's way of managing the commons is not appropriate to regulate common resources sustainably.

Towards the end of the 1970s, prior to the advent of Ostrom's CPR theory, Nepal's government started to relinquish some of its forest management powers to the local communities. This shift in forestry regime achieved national momentum during the 1990s and has subsequently succeeded in halting deforestation, conserving biodiversity, supporting rural people's livelihoods and establishing local-level institutions (Gilmour & Fisher, 1991; Rusten & Gold, 1995; Jackson et al., 1998; Acharya, 2002; Gautam et al., 2002; Manandhar-Gurung, 2007; Ojha, Persha, et al., 2009). Nepal's success in managing the commons by deploying local communities is renowned internationally.

The 1957 nationalization also confirms that centrally controlled forest management does not fulfil the subsistence requirements of people whose livelihoods are related to forest resources. Although the government still holds property rights over forest land, the community forestry institutions of Nepal have been granted sufficient rights to design and implement rules for the betterment of local forests and users (see Paper IV). Nepal's successful history of community-based forest management proves that Ostrom's CPR theory is more appropriate than Hardin's approach to managing the commons.

However, Ostrom's CPR theory is insufficient to accommodate emerging changes in forestry governance, such as REDD+. The theory does not address circumstances such as the duality of local forest management (as seen in Mustang); the decreasing use of the commons; and the power differences between the users. Ostrom's theory is modelled on eight principles that characterize self-organized CPRs, which are known as design principles.³² A “design principle”, according to Ostrom, is ‘*an essential element or condition that helps to account for the success of [these] institutions in sustaining the CPRs and gaining the compliance of generation after generation of appropriators to the rules in use*’ (Ostrom, 1990: 90). The findings of this study contribute to the discussion of two of these principles, namely principle no. 2 on *congruence between appropriation*

³² Ostrom's design principles are listed in Appendix 7

and provision rules and local conditions and principle no. 7, which maintains *minimal recognition of rights to organize* (Ostrom, 1990: 90).

Principle no. 2 implies that appropriation and provision rules regarding the use of CPRs should be established in order to maintain the local people's requirements. Congruence between these appropriation and provision rules also implies a level of congruence between the cost incurred by users and the benefits that they receive by participating in a CPR institution (Cox et al., 2010). I understand 'local conditions' as local traditions and villagers' usage habits, and 'appropriation and provision rules' as the measures designed to control, regulate and facilitate the appropriators' or users' traditions and habits.

Principle no. 7 implies that the appropriators' or users' rights to self-organize should not be challenged by external intervention, for example by local and central authorities.

I argue that principle no. 2 is at risk when an external factor like REDD+ is implemented in local forests. For instance, in Dolakha, the users' tradition of using forests has been hampered by the implementation of the REDD+ pilot project, as it has banned grazing and limited users' access to the forests. These rules were not imposed due to the scarcity of resources, decreasing carrying capacity of local forests, deforestation or any natural catastrophe; rather, they were implemented on account of the notion that forest users' traditional usage habits can reduce the forests' ability to sequester more CO₂. In addition, a new forestry framework like REDD+ is beyond the users' traditional knowledge and technical ability to implement, regulate and sanction. These inabilities, after all, erode the users' traditional ability to self-organize in order to regulate the common resources. For the sustainability of forest institutions, such changes should be included in Ostrom's CPR theory.

Furthermore, Ostrom's theory does not account for situations in which two institutions - traditional and formal - co-exist and manage the forests together. If the Mustang case is analyzed from the perspective of the traditional institutions, the involvement of formal institutions can be considered to be an external intervention, which violates principle no. 7. If, on the other hand, it is analyzed from the perspective of the formal institution,

the persistence of traditional institutions and users' habits can be understood as the 'local conditions'. Since the formal institution manages the forest by merging several village forests, which the villagers consider to be an encroachment of their traditional practices, this violates principle no. 2. The inclusion of a provision within the CPR theory to address such a 'dual management' situation is therefore very important.

Moreover, Ostrom's CPR theory is principally based upon the understanding that a community or local users are 'dependent' on CPRs, and that they therefore organize themselves in order to manage it. This study has shown that users' dependency on the forests for their livelihoods has decreased (Paper IV). The decreasing use of common resources has subsequently reduced users' willingness to participate in the local forestry institutions. In such changing contexts, Ostrom's CPR theory should give scope for the inclusion of internal (e.g., decreasing use and decreasing interest to self-organize) and external (e.g., REDD+) factors.

Although the modification of the principles no. 2 & 7 in the "design principles" may strengthen the CPR theory, there is also the possibility of the re-centralization of forest management when implementing REDD+ (see Phelps et al., 2010; Vijge et al., 2016). In this sense, Hardin's suggestion of the nationalization or privatization of common resources may gain prominence in the future when the carbon trade starts functioning nationally or globally. The design of institutions for common resources in the future should therefore not only consider the forest as a source of earning subsistence, but local communities should also be trained or motivated to seek other potential benefits from forest management.

I argue that users' dependency on the forest and their interest in self-organizing will both continue to decrease, unless migrants resume their village livelihoods. This, in turn, may lead to the continuing decrease of the forest's value in supporting subsistence livelihoods, and to its increasing value for *conservation* purposes (i.e., protecting biodiversity, storing CO₂). However, as a nation trying to achieve both economic progress and having about 45 percent of its total land covered by forests, Nepal should benefit from forests prioritizing *development*. In order to achieve this, CPR users should be trained to *use* forest resources for *market purposes*, for example managing forests to

produce timber,³³ CO₂, herbs, cash crops, fruits, animal products etc. with a direct focus on market demand. In addition, the government should revise the existing rules in order to devise processes that more readily link CPR institutions to the markets. This will also encourage users to participate in local forest management, meaning that the chance of meeting both development and conservation goals may also increase. As a result, CPR institutions would have multiple opportunities for selecting the most appropriate option available to them, for instance using forests either for livelihood earning, or for participating in REDD+ or for selling forest products directly to the markets, or indeed a combination of the above. Molding CPR institutions into more commercially-minded local institutions is important for three main reasons. First, it motivates existing users to continue to protect the forests because they internalize it on account of their economic interests and can see it as a means of making their own economic progress. Second, the potential for attracting migrants to resume their living in the villages may also increase. Finally, benefitting from forests will contribute to Nepal's overall economic progress.

4.6 Conclusion

The precursor to Nepal's current community forestry (CF) is rooted in the apocalyptic conception of environmental degradation that was popular during the 1970s. Later on, the idea of CF was modelled to achieve the twin objectives of development and conservation. Reducing Emissions from Deforestation and Forest Degradation (REDD+) is a newly articulated framework with the same twin objectives. The objective of conservation is now extended to a global scale with regards to reducing global warming. Nepal also adopts REDD+ as a medium to alleviate poverty and conserve biodiversity. Subsequently, several REDD+ pilot projects have been launched through CF. Considering these changing contexts and realizing the extended responsibility of CF, this study has tried to examine the interactions of CF both with emerging forestry governance such as REDD+, and with traditional institutions. In order to accomplish this, the study has selected two types of CF institutions: the Community Forestry Users

³³ One study found that the timber alone from CF can generate income of approximately NRs 27 billion (c. \$258.4 million) and 21,710 jobs annually (Paudel et al., 2014; see also Larsen et al., 2015).

Groups of Dolakha District and the Conservation Area Management Committee of Mustang District.

Two key conclusions, which have become salient during the analysis, are drawn here. Firstly, the success of any new forestry governance depends upon the degree to which it facilitates the communities' access to the forest. The conservation of carbon is not the primary concern of subsistence farmers. In the case of Dolakha, the communities' access to the forests has been restricted as a result of the implementation of the REDD+ pilot project. Any emerging forestry governance should therefore not neglect the local communities' customary usages.

Secondly, although there are not many traditional forestry institutions left in Nepal, the traditional institutions of Mustang have been found to be effective in the management of local forests. An appropriate space for traditional practices should therefore be allocated when designing new forms of forestry governance. The success or failure of a forestry institution can be determined by how flexibly its rules are executed, and whether or not it can gain the support of local people and their institutions. In order to be accepted by local communities, emerging forestry governance should therefore provide sufficient freedom to local communities and allow them to influence the design of new management systems.

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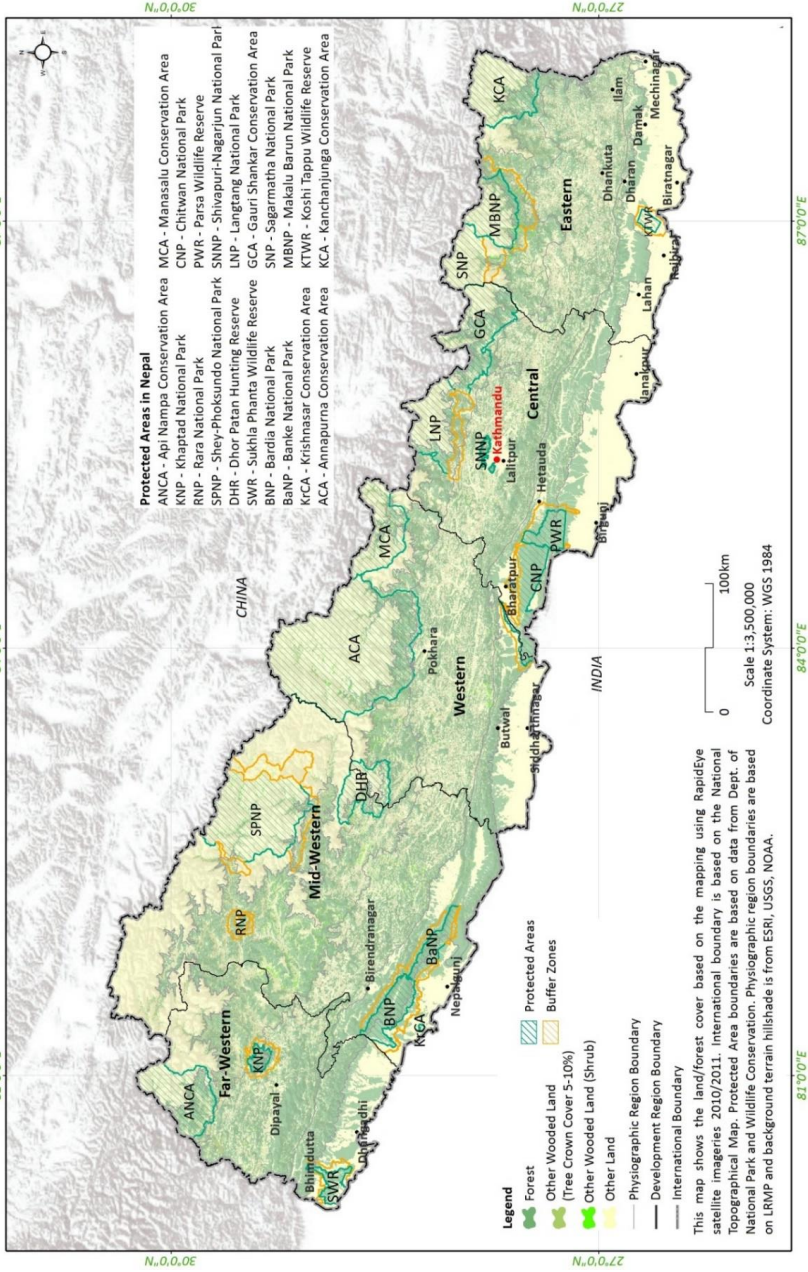
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Appendix

Appendix 1: Protected Areas of Nepal (adopted from DFRS, 2015: 26)



Appendix 2: Total population by caste-ethnicity, Dolakha & Mustang, 2011

Dolakha			Mustang		
Caste/ethnicity	Total	%	Caste/ethnicity	Total	%
Chhetri	62319	33.4	Gurung	2879	21.4
Tamang	31286	16.8	Thakali	2533	18.8
Newar	17488	9.4	Lhopa	2507	18.6
Brahman-hill	17136	9.2	Magar	1112	8.3
Thami	16622	8.9	Kami	1069	7.9
Sherpa	8924	4.8	Chhetree	941	7.0
Kami	7976	4.3	Damai/Dholi	532	4.0
Jirel	4493	2.4	Brahman-Hill	462	3.4
Damai/Dholi	4109	2.2	Tamang	287	2.1
Sarki	4014	2.2	Newar	106	0.8
Magar	3048	1.6	Sherpa	96	0.7
Gharti/Bhujel	2684	1.4	Rai	76	0.6
Sunuwar	1829	1.0	Chhantyal/Chhantel	76	0.6
Sanyasi/Dashnami	1330	0.7	Sarki	70	0.5
Gurung	970	0.5	Thakuri	62	0.5
Majhi	410	0.2	Dalit Others	53	0.4
Terai Other	303	0.2	Bhote	51	0.4
Thakuri	272	0.1	Tharu	42	0.3
Rai	117	0.1	Thakuri	39	0.3
Badi	115	0.1	Badi	21	0.2
Undefined Others	42	0.0	Kulung	12	0.1
Tharu	38	0.0	Limbu	12	0.1
Kathbaniyan	36	0.0	Other	414	3.1
Brahman-Tarai	35	0.0	All caste	13452	100.0
Hajam/Thakur	32	0.0			
Musalman	30	0.0			
Ghale	28	0.0			
Koiri/Kushwaha	17	0.0			
Haluwai	17	0.0			
Yadav	12	0.0			
Dhanuk	11	0.0			
Teli	11	0.0			
Others	803	0.4			
All caste	186557	100.0			

Source: National Population and Housing Census 2011, Village Development Committee/Municipality (2014); Dolakha and Mustang (Volume 06, NPHC2011) Central Bureau of Statistics, National Planning Commission Secretariat, Government of Nepal, Kathmandu

Appendix 3: Villages/hamlets (*tols*) visited in Dolakha, 2013

SN	Village/hamlet	Surveyed VDC and Household		Total Household
		Lakuridada	Magapauwa	
1	Bhandare	5	0	5
2	Bhiramuni	6	0	6
3	Chhinke	1	0	1
4	Chhipee	3	0	3
5	Chisopani	1	6	7
6	Choulaya	4	0	4
7	Choutara	2	0	2
8	DadaGaun	5	3	8
9	DangiTol Surke	1	0	1
10	Fulbari	3	0	3
11	FulbariGhumti	5	0	5
12	Hile	0	9	9
13	JhakriChour	5	0	5
14	Jhigane	2	0	2
15	Karki Tol	0	2	2
16	KhariDhunga	6	0	6
17	KhariDhunga Rol	1	0	1
18	Kundaldada	1	0	1
19	LamcheAahal	0	5	5
20	Okharbot	2	0	2
21	Okhre	2	0	2
22	Purano Gaun	0	3	3
23	Rol	11	0	11
24	Surke	16	0	16
25	Swanra	5	0	5
26	Syansi	3	0	3
27	ThuloChour	3	0	3
	Total	93	28	121

Appendix 4: Caste/ethnic affiliation of respondents, 2013 and 2014

District	Caste/ethnic affiliation	Gender		Total	%
		Female	Male		
Dolakha (2013)	Newar	36	17	53	43.8
	Kshetri	11	14	25	20.7
	Tamang	22	9	31	25.6
	Thami	2	2	4	3.3
	Brahman	1	0	1	0.8
	Sherpa	0	1	1	0.8
	BK	4	0	4	3.3
	Nepali	2	0	2	1.7
Total		78	43	121	100.0
%		64.5	35.5	100.0	
Mustang (2014)	Thakali	20	26	46	74.2
	Sherpa	0	1	1	1.6
	BK	0	6	6	9.7
	Pariyar	0	2	2	3.2
	Gurung	1	5	6	9.7
	Lama	0	1	1	1.6
Total		21	41	62	100.0
%		33.9	66.1	100.0	
Both districts	Newar	36	17	53	29.0
	Thakali	20	26	46	25.1
	Kshetri	11	14	25	13.7
	Tamang	22	9	31	16.9
	Thami	2	2	4	2.2
	Brahman	1	0	1	0.5
	Sherpa	0	2	2	1.1
	BK	4	6	10	5.5
	Nepali	2	0	2	1.1
	Pariyar	0	2	2	1.1
	Gurung	1	5	6	3.3
	Lama	0	1	1	0.5
Grand total		99	84	183	100.0
%		54.1	45.9	100.0	

Appendix 5: Caste/ethnic affiliation of respondents, 2015

District	Caste/ethnic affiliation	Gender		Total	%
		Female	Male		
Dolakha	Newar	21	14	35	53.8
	Kshetri	3	2	5	7.7
	Tamang	10	8	18	27.7
	Thami	3	2	5	7.7
	Lama	0	2	2	3.1
Total		37	28	65	100.0
Mustang	Thakali	21	31	52	80.0
	BK	0	5	5	7.7
	Pariyar	1	3	4	6.2
	Gurung	1	3	4	6.2
Total		23	42	65	100.0
Both districts	Newar	21	14	35	26.9
	Thakali	21	31	52	40.0
	Kshetri	3	2	5	3.8
	Tamang	10	8	18	13.8
	Thami	3	2	5	3.8
	BK	0	5	5	3.8
	Pariyar	1	3	4	3.1
	Gurung	1	3	4	3.1
	Lama	0	2	2	1.5
Grand total		60	70	130	100.0
%		46.2	53.8	100.0	

Appendix 6: Total population of the Study VDCs by caste/ethnicity, 2011

Dolakha

Lakuridada Caste/ethnicity	Population	%
Newar	1408	37.9
Tamag	1224	33.0
Chhetri	591	15.9
Thami	313	8.4
Brahman-Hill	84	2.3
Gharti/Bhujel	69	1.9
Sherpa	13	0.4
Other	11	0.3
Total	3713	100.0

Magapauwa Caste/ethnicity	Population	%
Newar	825	28.0
Chhetri	833	28.2
Tamang	732	24.8
Brahman-Hill	313	10.6
Gharti/Bhujel	95	3.2
Kami	94	3.2
Damai/Dholi	33	1.1
Sanyasi/Dashnami	20	0.7
Other	5	0.2
Total	2950	100.0

Mustang

Jomsom Caste/ethnicity	Population	%
Thakali	403	29.4
Grurung	244	17.8
Magar	167	12.2
Kami	146	10.7
Brahman-Hill	94	6.9
Tamang	88	6.4
Chhetri	56	4.1
Damai/Dholi	44	3.2
Newar	29	2.1
Serpa	24	1.8
Badi	21	1.5
Sarki	15	1.1
Thakuri	14	1.0
Other	13	0.9
Rai	12	0.9
Total	1370	100.0

Marpha Caste/ethnicity	Population	%
Thakali	544	35.1
Kami	223	14.4
Damai/Dholi	151	9.7
Gurung	148	9.5
Magar	122	7.9
Other	76	4.9
Brahman-Hill	74	4.8
Chhetri	68	4.4
Tamang	51	3.3
Tharu	22	1.4
Rai	21	1.4
Newar	20	1.3
Sarki	17	1.1
Sherpa	14	0.9
Total	1551	100.0

Source: National Population and Housing Census 2011, Village Development Committee/Municipality (2014); Dolakha and Mustang (Volume 06, NPHC2011) Central Bureau of Statistics, National Planning Commission Secretariat, Government of Nepal, Kathmandu

Appendix 7: Ostrom's design principles

1. Clearly defined boundaries

Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.

2. Congruence between appropriation and provision rules and local conditions

Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.

3. Collective-choice arrangements

Most individuals affected by the operational rules can participate in modifying the operational rules.

4. Monitoring

Monitors, who actively audit CPR conditions and appropriator behaviour, are accountable to the appropriators or are the appropriators.

5. Graduated sanctions

Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.

6. Conflict-resolution mechanisms

Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.

7. Minimal recognition of rights to organize

The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.

For CPRs that are parts of larger systems:

8. Nested enterprises

Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.



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