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## Social equity and livelihood implications of REDD+ in rural communities – a case study from Nepal

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**Abstract:** Despite growing international consensus that the use of the policy instrument REDD+ (Reducing Emissions from Deforestation and forest Degradation in developing countries) could be an effective way to reduce carbon emissions from the forestry sector and support bio-diversity with livelihood benefits, there are a range of unresolved issues, including potential implications for rural livelihoods. This paper presents results from recent research that examines social equity and livelihood implications of the piloting of REDD+ through Nepal's community forestry system, within selected villages in the Gorkha district of Nepal. The research reveals the varying experiences of households, closely correlated to the socio-economic attributes of the households. Despite the 'no harm and equitable' policy, this research indicates that not everyone is experiencing the anticipated benefits of REDD+. Although poorer, women-headed and marginalized households are targeted in some ways (e.g. seed grants), the support is limited, and inadequately compensates the loss they have experienced

in other ways (e.g. limited access to forests). Households bundling by caste may not necessarily address equity, but is likely to increase intra-caste marginalization.

**Keywords:** Community forestry, livelihoods, multiple outcomes, poverty and equity, REDD+

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## 1. Introduction

The original idea for the policy mechanism for Reducing Emissions from Deforestation and forest Degradation (REDD) was to contribute to climate change mitigation, by creating incentives for developing countries to keep their forests standing (Phelps et al. 2010). Since then, the scope of the policy has expanded, and currently encompasses deforestation, forest degradation, conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries, collectively known as REDD+ (Visseren-Hamakers et al. 2012a,b). In addition, to provide potentially large-scale carbon emissions reduction at comparatively low abatement costs (Stern 2006), REDD+ has also unfolded as a policy mechanism for promoting sustainable forest sector development, enhancing rural livelihoods, and protecting biodiversity (Angelsen et al. 2009). However, despite establishing so-called REDD+ safeguards for co-benefit outcomes in the draft negotiation text during the 16th conference of parties, and then reaffirming them during the 17th conference (UNFCCC 2011), little further progress has been made in terms of developing international standards and their translation into uniform national rules (Huettner 2012). Hence, considerable uncertainty still remains about the implementation, effectiveness and sustainability of REDD+ schemes, most significantly at national and local levels.

In developing countries, local people have relied on forests to sustain their population for centuries. Community forestry has been increasingly recognized as a promising approach, not only to improve the livelihoods of rural communities, but also to achieve sustainable management of forests (Neupane and Shrestha 2012). Based on experiences to date, community forestry has been proposed as a potential strategy for REDD+ implementation on the ground by protecting forests and safeguarding the desired co-benefit outcomes (Agrawal 2008; Skutsch et al. 2011; Paudel et al. 2013).

However, REDD+ and community forestry differ fundamentally, both in their concepts, and their frameworks (i.e. design, scale and scope). The overarching framework of REDD+ was developed by the UNFCCC (i.e. a 'top down'

approach), to deal with climate change through the conservation of forests (Corbera and Schroeder 2011). In contrast, community forestry originated from the 'grass roots' community level (i.e. a 'bottom up' approach), to deal with local livelihood requirements through sustainable use of forests (Charnley and Poe 2007). Past experiences of development interventions have shown that top-down approaches can be highly insensitive to local needs, priorities and goals (Mustalahti and Lund 2009). Hence, the idea that REDD+ can be implemented through community forestry has given rise to concerns regarding the compatibility of these policies (Bluffstone and Robinson 2012; Neupane and Shrestha 2012).

In order to increase carbon sequestration, REDD+ may seek changes in patterns of forest resource use through many mechanisms, including creating disincentives through imposing tightened rules, and creating incentives through compensation (Albbers and Robinson 2013), which would influence the livelihoods of forest-dependent people. Whether these influences are positive or negative may depend in large part on the institutional design and governance structures of REDD+ programs (Rodgers 2012). The actual benefits that local communities might accrue from REDD+ (how much and on what basis) remain unclear. This has resulted in considerable uncertainty as to whether potential losses (e.g. access restriction) for the local and indigenous communities could exceed potential gains (e.g. compensation money). It is also likely that infusion of carbon value in forests will encourage the dispossession of politically and economically marginal people from the forests on which they have been relying (AIPP and IWGIA 2012; Chhatre et al. 2012).

Amidst these uncertainties, REDD+ has been piloted via community forestry in different countries. So far, however, little empirical evidence has been published that reveals REDD+ implications for the livelihoods of forest dependent communities (Hajek et al. 2011; Bluffstone and Robinson 2012). Concern about who might be winners and losers at local levels has become more prominent in the debate, particularly after the first generation REDD+ activities have been piloted as a part of the readiness process. These concerns have fuelled a growing demand for an analysis of social justice issues (equity, fairness and rights) associated with the implementation of the REDD+ mechanism at local levels (Peskett et al. 2011).

This research uses social equity as the analytical framework. This is not only because of the emergence of equity in REDD+. More importantly, it is one of the fundamental principles of community involvement in forest management (Li 1996). While equity is defined in various ways in the wider literature, this article refers to Fisher (1989), and defines equity as a social mechanism for ensuring different groups in society receive a fair share, not necessarily an equal share. Within this framework, equity refers to fairness in decision making processes (procedural equity), and fair outcomes of such decisions (distributional equity). In the context of REDD+ in community forestry, concerns have been raised for the welfare of those in the community who are the least advantaged and the most vulnerable to the changes that REDD+ seeks in local community forestry approaches (Ojha et al. 2013).

Based on ongoing case study research in the REDD+ pilot through community forestry in Nepal, this article seeks to explore the influence of the pilot on rural livelihoods. In particular, the focus is the analysis of how and to what extent social equity is maintained while sharing costs and benefits of the pilot, including the likelihood of future implications. These issues are addressed by answering four research questions: (i) how does the REDD+ pilot influence households in rural communities? (ii) do influences differ between households and/or communities? (iii) what are the factors for differential influences? and (iv) how can REDD+ avoid inequity and marginalisation?

This article is organised into seven sections. Section two reviews dimensions of community forestry outcomes in Nepal, providing an overview of contributions to livelihoods of forest dependent communities. Section three reviews the REDD+ development process in Nepal, and provides an overview of the REDD+ pilot. Section four describes the case study sites and research procedures. Section five analyzes data, and presents results. Section six synthesises findings, and is followed by the concluding section.

## 2. Dimensions of community forestry outcomes in Nepal

Nepal possesses a strong community based forest management system, which not only supports local livelihoods, but also results in enhancement of the resource base, along with addressing other cross cutting issues such as social exclusion, gender equity and other types of discrimination (Pokharel and Byrne 2009; Karky and Skutsch 2010). Although community forest management has been practiced for generations in some form, community forestry (CF) was addressed by state policy for the first time in the 1970s. After promulgation of the Master Plan for the Forestry Sector (MPFS) in 1988, followed by the Forest Act 1993 and successive Regulation 1995, community forestry in Nepal emerged and was established as a mainstream forestry program.

Initially, community forestry in Nepal was primarily protection-oriented, but now it encompasses much broader-based strategies for forest use, enterprise development, and livelihood improvement (Kanel and Dahal 2008; Ojha et al. 2009). By the end of June 2012, CF covered approximately 25% of Nepal's land area (i.e. 63% of designated forests). About 1.7 million hectares of forestland is managed by over 18,133 communities, comprising 1.45 million households or 35% of the population across the country (DOF 2013).

It is acknowledged that community forestry has generated multiple outcomes in Nepalese society. Major outcomes described in the literature include: (i) local communities legally empowered to manage forests (Ojha et al. 2009); (ii) development and establishment of appropriate institutional structures at different levels (FECOFUN for example), from very local level to national (Nagendra et al. 2008; Thoms 2008); (c) provision of subsistence income for poor families (Poudel 2007); (d) local employment and income from establishment of forest based enterprises (Subedi 2006); (e) empowerment of rural people for more inclusive

governance (Luintel et al. 2009); (f) improvement of forest conditions (Kanel and Kandel 2004); (g) other social welfare activities such as school buildings, scholarships for poor children, and road networks (Gautam 2009).

All of these outcomes have direct or indirect implications for the livelihoods of the people, particularly for those who rely on forests for their subsistence. More than 90% of people living in rural areas rely on low income activities (income <2 US\$ per day) (MOE 2010). In Nepal, forest resources provide the means for livestock farming, inputs for agriculture and supply of timber and non-timber forest products, which are the basis of rural livelihoods (Pokharel et al. 2007; Kanel and Dahal 2008). More than 90% of households in rural areas need both firewood and grass to sustain their livelihoods. About 59% of them get firewood from CF, while it is 47% for grass, 28% for fodder and about 47% for leaf litter (Thoms 2008, 1458).

A study by Kanel and Dahal (2008) reported that in addition to supplying subsistence needs, Community Forest User Groups (CFUGs) in Nepal annually earn US\$11.80 million from the sale of forest products (p. 55). Poudel (2007) reported that 87% of CFUG households in a remote district of Jumla, Karnali were involved in collecting Non-Timber Forest Products (NTFPs) from forests, and earn US\$250.00 in average cash annually. Of these, 57% of households were experiencing food deficit from their farm production for more than six months. Poudel (2007) found that NTFPs contribute 30–40% of food needs and 60 to 70% of other livelihood requirements (i.e. clothes, schooling costs and medication) (pp 47–50).

However, scholars (e.g. Thoms 2008; Agarwal 2009) have reported that the dimensions and values of forest dependence vary according to household wealth (land holding in particular), farming strategy and gender. Thoms (2008) identified that poor and marginalized (i.e. Dalit or lowest caste) households are likely to seek more firewood from forests than richer people, who hold more land and private trees. Agarwal (2009) found that women and children were mostly involved in collecting firewood, fodder, and other NTFPs such as mushrooms and nuts from forests. Dhakal and Bhatta (2009) identified that the livestock holding capacity of households, mostly in the Mid Hills in Nepal, is largely influenced by availability of forage (i.e. grazing, fodder) in forests near their village. Overall, households rely on forests differently, based on their wellbeing, gender, and farming strategy, suggesting the need for equity in resource distribution.

However, in most cases in Nepal, it is found that CFUGs apply an “equal for all” approach to benefit sharing. Thoms (2008) reported no significant difference in the amount supplied from community forests to more needy households, like poor and Dalit. In many CFUGs, Thoms (2008) found that products supplied were less than households demanded. This put the poorer in a disadvantaged position, either because they are not able to afford alternatives, such as private sources that require land to grow trees, or they must spend more of their limited financial resources to purchase products, in particular firewood and timber. Bushley (2010) argues that most CFUGs perpetuate local power imbalances and corruption involving

community elites and third parties. Mahanty et al. (2009) found a negligible role for traditionally marginalized groups in the decision making processes of community forestry. Further, discrimination and stratification by caste and gender are also reported in Nepalese community forestry (Gautam 2009; Pokharel and Byrne 2009). Overall, there are deeply entrenched social disparities and inequalities within local community forestry approaches that present challenges for REDD+.

### 3. REDD+ in Nepal: process, prospects and equity concerns

Nepal's government has embarked on a pilot of REDD+ as a potential solution and source of funding for the persistent and linked problems of climate change, deforestation, biodiversity loss, and rural poverty. Nepal has been a partner country of the World Bank's Forest Carbon Partnership Facility (FCPF), and also joined the UN-REDD program as an observer country in October 2009. After approval of its REDD+ Readiness Preparation Proposal (R-PP), Nepal is preparing its strategy for REDD+ implementation, which was expected to be ready by the end of 2013 (MFSC 2010). In order to prepare itself for the REDD+ regime, the government of Nepal has developed a three tier institutional set-up. The highest tier is an apex body, which is a multi-sectoral, multi-stakeholder policy level coordinating entity, comprising the highest government officials, the national planning commission and at least 50% of members from civil society and private sectors. The second tier, REDD Working Group (RWG) provides technical support, and the third tier (REDD Cell) coordinates the whole REDD+ readiness procedure (MFSC 2010).

In addition to support from the World Bank's FCPF for policy development, REDD+ readiness initiatives in Nepal have been supported by UN-REDD and other Overseas Development Assurances (ODAs). According to the REDD Cell in the Ministry of Forests and Soil conservation (MFSC), five different REDD+ piloting projects were underway across Nepal by the end of 2012. Most of these pilots were being implemented through community forestry, with the aim of developing methodologies for forest carbon measurement, benefit sharing, and technical capacity building (MFSC 2012; WOCAN 2012). In the future, it is hoped that REDD+ in Nepal may provide an additional motive for local communities to manage forests, by rewarding them financially (MFSC 2010). In order to ensure local communities receive a fair share of REDD+ benefits, it is also anticipated that a clear link between carbon ownership rights and land tenure rights of local communities will be established through policy reform (MFSC 2010).

Despite these perspectives however, concerns whether REDD+ be truly beneficial for local communities are yet to be properly answered. Even further, existing governance limitations of community forestry, discussed above, could generate huge complexities regarding equity and efficiency in benefit distribution (Ojha et al. 2009; Bushley 2010). Considering the existing governance challenges of community forestry, and increasing possibilities for REDD+ to be implemented through this governance framework, scholars (Adhikari 2009; Agrawal and Angelsen 2009; McNally et al. 2009; Ojha et al. 2009; Pokharel and Byrne 2009;

Bushley 2010; Skutsch et al. 2011) have advised some revisions of existing local approaches to CF governance. Suggested revisions cover: the capacity to fully integrate a broad range of stakeholders; compatibility with the local institutional, social and cultural situations; support for decentralised forest governance; and the ability to address the diverse concerns (i.e. needs and interests) of forest dependent communities on an equitable basis, from the beginning of the project design process.

#### 4. Research approach

This research was undertaken in two CFUGs in the Ludhikhola watershed, one of three piloting sites<sup>1</sup> in Nepal, jointly implemented since 2009 by the International Centre for Integrated Mountain Development (ICIMOD), the Asian Network for Sustainable Agriculture and Bio-resources (ANSAB) and the Federation of Community Forestry Users Nepal (FECOFUN), with financial support from the Norwegian Agency for Development Cooperation (NORAD). The main objectives of the pilot project are to demonstrate the effectiveness of REDD+ benefit-sharing mechanisms among Nepal's CFUGs, and to develop a REDD+ payment mechanism at the national scale. To meet these objectives, the project has funded CFUGs to provide seed grants for different activities that directly or indirectly support emissions reduction, including forest enhancement, capacity building, and income generating activities based on some social as well as biophysical criteria (ICIMOD et al. 2011). NORAD provided a total of around US\$95,000<sup>2</sup> per year for three years, to distribute to local communities in the three pilot sites. The funds provided do not represent either the market price of the credited carbon, or the foregone losses in communities (ICIMOD et al. 2011).

Out of the total grant support, each CFUG receives an annual REDD+ payment based on four criteria – carbon enhancement: 40%, ethnic diversity (Indigenous and Dalit households): 25%, poorer households: 20% and female population: 15%. A district level multi-stakeholder monitoring committee assesses all CFUGs against these criteria, and determines the total amount to be received. For example, 40% of US\$95,000 is allocated for the total carbon increase (tons CO<sub>2</sub>), and distributed to each CFUG proportionally. In each CFUG, carbon measurement is undertaken by a joint team, including members from the CFUG and the district monitoring committee, and a forest inventory expert on behalf of the project (ICIMOD et al. 2011). CFUGs received their third, and possibly final, instalment in June 2013. The first instalment was paid in 2011.

<sup>1</sup> Ludhikhola, Kayarkhola and Charnwati are three REDD+ piloting watersheds in Nepal. This research purposefully selected Ludhikhola because this area had never previously been influenced by forestry projects.

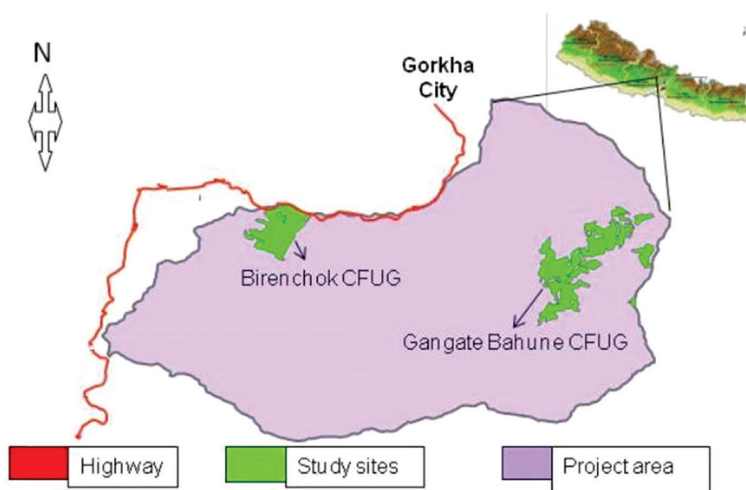
<sup>2</sup> This amount has no relation to forest size, amount of carbon enhancement or carbon value in the market.



The Ludhikhola project site is in a hilly physiographic region in the Gorkha district of western Nepal, about 150 km west from Kathmandu (Map 1, below). The area is characterised by remoteness and poverty, but also by diversity in culture, ethnicity, and natural resources. Most people are subsistence farmers with high dependency on forest resources. To sustain their livelihoods over the last 30 years, local people have engaged in forest resource management through 31 CFUGs of different sizes, across the watershed incorporating 3,800 households.

This research was guided by an inductive approach to social research (Walter 2006), involving the collection of qualitative data that seeks to understand the complexity of social relationships and actions, and asks direct questions of informants to explore the meanings and drivers for different behaviours and activities (Neuman 2006). Qualitative data was collected in the field in 2012 through in-depth interviews and focus group discussions, as well as document review and observations. Some supporting data, including demographic information, was also collected through household surveys, which combined both structured and semi-structured questioning.

At the beginning of the field program, a multi-stakeholder meeting was organised to consider the selection of case study sites from the 31 CFUGs in the Ludhikhola watershed. Based on CFUG performance criteria drawn from a 2011 REDD+ pilot project report, such as program planning and implementation, user participation, benefit distribution, record keeping and reporting, the stakeholders identified two preferred case study CFUGs for data collection: Birenchok (relatively high level of success against performance criteria); and Gangate Bahune (low level). The idea behind the selection of high and low performing CFUGs



Map 1: Locating case study CFUGs in Ludhikhola watershed, Gorkha Nepal.



was to explore variables underpinning the likely success or failure of REDD+ in community forestry, within limited time and resources.

Across these sites, a total of 38 in-depth interviews were undertaken, with key informants purposively selected for their relevant experience and knowledge of the REDD+ pilot. These included local forest users, CFUG committee members, and policy level stakeholders.<sup>3</sup> Six focus group discussions were also undertaken with different social groups in the CFUGs, including women, poor people and Dalits (marginalized caste). As well, a total of 61 households (at least 30 from each CFUG) were randomly surveyed using a semi-structured survey to gather demographic data, and experiences and perceptions about REDD+ and its influences on their livelihoods.

## 5. Results

The REDD+ pilot has influenced local approaches and activities of community forestry in two thematic areas: group management and forest management. Although influences were varied in communities, executive committees appeared to be more active than before as evidenced by increasing numbers of meetings, general assemblies and other activities like skills and awareness development. Local people reported that REDD+ has placed emphasis on consultation with users in making policy related decisions. Previously, committees made decisions without consulting users. Record keeping has been systematic and transparent, strict banking systems have been applied, reporting and auditing (both internal and public) has been systematised, and most importantly, benefit sharing has become more equitable for poor, women, and marginalized groups. These activities were rarely reported before the REDD+ pilot.

Regarding forest management, however, REDD+ has focussed on protection rather than meeting households' requirements. Prior to implementation of REDD+, these priorities were reversed. Users' access to forests and forest resources has been limited by regulated harvesting and controlled grazing. For example, individuals were not allowed to harvest timber and firewood in forests. Instead they were forced to approach committees, who appeared reluctant to harvest any kind of products, in the fear that they may lose standing biomass (i.e. carbon) and hence seed grants as a consequence. In this new scenario, the users' requirements came second to forest protection. For example, the GangateBahune committee have not harvested timber and firewood (thinning, pruning) since the REDD+ pilot started. Although the Birenchok CFUG harvested timber and firewood in 2011, the harvested amount was <50% of the demand. Individual access for leafy resources has also been tightened by regulated access (i.e. a couple of days in a

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<sup>3</sup> Policy level stakeholders included senior forestry officials involving REDD+ policy development, members of the REDD+ multi-stakeholder policy forum, related senior staff from project's partner agencies, researchers, and leaders from the Federation of Community Forests Users, Nepal (FECOFUN).

month). While there were no grazing restrictions before the REDD+ pilot, most forest areas have now been declared restricted to grazing. These protection efforts have enhanced forest conditions in terms of both standing biomass and carbon stock. This reality has not only been confirmed by research participants, but also revealed in the annual payment distribution sheets (ICIMOD 2011, 12 and 13),<sup>4</sup> suggesting average carbon increments of around 4.1 ton/ha in Birenchok and 6.3 ton/ha in GangateBahune since the pilot started.

This research found that the REDD+ pilot has been experienced differentially by different households because of varying needs and interests, suggesting likely implications for social equity and livelihoods of forest users in the future. Households' wellbeing status, gender, ethnicity, and livelihood strategies appeared to be major variables causing differential effects at different households. The REDD+ pilot has resulted in tightened rules to limit or control access to forests and forest resources, and minimized harvesting activities. Although some supports, including awareness and skills enhancement, seed grants for Income Generation Activities (IGA) and support for Improved Cooking Stoves (ICS) were provided, these supports led to negligible change in the traditional attitudes and behaviour of CFUGs, and were inadequate compensation for losses incurred. Table 1 summarizes initial outcomes of the REDD+ pilot, linking cause and effects, starting from the intervention column (arrows in the table show direction of the linkage). For example, one of the implications of the special fund reservation for the Indigenous Population (IP) is that non-indigenous poor households are deprived of receiving equal benefits.

The following results elaborate on Table 1 by linking the causal chain of the REDD+ pilot intervention studied from the social equity perspective. In particular, analysis focuses on illustrating the unequal effects that REDD+ is likely to generate at households of varying social categories, including wellbeing; gender; ethnicity; and livelihood strategies.

## 5.1. Household wellbeing

Nepal's community forestry guideline (2006) advises CFUGs to categorise user households based on their wellbeing (DOF 2006). Households in the case study CFUGs were categorised into four wellbeing categories, based on four basic criteria adopted locally. Table 2 provides the criteria applied for the purpose of household wellbeing ranking, along with users' composition in the study CFUGs (Figure 1). The following paragraphs analyze how households were affected differentially by REDD+.

### 5.1.1. Controlled access to forests affected poorer to the greatest extent

As expected, REDD+ has tightened users' access to forests. As described previously in this section, local people reported that they have been deprived

<sup>4</sup> Referring to ICIMOD's payment distribution sheets for three years 2011, 2012 and 2013; not published documents.

Table 1: Summarizing findings linking causal chain from the social equity perspective.

SN	Intervention	Outcomes	Most affected	Reasons	Thematic category
1	Controlled access to forests	Users deprived of meeting resource requirements	Poorer	Lack of forage and trees in private land;	Wellbeing
				Lack of alternative sources of energy.	
			Medium wellbeing households	Need more forage;	
				Mostly rely on traditional farming.	
		Users are forced to give-up traditional occupations	Goat farmers	Deprived of grazing access to forests;	Livelihood strategy
			Blacksmiths	Lack of compensation.	
2	Inadequate support	Ineffective IGA	Poorer, women	Negligible fund for IGA;	Wellbeing Gender
		Negligible skill/employment		Lack of skills and employments.	
3	Highlighted but inconsistently addressed	Lacking role in decision making	Women	Lack of leadership capacity	Gender
		Marginalisation	Dalit, women	Lack of awareness; lack of access to information.	
4	Fund reservation for IP	Incompatible to real agendas	CFUGs	No correlation between caste and forest dependency.	Ethnicity
		Marginalisation	Non- IP	Poorer of non-IP discriminated.	
			Within IP	Poorer within IP marginalized.	

Table 2: Criteria applied for household wellbeing ranking in the study CFUGs.

SSN	Wellbeing category	Criteria				Household number	
		Food security	Income	Physical assets	Social status	Birenchok	Gangate Bahune
1	Well-off	9–12 months	Regular (high)	Enough	High	23	7
2	Medium	6–9 months	Regular (low)	Limited	Medium	68	130
3	Poor	3–6 months	Labour (partial)	Inadequate	Low	57	65
4	Very poor	0–3 months	Labour (casual)	Inadequate	Low	20	30

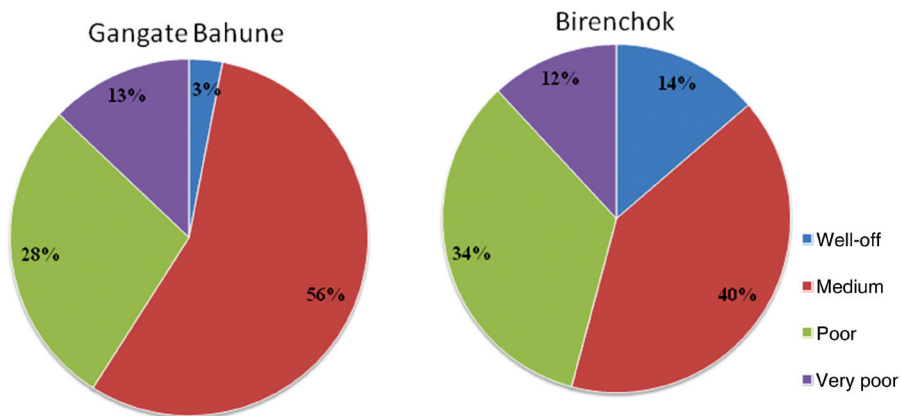


Figure 1: Users' wellbeing composition in the study CFUGs.

of obtaining required resources – firewood, fodder, timber and grazing in particular – from community forests because of the REDD+ pilot. Before the REDD+ pilot, users neither experienced short supply of firewood and fodder, nor was forest grazing restricted. Although tightened rules were applied equally for all, resulting outcomes were unequal. This research found that poorer households were affected comparatively more than any other households. There were two reasons for this: (i) they lacked private trees in their farmland to complement reduced supply from forests; and (ii) they were unable to afford alternative sources of cooking energy. Respondents from both visited communities and from district and policy level reported that poorer neither hold enough land to grow trees, nor are able to access alternative sources such as biogas, electric rice cookers and kerosene stoves. Richer (well-off & medium wellbeing categories) seemed to experience negligible effects, because they were growing trees in their private land, and were accessing alternative energy sources such as electricity and biogas.

Crop residuals (husk) emerged as an alternative for the poorer to meet energy gaps in their kitchens. Husk as an alternative to firewood has several negative implications, including reduced livestock feeding and crop productivity, and poor health due to high smoke in the kitchen. Husk has been one of the major sources of livestock feed during winter in Nepalese rural communities. One elderly farmer, a poor user from GangateBahune CFUG, reported that if the forest remains closed, as he has experienced since the REDD+ pilot started, he may lose his farm productions (both livestock and crop). Livestock not only supplies meat, milk and cash income, but also enhances crop productivity by producing manure. Due to the lack of private trees to complement reduced supply from forests, poorer respondents have no choice but to seek an alternative income strategy or to access the forest illegally. An executive committee member from GangateBahune CFUG

verified the potential risk of unauthorised access by users to their own community forests, also indicated leakage is likely to happen. Clarifying why poor users were likely to hamper REDD+ more than others, he commented:

*“.....people of low income, less educated and unskilled need forest more than others, and of course they are highly dependent on forests. Some of them have also been reported for being involved in illegal cutting in order to meet their household needs.....” (PG7).*

Because they have a supplementary resource supply from farm trees (private forests, woodlots), medium and well-off households appeared to have little concern about limited access to forest. One male participant (PB6) from a medium wellbeing category household in Birenchok argued that his family hardly uses firewood and fodder from the community forest, hence he has never experienced tightened rules and reduced supply. He has been using biogas for cooking for many years, and his private woodlots provide enough fodder and timber.

Household surveys undertaken in 61 households across the case study CFUGs show that level of dependence on forest resources is reduced as wellbeing increases (Figure 2). For very poor households, 81% of forest related resources come from community forests. Resource consumption derived from community forests is 73% for poor, 64% for medium and 54% for well-off households. Medium households source 32% of forest products needs from private trees, followed by poor (21%), well-off (18%) and very poor (9%).

‘Other sources’ for well-off and medium wellbeing households include biogas, electric heater, and cattle feed from market. However, for very poor and poor households, ‘other sources’ include husk, and forests other than their own community forest. The implication of this is that REDD+ is not changing poor people’s use of forest resources, just the source of those resources.

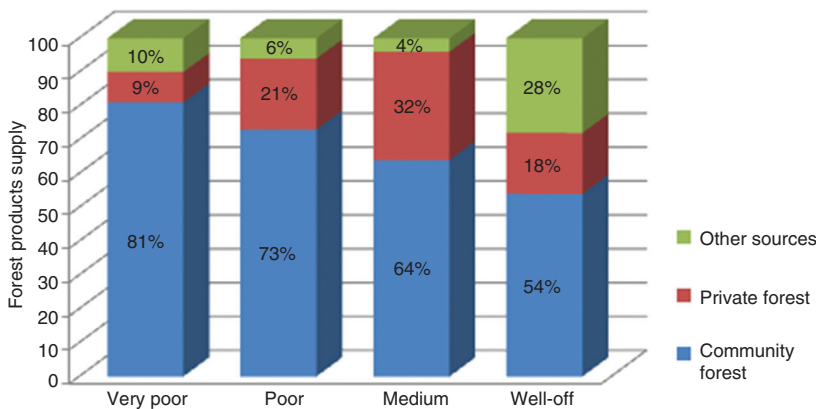


Figure 2: Sources of forest products to different wellbeing ranking households. (n=61).

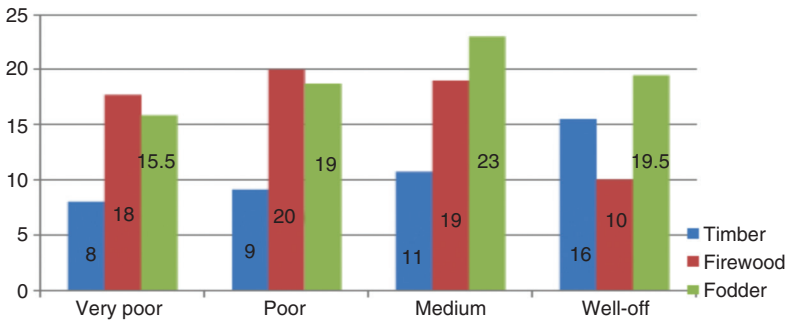


Figure 3: Average annual resource consumption by different wellbeing households in the case study CFUGs. (n=61, Timber cubic feet; Firewood & Fodder: 100 kg).

### 5.1.2. Concerns of medium wellbeing and bordering households were overlooked

This research found that although poorer relied more on forests (Figure 2), they in fact were not the highest resources consumers (in terms of volume). Although variations were not statistically significant, Figure 3 suggests that the very poor consume fewer resources than the medium wellbeing and bordering<sup>5</sup> households.

The main reason that medium wellbeing and bordering households consume forest based resources more than others, particularly poorer, was that they are highly engaged with farming activities. They not only hold more land than the poorer, they also raise more cattle. In the case study CFUGs, the average number of cattle holding by medium wellbeing category households was 7, followed by well-off, poor and very poor with 6, 5 and 4 respectively. However, the needs and interests of medium wellbeing and bordering households, which represent around 79% of the total households, were found to be overlooked by the REDD+ pilot. The REDD+ pilot focussed its activities (e.g. IGA, ICS, and skills development) on the poorer. How much the poorer have benefited is another issue, and will be discussed later in this section. The concern here is whether focussing only on poorer is sufficient to generate the anticipated multiple outcomes.

Research participants argued that focussing only on poorer is not enough to reduce livelihood dependency on forests. They suggested that addressing the needs and interests of other users, medium wellbeing and bordering households in particular, is equally important. Tree development, in farmland or outside forests, was found to be one of the concerns of these categories of users in the case study sites. As shown in Figure 2, private trees contribute substantially to resource supply. For example, medium wellbeing households meet 32% of their resources

<sup>5</sup> Bordering households refer to those who have many similarities in relation to food security and livelihood strategy with medium wellbeing households, but are categorised either into poor or well-off.

demand from private trees, followed by poor (21%), well-off (18%) and very poor (9%). Despite this, however, activities to promote private forests were not reported. In response to a question “why private forestry is missing in the piloting activities”, one committee member from Birenchok responded that the project has focussed on the poorest users, who are not interested in private forestry. According to him, poorer hold limited amounts of land, hence do not choose to plant trees in it. They believe that trees reduce the productivity of their limited land. Similar perceptions were reported from the district, as well as from policy level stakeholders. In summary, despite claiming to be a pro-poor approach, the REDD+ pilot failed to address the interests of the majority of users needing the highest volume of forest resources.

### 5.1.3. REDD+ supports to households varied as wellbeing status varied

This research found that REDD+ has changed the traditionally practiced ‘equal for all’ approach to benefit sharing, and applied an equitable approach focussing on poor, women and marginalized households. REDD+ has initially focussed on poorer households, while delivering benefits, including seed grants for Income Generating Activities (IGA), skills development, and other compensations such as Improved Cooking Stoves (ICS), though amounts and coverage of those supports were questionable in terms of their effectiveness.

IGA seed grants, that aimed to diversify local livelihood strategies and generate income opportunities, have been the major attraction for poorer households to engage with REDD+, despite the limited support provided. The REDD+ pilot targeted very poor wellbeing households for IGA. However, this rule was applied inconsistently across CFUGs. For example, by the end of 2012, the Birenchok CFUG had distributed 61.5% of the total seed grant received (i.e. \$US2380) to 13 very poor households. However this had not happened in GangateBahune. This CFUG not only allocated a smaller amount for IGA (i.e. 29% of \$US4066 received by the end of 2012), but also did not distribute seed grants to the targeted households on time. Only five households received IGA seed grants, ranging from US\$100 to 140, by the end of 2012.

In addition to the IGA seed grants, the REDD+ pilot has provided skills development training for Local Resource Persons (LRPs),<sup>6</sup> targeting women from poorer households. However, one out of two LRPs in Gangate Bahune were from well-off households, suggesting this CFUG failed to apply the pro-poor approach effectively. All LRPs in Birenchok were from poor and very poor households. One LRP for carbon monitoring from the Birenchok CFUG reported that she has been involved in carbon monitoring activities for at least a couple of weeks a year, and is getting some additional money. In addition to LRPs, the Birenchok CFUG

<sup>6</sup> Among seven LRPs (5 in Birenchok and 2 in GangateBahune) six were women (85%); four of these six (66%) were from poor wellbeing ranking households (66%).



has provided skills training for the poorer. Confirming REDD+ efforts to increase their skills and income, one very poor female participant from Birechok said:

*“...last year the committee organised two trainings, only for poor households. Trainings were about how women can support REDD+, while collecting forest products...” (PB3).*

Similarly, ICS support at subsidised rates, as a compensation for limiting access to firewood, has also been focussed on poorer households. However, not all ICS were fully subsidised.<sup>7</sup> Fifteen of 50 ICS (30%) distributed in Birechok in 2011 were fully subsidised; the rest were subsidised by 57% of the total initial cost (estimated cost: US\$10–12 for each ICS). Although poorer households were offered these subsidies first, they (both very poor & poor) only applied for fully subsidised ICS. The rest were taken by medium wellbeing households. Two possible reasons emerged for the limited interest of poorer households; either they lacked appropriate houses to set up an ICS; or were not able to pay even the subsidised price. As an example, one very poor Dalit woman reported that she didn't install even a fully subsidised ICS because of lack of space in her temporary house:

*“.....we (her family) don't have a permanent house yet and are planning to build in near future. We will get ICS after that.....” (PB5).*

Overall, the above analysis of data revealed three different ways in which rural households of different wellbeing status have experienced REDD+. First, the poorer, lacking alternative sources of forest resources, are affected the most by regulated access to forests. Second, the majority of households highly engaged with farming, but not categorised as very poor, have been neglected due to the pro-poor approach of the REDD+ pilot. Third, only a few poor households have received (negligible) compensation (mainly due to the limited funds available).

## 5.2. Gender

This research found that women have experienced REDD+ differently from their male counterparts. In addition to a special fund reservation (i.e. 15% of the total seed grant), women have been prioritised in the delivery of all types of benefits, including skills development. For example, if the number of households interested in and eligible for an IGA seed grant exceeded the budget limit, single women from poor and marginalized households were selected first. No such practices were reported before the implementation of the REDD+ pilot.

In Birechok CFUG, office records showed that three of five (60%) IGA seed grant recipients were women-headed households in 2012. Similarly, in 2011, four out of five (80%) in Birechok and two out of two (100%) LRPs in

<sup>7</sup> Full subsidy covers initial costs of material and LRP cost; it does not cover future costs of fixing and operating the stove, such as labour and maintenance costs.

GangateBahune CFUG were women. LRPs have been gaining casual employment, and hence generating income to complement the subsistence livelihoods of their families. In addition, REDD+ has promoted women to participate in social activities, including local REDD+ networks, savings and credit, and alcohol control. According to the Ludhikhola REDD+ project coordinator, women must comprise at least 50% of members in the network. One Dalit woman interviewed in Birechok CFUG reported that women have been encouraged to join regular meetings and discussions in recent years, though is not certain if they were invited to attend committee meetings before the REDD+ pilot. The Birechok CFUG office records show that activities related to awareness and skills development, particularly for women, have increased since the REDD+ pilot started. Three training programs, including LRP and two workshops only for women, were organised in 2011. One female interviewee reported that women are excited about the potential REDD+ benefits available to them, based on what they have been told to expect. She commented:

*“...many women, young in particular, have been really excited about REDD+ believing that it will provide them skills trainings and they will get employment in future...” (PB3).*

Participants from GangateBahune CFUG also confirmed increased involvement of women in different social activities in recent years, and they acknowledged that REDD+ has contributed to this. A female committee member, for example, reported increasing interest and involvement of women, not only in CF, but also in other social activities such as the women’s cooperative and alcohol control. According to her, gender disparity in the community was mainly a result of poor knowledge and lack of confidence among women. She argued that REDD+ activities, such as frequent meetings, discussions, exposure visits, and increased external visitors (e.g. project workers & researchers) enhanced women’s knowledge, including their confidence to deal with contemporary social issues like household violence and overuse of alcohol by their male counterparts.

However, despite REDD+ focussing on women in delivery of certain activities, women still experience discrimination. This was comparatively higher in GangateBahune CFUG, where women, Dalit women in particular, lacked proper information about REDD+ and its potential implications for them. While an educated woman committee member claimed that women are considered to be the primary beneficiaries of REDD+, the Dalit focus group meeting did not verify this claim. Most of the Dalit women, who should have received REDD+ benefits, IGA seed grants and ICS subsidies at least, were unaware of these benefits and of their eligibility to apply. None of the five IGA beneficiaries selected for 2011 were Dalit women. Both LRPs and women committee members in GangateBahune CFUG were educated and from higher caste. Women’s poor representation in committees also revealed that they have been deprived of influence in decision making. Not only were there fewer women representatives in the CFUG committees (33%

in Birenchok & 22% in GangateBahune), but also none of the key leadership positions in these committees were held by women.

### 5.3. Ethnicity

The REDD+ pilot considered ethnicity as one of the social criteria for distribution of REDD+ seed grants to CFUGs. Out of the total REDD+ benefits, a 25% share was allocated for Indigenous Population (IP), including Dalit. Poor and marginalized users from non-indigenous castes were not entitled to access this 25%, hence were experiencing REDD+ differently. The 25% fund reservation for IPs and Dalit was understood as a kind of racism by others. In particular, non-IP participants argued that social discrimination in the name of IP rights is baseless, because there is no correlation between ethnicity and forest dependency; neither are they neglected in the power structure. Table 3 illustrates that IPs were not only in the majority, but were also holding key positions in committees (i.e. both chairperson and secretary in GangateBahune and chairperson in Birenchok).

As well as other castes, some IPs and Dalit participants also reported their concerns about this racial discrimination. Overall, the majority of participants did not agree with the racial approach of benefit sharing. They argued that the provision of a racial quota, which is a kind of discrimination by caste, may not be a fair way to deal with traditionally existing inequities in society. One Dalit female participant from Birenchok CFUG commented, for example:

*“.....REDD+ should not discriminate households based on their caste, all poor should be treated equally.....” (PB3).*

One policy level participant (PA1), a research consultant, who undertook evaluation research in some piloting sites of REDD+, argued that the racial discrimination for the purpose of REDD+ benefit distribution could be counterproductive for both CF and REDD+. He indicated that if all poorer in neighbourhoods, are not treated equally and REDD+ continues with discrimination by caste, it may marginalize even more population. During an informal talk at a tea shop in the GangateBahune CFUG, a very poor non-IP villager asked the researcher if he is entitled to get a REDD+ seed grant. This question reveals a rumour that only IPs and Dalit are entitled to REDD+ benefits. The villager wanted to determine

Table 3: Power structure by social composition and total grant received by CFUGs.

CFUG	Forest area	Households				Committee members				Female population	Grant received (US\$)
		IP	Dalit	Total	Poor	IP	Dalit	Total	Female		
Birenchok	83 ha	98	33	169	77	7*	4	15	5	48.8%	3614
GangateBahune	113 ha	75	33	220	90	6**	1	9	2	52%	5826

Note: Poor include both very poor & poor wellbeing households; \* refers to chairperson;

\*\* refer to both chairperson & secretary.

whether the rumour that might have been disseminated across the village was true. Participants also indicated the likelihood of intra-caste marginalisation. For example, one committee member from Birenchok CFUG reported that all Dalit and IP households have been claiming their share from the 25%, regardless of their wellbeing.

However, one participant representing the Nepal Federation of Indigenous Nationalities (NEFIN) argued that indigenous communities are not equally capable of seizing opportunities, so they need a special reservation. His argument, however, did not match with the data presented in Table 3.

Such conflicting arguments did not appear in the case of reservation of benefits for Dalit. All research participants showed their sympathy with Dalit, and agreed that the Dalit community has been significantly marginalized in the study areas. Dalit participants from GangateBahune CFUG demanded additional support, as compensation for the discrimination they have traditionally faced. They supported the equity provision of the project guideline that provides special rights to Dalit households. Participants' overall perception was that some reservations for Dalit may be justified, but not others, at least in CF and related forestry regimes like REDD+.

However, in sum, a common perception was that a quota system for any caste, regardless of socio-economic status, may increase the marginalisation of poorer people. Well-off households falling within the indigenous ethnic criteria would hold equal rights, and are likely to seize opportunities.

#### **5.4. Livelihood strategies**

The REDD+ pilot affected households differentially, based on their livelihood strategies (i.e. occupations). In particular, traditional goat farmers and Blacksmiths have experienced REDD+ negatively compared to other households.

##### **5.4.1. Traditional goat herders were being displaced**

Although goat farming provides a complementary income to the majority of households, it has been one of the major sources of cash income for the poor. Perhaps for this reason, REDD+ has encouraged goat farming, by acknowledging it as an IGA. For example, more than 50% of the households who received IGA grants under the REDD+ project had used those grants to purchase goats. On the other hand, REDD+ discouraged goat farming by limiting forest grazing. Before REDD+, there were no grazing restrictions in community managed forests.

A member of the district level federation of the community forestry users (FECOFUN) reported that considering goat raising as an IGA, while simultaneously imposing grazing restrictions, are conflicting approaches. If REDD+ aims to promote goat farming, grazing control may not be possible. He argued that unless REDD+ introduces and supports an advanced approach (e.g. stall feeding and shed rearing), goat farming may not be beneficial to poor villagers. Advising against the provision of goats as an IGA, he commented:

*“.....a couple of goats would not change households’ livelihood strategy, rather it would increase their dependency on forest.....” (DS5).*

In particular, grazing control was found to be detrimental for traditional goat farmers, who have either already reduced or are going to reduce the size of their herd, so they can keep and feed a smaller number of goats at home. One participant (PB7) from Birenchok CFUG, who has been making most of his household earnings from goats, reported that he may no longer be able to hold more than one or two goats, because of recently imposed grazing restrictions in the community forest. Another participant (PG3) from GangateBahune identified a similar problem, saying that one of his neighbours, who used to rely on goat farming, recently sold all his goats and flew overseas for employment. He believed that the newly imposed grazing restriction was the major reason for this.

#### **5.4.2. Blacksmiths were at risk**

Blacksmiths (a particular group of Dalit known as Kami in Nepalese society) have been supporting local farming activities by making farming tools such as ploughs, axes, knives and shovels locally. Although Blacksmiths have suffered discrimination for socio economic reasons (e.g. lack of social respect, negligible income to sustain family, lack of skill transformation to new generation, and availability of tools in markets), REDD+ has further put them at risk by tightening wood supply for charcoal burning. Before the REDD+ pilot, Blacksmiths were allowed to collect more wood than other users, particularly for the purpose of charcoal burning.

A Blacksmith participant from GangateBahune site reported that he has been unable to obtain enough charcoal since the REDD+ pilot started. According to him, there were three Blacksmiths in the village, and all of them were running out of charcoal and losing their income. However, Blacksmiths in Birenchok were less affected than in GangateBahune, because they were accessing charcoal from markets. One committee member from Birenchok denied that REDD+ affected Blacksmiths, arguing that they prefer getting charcoal from the market because it is both easier and cheaper than the charcoal they produce locally (charcoal burning is a time consuming and laborious task). Cheaper charcoal mostly comes from India.

Overall, these examples illustrated that the REDD+ pilot has influenced some households differentially, based on their major occupation.

## **6. Discussions**

Preliminary outcomes from the REDD+ pilot (discussed at the beginning of the previous section) demonstrate both positive and negative influences of the REDD+ policy mechanism on livelihoods of forest dependent rural communities. Highlighted outcomes are consistent with previous studies globally (Phelps et al. 2010; Angelsen et al. 2012; Chhatre et al. 2012; Gurung and Setyowati 2012; Resosudarmo et al. 2012; RRI 2012; Robinson et al. 2013). Further to the literature

(e.g. Angelsen et al. 2012; Resosudarmo et al. 2012; Robinson et al. 2013) that envisaged REDD+ outcomes being largely based on generalized information from national if not sub national contexts, this research provides evidence of REDD+ influences at household level, and explains how equity concerns (i.e. procedural & distribution) are correlated with REDD+ outcomes.

The findings show that the REDD+ pilot in rural Nepal influenced households differentially, suggesting household wellbeing, gender, occupation and ethnicity as the major variables underpinning differential impacts. The unequal effects experienced by households suggest that REDD+ success is contingent with social equity in place. Experiences from similar conservation initiatives like ICDPs (Blom et al. 2010; Kelman 2013) were that, if macro-level social problems such as disparities between families, castes and other social groups within a community are neglected or not addressed properly, chances of generating inequitable outcomes are high.

Despite the flow of benefit streams towards poor households, the REDD+ pilot appeared to be more costly for the poorer than the better-off. For example, the very poor households were more reliant on forests for fuel wood and fodders than other wellbeing category households, and were less capable of accessing alternative livelihood resources, such as private trees and livestock for generation of biogas. The poorest also appeared incapable of obtaining fuels and foods from the market, to supplement the reduced supply from forests resulting from the REDD+ pilot. This finding is in line with Angelsen et al. (2014), who found significant differentiation in reliance on forest resources among income groups. They found poor households were more highly reliant on forests to meet their subsistence than better-off households.

However, the finding that poorer households were influenced the most revealed both positive and negative impacts, though gains (positive outcomes) were negligible in comparison to losses (negative outcomes). Positive outcomes included the poorer households being given priority when sharing benefits arising from the REDD+ pilot. For example, all of the IGA seed grant recipients were poor and marginalized households. However, local experience was that provided benefits were negligible in comparison with the costs the REDD+ has imposed on poorer households, by limiting customary rights of access to forest resources. One reason for low benefits is that the level and availability of incentive payments is very low. For example, the total annual budget available for IGA under the pilot in GangateBahune, where 41% out of 232 households were poor, was US\$362. This figure is one example of the reality that the REDD+ pilot provides inadequate compensation for poor users. Because of this limited budget, the CFUG committee decided that IGA seed grants would not exceed US\$160 to individual households, which meant that only a small number of households were able to receive a seed grant each year, and of an amount that was insufficient to start any effective IGA. The limited availability of incentive funds not only created disputes among committee members in the selection of beneficiaries, but also generated frustration among a majority of users, because so few households could be selected.



From the distributive equity perspective, distribution of costs and burdens resulting from REDD+ is inequitable to the poor. A likely implication is that poorer households, who lack access to alternative resources (private forest or biogas for example), are likely to be working harder or travelling further to access resources. Such a situation not only enhances vulnerability to food, income and other social insecurities, but also risks carbon displacement (leakage) (Angelsen et al. 2012; Chhatre et al. 2012; Neupane and Shrestha 2012). Although the poor-focussed benefit distribution seems to be intended to neutralise the inequitable costs to this group, it still lacks adequacy and equity for the poor. The limited IGA funding and other types of support (e.g. skills, ICS) were inadequate to compensate the losses, particularly by the poor, thus causing inequity. The GangateBahune case, where poor Dalit were deprived of seed grants, indicates that the beneficiary selection process was influenced by the interests of committee leaders, none of whom were Dalit. Decision making in the interests of leaders, local elites in particular, has often been reported to be unfair and inequitable for disadvantaged groups (AIPP and IWGIA 2012; Brown 2013; Poudel et al. 2014). These issues (i.e. inadequacy and inequity) suggest that the REDD+ safeguards delineated by the Cancun agreement (COP 16) have been neglected. REDD+ safeguards are procedures and approaches to be applied in order to ensure that REDD+ activities “do no harm” to people or the environment (Peskett and Todd 2013). The limited funds provided appear to be insufficient to avoid negative effects resulting from the REDD+ pilot (e.g. access restrictions). This confirms that the REDD+ pilot has failed to comply with the safeguard policy developed by the 16th COP in Cancun (UNFCCC 2011). The likely implication is that affected people, poor in particular, may not wish to obey REDD+ rules over the long term, suggesting the risk of emissions displacement.

REDD+ is likely to perpetuate the policy dilemma for which ICDPs were criticized. Robinson and Redford (2004) argued that ICDPs were not clear whether their focus was to be conservation or development. The REDD+ pilot also demonstrates this policy dilemma: whether the priority is to address poverty or to reduce livelihood dependency on forests. The pro-poor approach of benefit sharing, in the context of forest dependency largely rooted in farming activities, is an example of the policy dilemma. Although poverty and forestry are closely related, and addressing poverty is essential for avoiding emissions (World Bank 2008), focussing only on the very poor may not fully comply with REDD+ and its equity consideration in rural communities. Wunder (2008) argues that too much focus on poverty may distract REDD+ from its focus on environment. It is not surprising that farmers who hold more farmland and livestock consume more forest resources than those who either lack or hold less farmland (i.e. poorer). Despite this understanding being previously reported (Adhikari et al. 2004; Thoms 2008; Gautam 2009), the REDD+ pilot focussed only on the poorer, overlooking others.

The intention of this discussion is not to argue against the pro-poor approach. Rather, it is to highlight the lack of valid as well as equitable approaches for changing behaviour, and reducing forest dependency. Similar to Visseren-



Hamakers et al. (2012a,b), this research argues that failure to acknowledge and address farm and forestry linkages could be problematic for REDD+. Because of negligible farmland and reduced livestock holding capacity, the poor may be interested in obtaining immediate cash support (Pokharel et al. 2007) from REDD+, rather than in investing more money for changing farming practices. In order to minimize resources consumption (or forest dependency), REDD+ should be able to minimize forest based farming, either by providing resources from alternative sources (e.g. private forests and chemical manures) or by changing traditional subsistence strategy into more advanced farming approaches, such as agro-forestry. Consistently with Brown (2013) and Wunder (2008), this research emphasises that REDD+ should focus on identifying the underpinning reasons for forest dependency, and address them. By doing so, REDD+ may not only address the role of poverty in deforestation and forest degradation, but may also provide a valid framework for social equity, by addressing other reasons underpinning forest dependency, traditional farming for example.

The second variable contributing to differential experiences of the REDD+ pilot is gender. The finding that the REDD+ pilot sought to address gender disparities by prioritising women in the piloting process, including in the sharing of benefits, capacity building and income generating activities, suggests that REDD+ may be supporting gender equity. For example, most of the LRPs and seed grant recipients in the studied CFUGs were women. However, the findings showed that gender disparities still existed, and women still had far fewer opportunities arising from REDD+ compared to their male counterparts. This suggests that REDD+ may not be able to empower women adequately (overturn entrenched social attitudes), including equitable participation in decision making. For example, none of the women members in the study CFUGs held key positions (i.e. chairperson and secretary). This confirms that the REDD+ pilot was not adequately focussed on the procedural equity that could have empowered women to access decision making positions. This supports previous studies (i.e. Gurung and Setyowati 2012; WOCAN 2012) that argue that acknowledging women's rights and resources needs, and considering the roles they can play as leaders, participants and beneficiaries, are critical for REDD+ to be equitable and effective.

Further, the findings that women in Birenchok CFUG were involved in diverse activities (i.e. meetings, skills training, fire fighting, LRPs of different kinds and income generating activities) but not in GangateBahune, suggest REDD+ has little role in gender empowerment. Instead, existing cultural and social contexts might play a greater role in determining the extent of women's involvement in social activities like CFUGs. The fact that situations were different in two communities suggests that governance approaches (e.g. procedural equity) were underpinned by attitudes and behaviours of CFUG leaders. For example, Dalit women in GangateBahune reported that the committee has always been led by the local elite, who never wished women to be competent, so they do not need to share power with them. This suggests that acknowledging women's rights,

and considering the roles they can play, are not only critical but also challenging for REDD+'s aims of being equitable and effective. In addition to empowering women, REDD+ needs to change the elite dominating attitude prevailing in rural society. This view is consistent with Gurung and Setyowati (2012), who explained that domination by an elite group, male elite in particular, has always been detrimental for mainstreaming women into the CF process. Although changing traditional attitudes with limited time and resources is difficult (Brown 2013), the REDD+ pilot could have minimized gender disparities if more efforts were put in place, including more funds and equitable governance.

In particular, this article emphasises the importance of procedural equity in the REDD+ process for women and other disadvantaged groups, as this involves being listened to with respect, and having some degree of control over the decision-making procedure and resultant outcome (Mahanty et al. 2009). In line with McDermotta et al. (2011), this article argues that procedural equity is important to ensure distributional equity, because the distribution process may sometime ignore the causes and processes that construct inequity. Promoting procedural equity by instituting inclusive and participatory processes makes it possible to correct for unfair outcomes (McDermotta et al. 2011).

The third equity concern arising in this research is ethnicity. This research found that the REDD+ pilot affected CF users differently according to their ethnicity. For example, 25% of the REDD+ money was set aside for allocation to certain indigenous ethnicities including Dalit. The implication was that poor and women from non-indigenous households lacked access to this reserved benefit.

Although the intention appeared to be to maintain social equity (ICIMOD et al. 2011) the preferential allocation of REDD+ money to some castes was found to be opposed by some, on the grounds that it neglected social justice. This research found that households in rural communities have traditionally been living together and adapting similar farming strategies, regardless of their caste (the Blacksmith's case was an exception). This research did not find any differences between indigenous and non-indigenous households in regard to their engagement to and use of forest resources.

The findings suggest that the preferential allocation of REDD+ money to indigenous households was not a valid equity agenda in the case study sites. By using ethnicity as a benefit sharing criterion, adopted from ILO 169<sup>8</sup> (NEFIN 2010), the REDD+ pilot not only failed to address existing inequity in CFUGs, but also established a discriminatory culture. In the case where some households in neighbourhoods gain privilege on the basis of their caste or ethnicity, then poor or marginalized households of other castes may rightly feel discriminated against. Adopting a racial quota for benefit sharing not only neglects people of other castes, but also marginalizes the poor, by bundling them with richer households of their own caste.

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<sup>8</sup> The International Labour Organisation' convention number 169 held in 2000.

The question of why some users hold more rights than others, despite having similar attachments to forests since historical times, needs to be better clarified. This research did not find any valid justification for caste-based discrimination in the case study sites, because indigenous ethnicities living in the area were not marginalized. Instead, they were found to make up the majority of the local population, and were holding key decision making positions. In such a situation, discrimination according to ethnicity or caste may ultimately lead to social dispute and destabilise social harmony. This supports Khatri et al. (2012), who argued that racial discrimination in the name of equity in CF, particularly in Nepal, misrepresents the reality. Consistently with Khatri et al. (2012), this research argues that social inequity and marginalisation can be addressed more effectively by using other criteria, like level of dependency on forest resources. Level of forest dependency would result from a combination of occupation, wellbeing and gender variables described previously. From this research, there is no evidence to support the use of controversial criteria such as ethnicity, based on the structure of the case study communities, though it is possible that in some communities, ethnicity could be correlated with marginalisation. In the middle hills of Nepal, ethnicity does not define marginalisation. This article would suggest, therefore, that a more universal set of characteristics to consider in establishing target groups for discriminatory policies might be those factors that influence forest dependency and access to alternative resources, such as wellbeing, gender and occupation.

The fourth issue relating REDD+ with social equity concerns is occupation. The findings that some traditional occupations, like goat herders and Blacksmiths, were disproportionately affected by the REDD+ pilot, suggest that REDD+ effects may not be limited to only the poor and women. Most of the interviewed goat herders were about to be displaced, because of the introduction of restrictions to grazing in the forest. Similarly, Blacksmiths were also found to be affected more than others, regardless of their wellbeing category. Blacksmiths need regular access to forests for charcoal burning, yet under the REDD+ pilot, such access was no longer possible.

The specific concerns of Blacksmiths and goat farmers appeared to be unrecognized by committee leaders when developing the REDD+ pilot. As a result, the fund mobilising guidelines focussed on individual characteristics such as wellbeing, gender and ethnicity as the major criteria for the sharing of benefits arising from the pilot. This suggests that the REDD+ pilot lacked any process for consultation with, or equitable participation of, forest users from the beginning of its development. If any of the goat herders or Blacksmiths had been consulted prior to the project design, these issues could have been recognized and incorporated in the fund mobilising guidelines. This research found that Blacksmiths and goat herders did not receive any compensation for their losses. They were likely to either migrate from their traditional place, or to resist REDD+ and access resources illegally, suggesting likely failure for REDD+. The findings support Gautam (2009), who reported detrimental livelihood losses to sheep/goat herders in some CFUGs in the Upper Hilly region in Nepal.

The above explanation of the findings suggests that REDD+ could serve as an avenue for manipulation of some particularly vulnerable indigenous groups, resulting in their reduced engagement in forest utilization. This constitutes one of the reasons behind the failure of ICDPs. Kelman (2013) found that ICDPs neglected intra-community dynamics and inequality issues in project landscapes that in fact contributed to their failure. Blom et al. (2010) highlighted the need to fully understand livelihood heterogeneities in the project area, including likely implications of interventions for each individual portfolio of activities.

Differential effects and experiences discussed throughout this article justify the need for social safeguards, so that the REDD+ process can be equitable and beneficial for rural poor communities. As described previously in this section, REDD+ safeguards are designed to mitigate the potential negative impacts of REDD+ projects on the environment and community, which may include displacement, loss of livelihoods and possible conflicts caused by unequal distribution of and poor access to benefits from REDD-plus initiatives (Peskett and Todd 2013). Based on the differential experiences in different sites, this article argues for the need to develop REDD+ safeguards (e.g. indicators) at the community level, based on concerns from the household level. In line with the literature (Angelsen et al. 2012; AIPP and IWGIA 2012; Chhatre et al. 2012), this article argues that adequacy (of funds/incentives) and equity are extremely important criteria for REDD+ to be able to safeguard diverse rights, and to compensate for negative outcomes on an equitable basis.

## 7. Conclusion

This article discusses recent research that explored the experiences of REDD+ pilot projects in Nepal, and synthesised their potential livelihood implications, using the theoretical framework of social equity. The REDD+ pilot implemented through community forestry in rural areas has been experienced differentially by households, with these experiences correlated with household wellbeing, gender, ethnicity, and specific livelihood strategies. Despite applying a pro-poor approach to benefit sharing, the REDD+ pilot has affected poorer households the most, because the negative effects of tightened forest protection have outweighed the benefits provided for them. In order to ensure that REDD+ is effective and equitable, this article argues that poorer households deserve a greater share of the benefits, because REDD+ has put them under greater stress than wealthier households.

More focus on poorer households should not imply that other households in rural communities should be neglected. It is important to engage the wealthy and medium wellbeing households in the implementation of REDD+ projects, as these households tend to consume more forest resources than poorer households. Unless the existing forest resource-based farming practices are changed, reducing forest dependency and diversifying livelihood strategies are unlikely. Based on the experiences from the case study sites, REDD+ is unlikely to offer sufficient funds

to enable diverse and competing interests in rural communities to be addressed adequately and equitably.

The allocation of benefits in the case study sites was insufficient for women to take an active part in the REDD+ process. There needs to be greater effort to achieve procedural equity, so that women are encouraged and empowered to be involved in the governance processes that oversee REDD+ projects.

Adopting a generic (i.e. global, national) equity framework, without regard to the local context, could be counterproductive for both REDD+ and the established identity of community forestry in Nepalese society. For example, the racial approach of benefit sharing adopted by the REDD+ pilot was a mismatch to the context of the case study sites, which further marginalized disadvantaged households as a consequence. This research indicates that social equity is unlikely unless local communities define the safeguards and benefit sharing framework themselves, as generic frameworks do not necessarily acknowledge the specific issues of individual households. This article argues for the need for context specific REDD+ safeguards, in order to ensure that none of the interest groups (e.g. categories based on occupation, ethnicity, wellbeing and gender) are overlooked, and policy approaches are not mismatched with local realities.

Despite highlighting an important agenda, and generating hopes of delivering multiple benefits in an equitable manner, the REDD+ pilot projects appeared unable to achieve this goal for two key reasons. Firstly, the pilot projects provided insufficient funds to fully compensate for the livelihood losses incurred by the poorer households. Secondly, the pilot project failed to apply equitable governance at the local level, and instead relied on the good will of local leaders, rather than pursuing a deliberate strategy to achieve social equity. The findings from this research are consistent with those presented by Bolin and Tassa (2012), who concluded that, without changing the existing tendency for domination by elites at the local level, REDD+ (through community forestry in particular) is likely to be another forest governance regime with little prospect of changing the marginal status of disadvantaged groups within forest communities.

The longer term implications of the REDD+ pilot projects include:

- (i) poorer households will be affected more and will be more vulnerable to other stresses;
- (ii) traditional occupations, like goat herders and Blacksmiths, will be displaced without proper arrangements for substitutes; and
- (iii) CFUGs, poor and marginalized households in particular, will be frustrated to the extent that they may undermine the achievements of community forestry.

Nevertheless, this research also sheds light on the prospect that these potential negative impacts can be transformed into positive outcomes if adequate support (i.e. financial, governance and capacity building) is provided to communities, with leverage to apply their own safeguards and equity frameworks that specifically address context specific issues and underpinned equity concerns. It is hoped that

this research can inform the policy development process, so that REDD+ can be beneficial to local livelihoods and the global environment.

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