

# PEOPLE AND FORESTS

## Livelihoods and Governance Results from the Hariyo Ban Program Phase I



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### Citation

Please cite this report as: WWF Nepal. 2016. People and Forests: Livelihoods and governance results from the Hariyo Ban Program Phase I. WWF Nepal, Kathmandu, Nepal.

### Acknowledgements

This study was undertaken by a consultant team comprising: Teri Allendorf (team leader); Birendra Mahato and Sanjay Chaudhari, team co-coordinators; Pragya Poudel and Sandip Rijal (forest surveys and assistance with interviews); and Sabriti Chaudhari, Maya Rai, Abhilasha Sharma, and Amir Shrestha. Many community forest user group and community members generously gave their time while participating in the study. In the Hariyo Ban Program Judy Oglethorpe, Sandesh Hamal, and Jagadish Kuikel provided guidance on Hariyo Ban; Rajendra Lamichhane and Radhika KC provided data on the Program and the sites; and the Hariyo Ban and Terai Arc Landscape field staff in Kohalpur, Chitwan, and Pokhara provided help and guidance in choosing sites. The study was funded by the United States Agency for International Development Nepal Mission; special thanks go to Netra Sharma Sapkota and Bronwyn Llewellyn.

### Disclaimer

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of WWF and do not necessarily reflect the views of USAID or the United States Government.



# Executive Summary

## Objectives

The goal of this consultancy was to undertake a rapid assessment of the effectiveness of Hariyo Ban's livelihood and governance activities in improving the economic wellbeing of forest-dependent people, improving participatory forest management, and reducing unsustainable pressure on biodiversity. Specific objectives were:

1. To assess the effectiveness of the Hariyo Ban livelihood approaches in improving livelihoods of community members
2. To assess linkages between the Hariyo Ban livelihood approaches and changes in forest and biodiversity condition resulting from behavior change through livelihoods
3. To assess the effectiveness of Hariyo Ban's governance work in promoting more equitable benefit sharing and participation in forest management by women, poor, vulnerable and marginalized groups
4. To assess the effectiveness of Hariyo Ban's governance work in improving forest and biodiversity condition through forest management
5. To provide recommendations to improve the effectiveness of livelihoods and governance work for the benefit of the human beneficiaries and for forests and biodiversity

## Results

### Did Hariyo Ban livelihood activities improve livelihoods of community members, especially women, poor, and marginalized?

Hariyo Ban livelihood support increased the income of nearly half of the respondents who participated. We determined this both by asking people in general if their incomes had increased in the last few years and if their incomes had increased since receiving Hariyo Ban support. Those who received Hariyo Ban support were significantly more likely to say their income had increased than for those respondents who had not received Hariyo Ban support.

Of those who received Hariyo Ban support and said their income increased, the majority (84%) said their income changed a little and the rest said it changed a lot. People who had received loans through income generation activity (IGA) and livelihood improvement plan (LIP) support were most likely to report that it had changed a lot (19% and 17% respectively).

In addition, more than a third of respondents (36%) who received Hariyo Ban support said that it had helped them in non-economic ways, primarily through capacity-building and awareness, while a smaller percentage (14%) felt it had negatively impacted them, citing the difficulties of attending meetings, problems with livestock health, and poor design of livelihood activities.

### Did Hariyo Ban livelihood approaches change people's use of the forest and impact forest and biodiversity condition?

Of those who received livelihood support, half reported no change in their forest use. The remaining respondents were split between those who increased and those who decreased their use of the forest. The primary reason for increased use was to procure fodder for goats bought with Hariyo Ban support.

Of those respondents who received Hariyo Ban support and reported increased income from the support, 20% reported increased extraction from the community forest (CF), 48% reported no change, and 23% reported a decrease.

Respondents who received Hariyo Ban support enter the forest more frequently than those who did not receive support (although not significant). Of those respondents who received support, those who entered the forest more often were more likely to see an increased income. Of those who received support and whose use increased, it was primarily due to greater extraction of grass and fodder. Biogas and liquefied petroleum gas (LPG) were the primary reasons given by respondents for decreased use.



The Hariyo Ban program design assumes that if incomes increase, dependency on forest will decrease. Our results indicate that this assumption is false. Therefore, we do not expect to see a relationship between Hariyo Ban support and forest condition, and, indeed, we did not find a clear one. However, it is a very small sample size (n=21).

## Did Hariyo Ban's governance work promote more equitable benefit sharing and participation in forest management by women, poor, vulnerable and marginalized groups?

Although there is no baseline with which to compare, there are some indications that Hariyo Ban is promoting equitable benefit sharing and participation in forest management by women, poor, vulnerable and marginalized groups. We measured participation in forest management in four ways: involvement in community forest user group (CFUG) activities in general, attendance at annual general assembly meetings, participation in community forest executive committees, and participation in forest management activities.

### Community-level effectiveness

The majority of respondents perceive that their CFUG is governed well (82%) and that there is good benefit-sharing (81%). However, governance and benefit-sharing show community-level patterns, with some CFUGs performing very well according to people's perceptions and some performing less well. While we will not investigate this in much detail here, it would be interesting to delve more deeply into CFUG-level patterns.

### Gender

Women are as likely as men to perceive that there is good governance and benefit-sharing in their CFUG and women and men are equally likely to participate in CFUG activities in general, on the CF executive committee, and in attending annual general assemblies, but women do not participate as much in forest management activities. A key issue for women is that meetings and management activities are a burden in terms of their time.

### Caste/ethnicity

While there are differences in caste/ethnic categories' perceptions of benefit-sharing and governance, the marginalized groups are the most satisfied and the high caste (i.e. Bahun Chettri) are the least satisfied.

### Education

More people with no education perceived good governance but there was no difference in the perception of good benefit-sharing between those with no education and those with some education. People with none and some education were equally likely to participate in CFUG activities, annual general assemblies, and on the committee. However, people with some education were more likely to participate in forest management activities.

### Landholding

People with less land are more likely to perceive that benefit sharing is good but there are no differences in perceptions of good governance by landholding. People with more land are not more likely to participate in CFUG activities, but they are less likely to attend the annual general assembly and more likely to be on the CF executive committee and participate in forest management activities (although not significant).

### CF executive committee interviews

The majority (15 of 21) of the committees report having 33% or more representation of women on the committee. However, there is little evidence of more equitable benefit sharing through CFUG funds: only 10 committees (50%) report having special programs for women, poor, vulnerable and marginalized groups. Of those, only 3 reported having programs targeted at women. In most cases, the funds committed did not approach 35% as recommended in policy.

### CFUG participation and Hariyo Ban livelihood support

People who have received Hariyo Ban livelihood support are more likely to participate in CFUG activities, committee, and forest management, but not annual meetings. They are also more likely to perceive better governance and better benefit-sharing (although not significant). However, we do not know which came first: did greater involvement in the CFUG lead to more access to Hariyo Ban support or did Hariyo Ban support lead to more participation in CFUG activities?

## Did Hariyo Ban's governance work improve forest and biodiversity condition through improved forest management?

The majority of CF executive committees (15 of 21) report that they have improved their forest management activities since Hariyo Ban began working with their communities. Two committees report that the communities' awareness of good forest management has improved but has not translated into activities yet.

Many variables impact forest condition in addition to governance, which makes it difficult to capture impacts of governance, especially over the short time span of Hariyo Ban activities. For example, the riverine sites in this study were in poor condition although people perceived good governance. Thus, with our limited number of sites, we cannot discern a relationship between forest condition and perceptions of CFUG governance.

However, we can describe people's perceptions of their forest condition and its direction of change:

- More than two-thirds of respondents perceived that forest condition was improving. However, they were less sure about forest change since Hariyo Ban, with less than half reporting that forest condition has improved since Hariyo Ban.
- Respondents reported that wildlife has increased (although in some of the riverine forests, they report some decrease).
- About one-third of respondents reported that water has increased or improved, although almost two-thirds report there is less water now.

### Broom grass impact

We were only able to visit one leasehold broom grass site, which also had livelihood and governance activities. Of those surveyed, 23 people said their income had increased from broom grass; five said it stayed the same, 4 said they did not know. Eight households did not participate.

People reported that they made between 2,000 and 20,000 rupees/year from broom grass over the past four years since they began leasehold. 4,000-5,000 rupees seems to be the cut-off point for whether people perceive the increase is a little or a lot: people who made more than that said their income had increased a lot and those below said a little.

## Recommendations

Here we address the fifth objective of this study - to provide recommendations to improve the effectiveness of livelihoods and governance work for the human beneficiaries and for forests and biodiversity. First, we highlight some specific recommendations that arise out of the study results and discussion that pertain specifically to livelihood and governance activities as they are currently being implemented within Hariyo Ban. Second, we suggest some overarching recommendations regarding how Hariyo Ban might approach livelihoods and governance activities at the program level to make them more effective.

### Recommendations for livelihood and governance activities

The results and discussion above raises many specific issues and questions that, if addressed, would strengthen Hariyo Ban's livelihoods and governance activities as they are currently being implemented. While many of the discussion points are questions that remain to be answered, here some specific recommendations are presented that would strengthen activities at the site level.

#### Livelihoods:

- Avoid duplication of funds and activities of other projects within a site, or at least within households.
- Ensure that livelihood activities are contributing positively in some way to biodiversity conservation.
- Ensure that livelihood activities are not negatively impacting the environment or people.
- Increase or facilitate the environmental sustainability of livelihood activities already occurring, including activities being supported by other projects.
- Minimize the politicization of Hariyo Ban funds within communities.
- Practice better oversight of LIPs and IGAs at the individual level.

## Governance:

- Continue to revisit the forest management basics at each site and ensure they are in place – e.g. monitoring, sanctions, and no grazing.
- Make operational plans “living documents.”
- Track the impact (outcome) of governance activities on CFUGs’ ability to govern rather than tracking the completion of activities (outputs).
- Repeat and adapt governance activities for each CFUG as necessary to ensure impact.
- Develop governance approaches that will persist through elections and the consequent turnover of committee members.

## General program recommendations

### Have clear justification for site selection

There should be clear justification at the site level for Hariyo Ban investment. How will investment at the site contribute to Hariyo Ban goals? This touches on some core issues of site selection. What is the justification for working at sites with already good forest condition? Should Hariyo Ban consider only supporting activities at sites with poor forest condition?

### Have clear justification for site activities

There should be clear justification at the site level for Hariyo Ban activities. Good governance should be prioritized over livelihoods as it provides the foundation for good forest condition and biodiversity conservation. Livelihood activities should be used to support good forest management if and only if it is clear how they will contribute to mitigating threats to the forest and biodiversity.

#### Key questions:

- What are the threats at the site?
- What activities will mitigate the threats?
- Are all the basic good practices of forest management in place such as monitoring and sanctions? Has grazing been stopped?
- Is the CFUG fulfilling all community forest policy guidelines, such as providing resources to women, poor, and marginalized as required by policy? How can Hariyo Ban facilitate the CFUG to fulfill guidelines?
- Does the CFUG and the CF executive committee know and use their operational plan? How can Hariyo Ban support them to do so?
- Are community members motivated and engaged in forestry activities? Is Hariyo Ban supporting activities that increase or decrease motivation?

#### Key questions for livelihood activities:

- What are the possible social and ecological impacts of the livelihood activities?
- How will they contribute to better forest condition and biodiversity? Is the contribution direct or indirect?
- How might they negatively impact forest condition and biodiversity?
- How will they contribute to a stronger and more resilient community?
- How might they negatively impact the community?
- Does the community have the resources to make the activity socially and environmentally sustainable and effective? If not, what additional resources are needed?

### Track program outcomes

Track outcomes, not only outputs, at the site level so you know if your governance and livelihood strategies and activities are achieving Hariyo Ban goals of better forest management and biodiversity conservation. Currently, Hariyo Ban does not track any livelihood, governance, or forest condition outcomes. At minimum, forest condition should be monitored over time to determine if Hariyo Ban’s primary goal is being achieved.

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## Abbreviations, acronyms and terms

ACA	Annapurna Conservation Area
BZCFUG	Buffer Zone Community Forestry User Group
BZMC	Buffer Zone Management Council
BZUC	Buffer Zone Users Committee
CAMC	Conservation Area Management Committee
CARE	Cooperative for Assistance and Relief Everywhere
CF	Community Forest
CFCC	Community Forest Coordination Committee
CFOP	Community Forestry Operational Plan
CFUG	Community Forest User Group
CHAL	Chitwan-Annapurna Landscape
CLAC	Community Learning and Action Center
FECOFUN	Federation of Community Forest Users, Nepal
GCP	Global Conservation Program
GESI	Gender Equality and Social Inclusion
IGA	Income Generating Activity
Kamaiya	Bonded Laborer
LIP	Livelihood Improvement Plan
LPG	Liquefied Petroleum Gas
M&E	Monitoring and Evaluation
NA	Not Applicable
NGO	Non-Governmental Organization
NRM	Natural Resource Management
NTNC	National Trust for Nature Conservation
PA	Protected Area
PGA	Participatory Governance Assessment
PHPA	Public Hearing and Public Auditing
PWBR	Participatory Well-being Ranking
REDD+	Reducing Emissions from Deforestation and Forest Degradation
TAL	Terai Arc Landscape
USAID	US Agency for International Development
WWF	World Wildlife Fund



## Goal and objectives

The goal of this consultancy was to undertake a rapid assessment of the effectiveness of Hariyo Ban's livelihood and governance activities in improving the economic wellbeing of forest-dependent people, improving participatory forest management, and reducing unsustainable pressure on biodiversity (see Appendix 1 for Terms of Reference).

The following are the specific objectives:

1. To assess the effectiveness of the Hariyo Ban livelihood approaches (livelihood improvement plan, income generation activities, green enterprise, skill-based vocational training and ecotourism) in improving livelihoods of community members, with a special focus on women, poor, vulnerable and marginalized groups
2. To assess linkages between the Hariyo Ban livelihood approaches, and changes in forest and biodiversity condition resulting from behavior change through livelihoods, in four main types of forest tenure
3. To assess the effectiveness of Hariyo Ban's governance work in promoting more equitable benefit sharing and participation in forest management by women, poor, vulnerable and marginalized groups
4. To assess the effectiveness of Hariyo Ban's governance work in improving forest management, and hence changes in forest and biodiversity condition
5. To provide recommendations to improve the effectiveness of livelihoods and governance work for the benefit of the human beneficiaries and for forests and biodiversity in the two landscapes.

## Background

Hariyo Ban Program is a five-year USAID funded program aiming to reduce adverse impacts of climate change and threats to biodiversity. At the heart of Hariyo Ban lie three interwoven components – biodiversity conservation, payments for ecosystem services including reducing emissions from deforestation and forest degradation (REDD+), and climate change adaptation. The program has three cross cutting themes: livelihoods, governance, and gender equality and social inclusion (GESI).

The program is being implemented in two landscapes: the east-west Terai Arc Landscape (TAL), and the north-south Chitwan-Annapurna Landscape (CHAL). It is implemented by a consortium of four non-governmental organizations (NGOs) with diverse knowledge: World Wildlife Fund (WWF) as the prime lead partner with Cooperative for Assistance and Relief Everywhere (CARE), National Trust for Nature Conservation (NTNC) and the Federation of Community Forestry Users, Nepal (FECOFUN). The Government of Nepal is a key partner of the program, and forest-dependent communities are major beneficiaries. The Program also works in close partnership with a range of civil society organizations, academicians, research institutions and private sector operators.

## Livelihoods

The livelihoods theme supports the three major thematic components in Hariyo Ban Program. Poverty in forest dependent people is a root cause of a major threat to biodiversity conservation in Hariyo Ban landscapes: overharvesting of resources. Natural resources are key assets for the poor for their livelihoods, but in some places overharvesting of firewood, timber and other forest products is causing deforestation and degradation of forests, and keeping people in poverty where they have no other option but to continue over-extraction. If environmental degradation continues, they may have no option but to settle inside forests, resulting in encroachment (another major threat). In some places, overgrazing of livestock is also a threat. Uncontrolled forest fires are often started by people as part of livelihood activities (e.g. for access in forest, green bite for livestock, or by honey gatherers). Presence of people in the forest for livelihood activities may result in human-wildlife conflict, or conflict may occur when wild animals raid villages, livestock or crops, affecting people's security and livelihoods.

As a result of the heavy dependence of poor people on forests, the conservation and sustainable use of forest resources is almost impossible without reducing this dependence. And the economic empowerment of the poor and excluded is vital to increase their power and participation in local

governance institutions, as well as to help them to enhance resilience to climate variability and climate change and other shocks by building their capital and capacity.

In order to tackle the threats, Hariyo Ban Program identified the probable causal linkages through a series of results chains (these are contained in the Program's monitoring and evaluation (M&E) plan, and were developed following the WWF Programme Standards<sup>1</sup>). The results chains contain a set of assumptions about causal linkages between interventions and desired results. The program identified geographical areas with unsustainable pressure on forests, and worked with local people to promote alternative or more sustainable livelihoods, helping improve economic well-being.

The Hariyo Ban Program adopted five broad approaches to increase income of the forest dependent people, as well as reduce forest dependency. These are: i) Livelihood improvement plan (LIP) preparation and implementation support to ultra-poor forest dependent households for income generation activities. LIP institutionalized pro-poor initiative, realizing that economic empowerment of the poor and most vulnerable is key to increasing their power and participation in local governance institutions; ii) Vocational skill based training focused to ultra-poor and youths involved in forest conservation for their livelihood support to increase their motivation and continued commitment to conservation; iii) Global Conservation Program (GCP) approach through promotion of income generation activities (IGAs) such as agro-based and forest based opportunities and small-scale enterprise development promoted for forest dependent people's livelihoods. GCP approach focused on forest dependent people, not only ultra-poor households. This approach also included promotion of alternative energy and microcredit program; iv) Green enterprise development including block plantation of non-timber forest products and high value crops; and v) Ecotourism.

## Internal governance of local natural resource management groups

Internal governance of natural resource management (NRM) groups is a crosscutting theme that supports all three components of Hariyo Ban. Improving internal governance is critically important for enhancing the effectiveness of their role as custodians of natural resources and to ensure equitable benefit sharing amongst the group members, particularly the most marginalized. In addition, through practicing good governance themselves, the NRM groups and their networks can make the government line agencies' (public authorities') accountability effective. Hariyo Ban sees the process of improving governance of both NRM groups and government line agencies as a state-citizen interface that promotes democratic practices.

Hariyo Ban considers the following "domains of change" should be achieved for equitable and sustainable management of natural resources: (a) marginalized citizens including women, *Dalits*, marginalized *Janajatis* and other socially excluded groups are empowered (b) NRM group leaders are accountable to the members they represent (c) spaces for negotiation between decision makers and marginalized citizens are expanded, inclusive and effective. A range of complementary activities is implemented under the governance theme. Primary among them are community learning and action centers (CLACs), participatory governance assessment (PGA), participatory well-being ranking (PWBR), and public hearing and public auditing (PHPA). The new Community Forestry Guidelines, 2009 provide a legal framework for enhancing internal governance of NRM groups.

In addition, the program supports NRM groups to enhance their organizational capacity by providing group management and leadership training; training on financial management and record keeping; training on gender and social inclusion; and facilitating coordination and interaction with district-level government line agencies.

**Beneficiaries:** Hariyo Ban's livelihoods and governance work has a strong (though not exclusive) focus on poor, vulnerable and marginalized groups, and on women and youth. This is in recognition that poor and marginalized people are often the most dependent on forest resources, yet have least say in their management. In light of strong male out-migration for employment, forest management is going to fall increasingly to women in the future; they need to be empowered to play this role. And by involving youth, Hariyo Ban hopes to encourage them to stay and play an active role in forest management rather than migrating for work, and reduce pressure that they are exerting on forests by promoting alternative livelihoods. The study examined the effectiveness of working with these groups.

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<sup>1</sup> [http://wwwf.panda.org/what\\_we\\_do/how\\_we\\_work/programme\\_standards/](http://wwwf.panda.org/what_we_do/how_we_work/programme_standards/)



**Forest tenure:** Hariyo Ban has worked with local communities under five different types of forest tenure: conservation areas; buffer zones; community managed forest in corridors and river basins; leasehold forests; and protection forests. The consultancy looked at the Program's effectiveness in all types except protection forests.

## Literature review

### Livelihoods and forest outcomes: weak links

Meta-analyses of the relationship between forest condition and livelihoods have found that there is insufficient evidence to draw conclusions (Bowler et al. 2012; Roe et al. 2015). However, economic status does not predict forest condition – i.e. more poverty does not mean worse forest condition (Gibson et al. 2005). In other words, livelihood, or income-generating, activities tend to have weak links to environmental outcomes (Roe et al. 2015). These weak links are because livelihood activities indirectly impact environmental condition through intermediary variables (Salafsky et al. 2001). For example, more income can provide the time or the money to procure labor to extract more from the forest or it can allow people to substitute forest resources with other resources, such as the substitution of LPG for fuelwood. Less income may cause people to extract more from the forest for their daily needs or to resort to daily or wage labor that gives them less time to extract from the forest. This complicated relationship may be why many studies of livelihoods are inconclusive about the relationship with forest condition.

### Governance and forest outcomes: strong links

In contrast to livelihoods, governance has strong links to forest condition. The strong links are because differences in forest condition are linked to the institutions that restrict forest use (Hayes 2006). However, rather than the legal definition of protection that applies to a forest, it is the rules acknowledged and made by forest users that influence forest condition (Hayes 2006; Coleman 2009). For example, Gibson et al. (2005) find that rule enforcement is a significant predictor of forest condition (as perceived by user groups or professional forester) independent of the formal status of user groups, their dependency on forest, or their social capital.

Many studies of forest governance have been conducted in Nepal. Worldwide, 70% of studies on forest governance have occurred in Asia, and most of those were conducted in India and Nepal (Bowler et al. 2012). Thus, in this study, we can only briefly summarize some of the major findings from the large body of literature that is available about forest governance in Nepal. In a review of community forestry in India and Nepal, Shyamsundar & Ghate (2014) found that many variables may affect success of community forestry in South Asia, including user group size (small is good because members interact more and default less and mid-size may be better because there are more resources to invest in rule formation and enforcement and lower transaction costs); monitoring and enforcement; stakeholder benefits; and costs of community forests. Maharjan et al. (2009) found that CF is less important at improving poor people's lives than remittances and wages; the poorer get a larger percentage of their income from CF, but lower absolutely than rich and middle income households; the introduction of CF activities has increased the ability of poor households to generate cash income from CFs and other activities, such as from land provided by CFs for crops (e.g. ginger, turmeric) and soft loans from CFUG funds. They also found that the older and smaller the CFUG the better they are in terms of forest condition and governance.

## Methodology

The study used a stratified sampling approach, first selecting community forests and then individuals within the CFUGs. A team comprising one team leader (Allendorf), two co-leaders, six enumerators in the Terai districts and four in the hill districts conducted the activities. The team was trained and guided by Dr. Allendorf. Approximately one community forest was surveyed per day. The enumerators included two foresters who took turns each day to survey the community forest and its CFUG.

For each community forest, the team conducted three activities to address the study questions:

- 1) Focus group discussions with key community forest user committees and members conducted by team leader and one co-leader (Appendix 4);
- 2) Individual surveys of beneficiaries of the Hariyo Ban livelihoods activities within communities led by one co-leader and conducted by survey team (Appendix 5); and
- 3) Forest surveys conducted by the foresters (protocol in Appendix 6).

Including travel and meeting days, the team conducted 21 focus group interviews with CF executive committees and 702 individual surveys in 21 communities over 27 days (see Appendix 2 for itinerary and Appendix 3 for site maps).

## Community forest sampling

Given limited time and lack of suitable controls, the team sampled sites where they predicted they would see the most impact, i.e. the sites with the greatest chance of success. It was assumed these sites would be where Hariyo Ban had invested the most in livelihood and governance activities. Some sites had very little investment, and it was expected that at these sites with less investment, the chances of capturing Hariyo Ban impact would be less.

The following steps were taken in collaboration with the central Hariyo Ban team in Kathmandu and with field teams in the TAL (Kohalpur) and CHAL (Pokhara) to determine sites to be sampled:

Using the summary data file for activities implemented in each forest group, the team chose districts with highest intensity activity, meaning that both governance and livelihood activities had been conducted there. This yielded a list of 12 districts:

CHAL: Tanahu (leasehold & CFUG), Gorkha (conservation area management committee (CAMC) & CFUG), Lamjung (CFUG), Syangja (CFUG but recent), Kaski (CAMC & CFUG)

West TAL: Dang (CFUG), Banke (buffer zone users committee (BZUC) & CFUG), Bardia (BZUC & CFUG), Kailali (CFUG), Kanchanpur (BZUC & CFUG)

East TAL: Chitwan (BZUC, CFUG, and Protection Forest), Nawalparasi (BZUC & CFUG)

The team then chose districts from the list above to maximize intensity, coverage and types of tenure within a district. They removed Gorkha from the list of possible sites because of the earthquake, which affected the impact of Hariyo Ban livelihood activities, and because Manaslu Conservation Area sites could not be reached within the study time frame. Kaski was chosen because it is the only district where CAMCs could be sampled in the timeframe (in the Annapurna Conservation Area). Syangja was removed from the list of possible sites because activities there have not been as intensive as in other districts. Dang was eliminated because it was picked up late in TAL, has had no governance, and livelihood activities are relatively new. Although Kailali has had intensive investment by Hariyo Ban, it only has CFUGs and no protected areas; thus, Banke, which has two governance types, BZUCs and CFUGs, was chosen over Kailali. In CHAL the order of activity intensity was first Kaski, then Tanahu, and then Lamjung, so the team chose Kaski and Tanahu over Lamjung. Bardia and Kanchanpur have had most activities in western TAL. In Banke, activities in the BZUC are just starting so the team did not sample in the buffer zone, but CFUG activities are older. Nawalparasi had a small number of activities and less extensive coverage. This left a final list of districts from which to sample:

CHAL: Kaski and Tanahu

Western TAL: Banke, Bardia and Kanchanpur

Eastern TAL: Chitwan

The team made lists of forest groups within each district by tenure type, and selected groups where Hariyo Ban had maximized governance and livelihood activities. For governance, the number of activities completed out of a possible total of four is the measurement. For livelihoods, the team selected groups based on the percentage of people within one forest group impacted by livelihoods activities. For some tenure types such as CAMCs and BZUCs, where there were not enough groups with the full suite of governance activities, the team selected forest groups that have had at least one governance activity and maximized livelihood activities.

At meetings with staff in the field offices in TAL (Kohalpur and Tandi) and CHAL (Pokhara), the team reviewed the sites that maximized livelihood and governance activities. They decided to randomly sample for all tenure types to the extent possible, or base sampling on clusters that were accessible depending on their geographical location. In practice, when they went to the field in TAL, they were able to choose by intensity since sites are accessible by road in the selected districts. In CHAL, only some sites are accessible by road, limiting the sites they could choose given time constraints.

An additional note on the livelihood activities is that when the final sampling of sites in the Annapurna Conservation Area (ACA) occurred in the field office in Pokhara, the team learned that the ACA Project model did not have many sites that fit the livelihood sampling criteria they were using. Thus, they ended up sampling one site that had livelihood activities in the form of support to build small greenhouses for vegetables (“tunnels”) and one site that had no Hariyo Ban-supported livelihood activities at all (Ghandruk).

## Individual sampling

For the individual sampling, if more than 30 people had received livelihood benefits within a CFUG, the team randomly sampled from people who participated in livelihood activities. In most cases, the team used lists of names provided by Hariyo Ban, both central and field offices (particularly in CHAL). However, at some sites, they found so many discrepancies in the lists that they used lists provided to the team by the user committees. In cases where fewer than 30 individuals had received benefits, they surveyed as many beneficiaries as possible depending on their availability. After completing the beneficiary interviews, the team surveyed randomly from clusters of houses based on the number of houses in the community to reach a minimum of 30 interviews within a CFUG.

## Forest condition

It is difficult to make assessments of relative condition of forests (Lund et al. 2009). There are many confounding factors that impact forest use: history of land use, population density and development, distance to markets, biophysical forest characteristics, project support, and land use policies and practices. Other confounding variables include: time since CF handover, user group size, user group size/CF size, distance to road, type of forest, elevation/slope, and time since last renewal of the operation plan.

## Variables

The following table captures the primary variables of interest for each objective.

Variables	Individual measures	User group measures	Forester
<b>Livelihoods</b>	Benefits they perceive coming from community forestry? Problems?	What is working best for livelihoods? Which activities? What are obstacles?	Not applicable (NA)
Net economic gain	Income change (more, less, same), and why? Did CFUG activity help you or why not?		NA
Forest dependency	Items extracted from forest and dependency increased or decreased for each item over time	Percentage of need met for firewood, leaf litter, timber, fodder at CF level and change over time	NA
<b>Governance</b>	What is working best for governance? What are obstacles?	What is working best for governance? What are obstacles?	NA
More equitable benefit-sharing measures	What benefits do you get from CFUG? Is it equitable? Has it changed?	CFUG activities for poor and marginalized, amount distributed to community vs individuals, distributed to poor and marginalized, what activities	NA
Greater participation by women and marginalized	Do they participate in different user group activities (i.e. audits, annual meetings,	Number of women and marginalized on CF committees, # of meetings/year, % of members that participate, male and female names written in	NA

	management activities) and for how long?	CF constitution, age of current CFUG committee (time from last election)	
<b>Forest condition and trend</b>			
Improved forest management		Number and type of CF management activities, forest dependency, managed for what (multiple products and active, passive, timber-oriented, tourism, water), monitoring (frequent, sporadic etc.), # of rules (what products have rules and regulations (e.g. fodder, fuelwood, grazing, encroachment, timber), scope of operation plan (how many activities were they able to implement over each of the 5 years of community forest operational plan (CFOP), changes from old CFOP to new one	NA
Better forest and biodiversity condition	Perceptions of change overall, vegetation, and wildlife, water	Perceptions of change overall, vegetation, and wildlife, water User group ranking of forest condition (forest very abundant, somewhat abundant, about normal for this area, somewhat sparse, or very sparse)	Sampled plots for sapling and seedling regeneration and captured overall forest condition from operational plans; noted signs forest degradation.

## Analysis

Analysis consisted of cross tabulating key variables to explore relationships among the variables of interest. Outcome indicators used to measure the livelihoods, governance, and forest condition and trends are:

Livelihood impacts	Governance impacts	Forest condition and trend
Income change	Perceptions of benefit-sharing	Overall condition from CFOP
Forest dependency	Perceptions of governance	Seedling regeneration
	Participation in CFUGs	Sapling regeneration
	CFUG committee composition	Perceptions of forest condition
		Perceptions of forest change
		Perceptions of wildlife change
		Perceptions of water change
		Change in dependency on forest resources

## Results

The results presented here are based on the 702 individual surveys. A table summarizing results from the CF executive committee interviews can be found in Appendix 7.



## Effectiveness of the Hariyo Ban livelihood approaches in improving livelihoods of community members, especially women, poor, and marginalized

More women, non-Bahun/Chettri ethnic groups, uneducated people, and people with less land received Hariyo Ban livelihood support than others.

hbsupport	Female	Male	Total
Yes (n)	304	121	425
%	71.53	28.47	100.00

hbsupport	Bahun Chettri	Dalit	Hill group	Terai indigenous	Other	Total
Yes (n)	81	86	119	135	4	425
%	19.06	20.24	28.00	31.76	0.94	100.00

hbsupport	No or some education None	Some	Total
Yes	233	192	425
%	54.82	45.18	100.00

hbsupport	Land owned 0-0.14 he	0.141-0.3	0.341-0.6	0.68+ hec	Total
Yes	139	163	82	41	425
%	32.71	38.35	19.29	9.65	100.00

Hariyo Ban livelihood support increased the income of nearly half of the respondents who participated. This was determined both by asking people in general if their incomes had increased in the last few years and if their incomes had increased since receiving Hariyo Ban support. In both cases, those who received Hariyo Ban support were significantly more likely to say their income had increased than for those respondents who had not received Hariyo Ban support.

Income change of those who received Hariyo Ban support and those who did not:

hbsupport	Increased	incomechange Same	Decreased	Don't know	Total
Yes	202	163	52	8	425
%	47.53	38.35	12.24	1.88	100.00
No	91	142	35	9	277
%	32.85	51.26	12.64	3.25	100.00
Total	293	305	87	17	702
%	41.74	43.45	12.39	2.42	100.00

Income change after Hariyo Ban support:

hbsupport	Increased	incomechangehb Same	Decreased	Don't know	Total
Yes	253	122	14	36	425
%	59.53	28.71	3.29	8.47	100.00

Of those who received Hariyo Ban support and said their income increased, the majority (84%) said their income changed a little and the rest said it changed a lot. People who had received IGA and LIP support were most likely to report that it had changed a lot (19% and 17% respectively). While 50% of the individuals who had received skill-based training reported that their income increased a lot, as this was only 2 of 4 individuals this is too small a sample to know if this represents an overall pattern. While

the data are not presented here, the team would like to note that of those who received Hariyo Ban support and said their income decreased, the most common reason given by 40% of respondents was because of bad weather conditions for agricultural crops.

The study used a number of livelihood-support categories instead of combining them in order to provide more detailed information. For example, the IGAs used to buy spinning wheels for wool could have been included in the IGA category, but they were kept separate so it is clear that the majority of the IGA loans used for wool resulted in little income change. The team also chose to include individuals who may have received an IGA or LIP, but because of the lack of good records, they were not sure.

	incomehowmuch			Total
	Lot	Little	Don't know	
LIP	24 16.90	118 83.10	0 0.00	142 100.00
IGA	11 18.64	47 79.66	1 1.69	59 100.00
IGA (wool)	1 4.76	20 95.24	0 0.00	21 100.00
LAPA tunnels	0 0.00	13 100.00	0 0.00	13 100.00
Unknown (LIP or IGA)	0 0.00	8 100.00	0 0.00	8 100.00
Skill-based training	2 50.00	2 50.00	0 0.00	4 100.00
IGA and LIP	0 0.00	1 100.00	0 0.00	1 100.00
LIP and green enterprise	0 0.00	1 100.00	0 0.00	1 100.00
greenenterprise	0 0.00	1 100.00	0 0.00	1 100.00
Total	38 15.20	211 84.40	1 0.40	250 100.00

In addition, more than a third of respondents (36%) who received Hariyo Ban support said that it had helped them in non-economic ways while a smaller percentage (14%) felt it had negatively impacted them. The primary non-economic benefits were capacity-building and awareness. The primary negative impacts were having to attend meetings, disease and death of Hariyo Ban-supported livestock, and various other aspects of poor design of livelihood activities.

## Linkages between the Hariyo Ban livelihood approaches and changes in forest and biodiversity condition resulting from behavior change through livelihoods

Of those who received Hariyo Ban livelihood support, half reported no change in their forest use. The remaining respondents were split between those who increased and those who decreased their use of the forest. The primary reason for increased use was to procure fodder for goats bought with Hariyo Ban support. Respondents themselves saw the contradiction in this in terms of Hariyo Ban's goals.

hbsupport	useincdec			Total
	Increased	Same	Decreased	
Yes	75 17.69	215 50.71	86 20.28	48 11.32
No	5	118	19	135
				277

	1.81	42.60	6.86	48.74	100.00
Total	80	333	105	183	701
	11.41	47.50	14.98	26.11	100.00

Of those respondents who received Hariyo Ban support and reported increased income from the support, 20% reported increased extraction from the CF, 48% reported no change, and 23% reported a decrease.

incomechangeb	Increased	Same	Decreased	Don't know	Total
Increased	50	122	59	21	252
	19.84	48.41	23.41	8.33	100.00
Same	17	77	19	9	122
	13.93	63.11	15.57	7.38	100.00
Decreased	1	5	4	5	15
	6.67	33.33	26.67	33.33	100.00
Don't know	7	11	4	13	35
	20.00	31.43	11.43	37.14	100.00
Total	75	215	86	48	424
	17.69	50.71	20.28	11.32	100.00

Of those respondents who received Hariyo Ban support, those who entered the forest more often were more likely to see an increased income.

# of times enter forest per month	Increased	Same	Decreased	Don't know	Total
0-1	100	58	12	22	192
	52.08	30.21	6.25	11.46	100.00
>1-4	65	25	1	6	97
	67.01	25.77	1.03	6.19	100.00
>4-8	88	39	2	7	136
	64.71	28.68	1.47	5.15	100.00
Total	253	122	15	35	425
	59.53	28.71	3.53	8.24	100.00

Of those who received Hariyo Ban support and whose use increased, it was primarily due to greater extraction of grass and fodder. Biogas and LPG were the primary reasons given by respondents for decreased use.

usechangehowcode	Increased	Same	Decreased	Total
timber	1	0	1	2
	50.00	0.00	50.00	100.00
fuelwood	10	0	7	17
	58.82	0.00	41.18	100.00
grass/fodder	57	2	10	69
	82.61	2.90	14.49	100.00
thatch	1	0	0	1
	100.00	0.00	0.00	100.00
leaves for plates	3	0	1	4
	75.00	0.00	25.00	100.00
no time to go	1	0	19	20
	5.00	0.00	95.00	100.00

biogas/LPG	0	0	42	42
	0.00	0.00	100.00	100.00
have own resources	0	0	2	2
	0.00	0.00	100.00	100.00
improved cookstove	0	0	1	1
	0.00	0.00	100.00	100.00
Total	73	2	83	158
	46.20	1.27	52.53	100.00

In retrospect, it would have been useful to capture the livelihood activity in which people participated (goats, business, etc.) and hence to break down impacts by type of livelihood activity. Unfortunately, the team could not easily break down the results by the type of livelihood activity because of the inconsistency between the Hariyo Ban records and the actual funding use by individuals. However, even if the team had designed the survey to capture livelihood activity, the fact that people could be participating in livelihood activities from more than one project at the time of the survey or prior to Hariyo Ban participation would also have confounded these results.

In terms of differences among forest tenure type, Hariyo Ban-supported respondents' forest use increased more in CFUGs (18%) and in the one conservation area CF site where goats were supported (20%) and less in buffer zone community forest user groups (BZCFUGs) (14%). Forest use decreased more in BZCFUGs (31%) than in CFUGs (18%) and in the one CA site where Hariyo Ban supported goats (10%).

Type of governance	useincdec				Total
	Increased	Same	Decreased	Don't know	
CFUG	56	156	54	35	301
	18.60	51.83	17.94	11.63	100.00
BZCFUG	13	38	29	13	93
	13.98	40.86	31.18	13.98	100.00
CA	6	21	3	0	30
	20.00	70.00	10.00	0.00	100.00
Total	75	215	86	48	424
	17.69	50.71	20.28	11.32	100.00

The Hariyo Ban program design assumes that if incomes increase, dependency on forest will decrease. Survey results indicate that this assumption is false. Therefore, we do not expect to see a relationship between Hariyo Ban support and forest condition. However, if we look at the relationship between use change and forest condition, we see that people's use increased across all forest conditions, but people decreased their use most in forests with good condition. This appears to be because the livelihood activities undertaken in the forests in good condition were more mixed, meaning there was less emphasis on livestock and more on non-livestock activities (see Appendix 7), which caused people's extraction to decrease. It is not clear why forests in good condition tended to have more mixed activities than those that did not. It is important to note that decreased use because of Hariyo Ban activities is not the cause of the good forest condition because the forest condition was taken from forest operational plans, which in most cases were 3 or more years old, often pre-dating Hariyo Ban activities.

Forest condition overall	useincdec				Total
	Increased	Same	Decreased	Don't know	
good	26	70	47	15	158
	16.46	44.30	29.75	9.49	100.00
average	29	83	23	16	151
	19.21	54.97	15.23	10.60	100.00
poor	20	62	16	17	115
	17.39	53.91	13.91	14.78	100.00
Total	75	215	86	48	424
	17.69	50.71	20.28	11.32	100.00



Considering sapling regeneration condition, which is more an indicator of recent forest management, there seems to be no positive impact on sapling regeneration of Hariyo Ban livelihood activities. Forest in both good and poor condition had less extraction. However, the nature of the riverine forests, which are poor despite management activities, confounds this result.

Sapling   regenerati on	useincdec				Total
	Increased	Same	Decreased	Don't kno	
good	8 13.11	33 54.10	14 22.95	6 9.84	61 100.00
average	56 21.88	132 51.56	42 16.41	26 10.16	256 100.00
poor	11 10.28	50 46.73	30 28.04	16 14.95	107 100.00
Total	75 17.69	215 50.71	86 20.28	48 11.32	424 100.00

Considering seedling regeneration, those forests with the most decreased use have good seedling regeneration, and forests with poor seedling regeneration show equal amounts of increased and decreased use.

Seedling   regenerati on	useincdec				Total
	Increased	Same	Decreased	Don't kno	
good	38 20.00	78 41.05	55 28.95	19 10.00	190 100.00
average	21 16.28	80 62.02	15 11.63	13 10.08	129 100.00
poor	11 15.07	37 50.68	11 15.07	14 19.18	73 100.00
Total	70 17.86	195 49.74	81 20.66	46 11.73	392 100.00

## Effectiveness of Hariyo Ban's governance work in promoting more equitable benefit sharing and participation in forest management by women, poor, vulnerable and marginalized groups

Although there is no baseline with which to compare, there are some indications that Hariyo Ban is promoting equitable benefit sharing and participation in forest management by women, poor, vulnerable and marginalized groups. The team measured participation in forest management in four ways: involvement in CFUG activities in general, attendance at annual general assembly meetings, participation on the executive committee, and participation in forest management activities.

### Community-level effectiveness

The majority of respondents perceive that their CFUG is governed well (82%) and that there is good benefit-sharing (81%). However, governance and benefit-sharing show community-level patterns, with some CFUGs performing very well according to people's perceptions and some performing less well. While this is not investigated in much detail here, it would be interesting to delve more deeply into CFUG-level patterns.

Perceptions of good governance across CFUGs.

cfugname	Yes	No	Don't kno	Total
Aamdada Khodemoria CF	34	2	1	37

	91.89	5.41	2.70	100.00
Babukuwa CFUG	33 97.06	1 2.94	0 0.00	34 100.00
Banpala CF Sardikhola	28 84.85	3 9.09	2 6.06	33 100.00
Batabaran BZCFUG	25 80.65	6 19.35	0 0.00	31 100.00
Bheri Karnali CFUG	26 83.87	5 16.13	0 0.00	31 100.00
Bhumepujne Tisdhungae	31 100.00	0 0.00	0 0.00	31 100.00
Birsana Mahila BZCFUG	27 81.82	6 18.18	0 0.00	33 100.00
Brahmasthan BZCFUG	33 91.67	3 8.33	0 0.00	36 100.00
Ghandruk CAMC	28 80.00	5 14.29	2 5.71	35 100.00
Janahit Mahakali CFUG	28 84.85	4 12.12	1 3.03	33 100.00
Jumdanda Jhapri CFUG	27 84.38	2 6.25	3 9.38	32 100.00
Karmala BZCFUG	26 92.86	2 7.14	0 0.00	28 100.00
Laljipur CFUG	28 84.85	4 12.12	1 3.03	33 100.00
Lumle CAMC	20 52.63	11 28.95	7 18.42	38 100.00
Nawajyoti BZCFUG	20 55.56	16 44.44	0 0.00	36 100.00
Ranikhola CFUG	31 86.11	4 11.11	1 2.78	36 100.00
Sankati BZCFUG	28 93.33	2 6.67	0 0.00	30 100.00
Siddhababa CFUG	30 76.92	9 23.08	0 0.00	39 100.00
Siddhanath Baijanath CFUG	23 71.88	9 28.13	0 0.00	32 100.00
Taulibhanjyang CFUG	26 86.67	2 6.67	2 6.67	30 100.00
Thangkholha CFUG	24 70.59	9 26.47	1 2.94	34 100.00
Total	576 82.05	105 14.96	21 2.99	702 100.00

#### Perceptions of good benefit sharing across CFUGs

cfugname	Yes	No	Don't know	Total
Aamdada Khodemoria CF	34 91.89	1 2.70	2 5.41	37 100.00
Babukuwa CFUG	29 85.29	5 14.71	0 0.00	34 100.00

Banpala CF Sardikhola	29 87.88	1 3.03	3 9.09	33 100.00
Batabaran BZCFUG	25 80.65	6 19.35	0 0.00	31 100.00
Bheri Karnali CFUG	25 80.65	4 12.90	2 6.45	31 100.00
Bhumepujne Tisdhungae	31 100.00	0 0.00	0 0.00	31 100.00
Birsana Mahila BZCFUG	24 72.73	5 15.15	4 12.12	33 100.00
Brahmasthan BZCFUG	30 83.33	6 16.67	0 0.00	36 100.00
Gandruk CAMC	28 80.00	3 8.57	4 11.43	35 100.00
Janahit Mahakali CFUG	28 84.85	2 6.06	3 9.09	33 100.00
Jumdanda Jhapri CFUG	28 87.50	1 3.13	3 9.38	32 100.00
Karmala BZCFUG	23 82.14	4 14.29	1 3.57	28 100.00
Laljipur CFUG	26 78.79	2 6.06	5 15.15	33 100.00
Lumle CAMC	25 65.79	8 21.05	5 13.16	38 100.00
Nawajyoti BZCFUG	20 55.56	15 41.67	1 2.78	36 100.00
Ranikhola CFUG	28 80.00	7 20.00	0 0.00	35 100.00
Sankati BZCFUG	26 86.67	3 10.00	1 3.33	30 100.00
Siddhababa CFUG	26 68.42	10 26.32	2 5.26	38 100.00
Siddhanath Baijanath CFUG	26 81.25	5 15.63	1 3.13	32 100.00
Taulibhanjyang CFUG	28 93.33	1 3.33	1 3.33	30 100.00
Thangkhola CFUG	28 82.35	6 17.65	0 0.00	34 100.00
Total	567 81.00	95 13.57	38 5.43	700 100.00

## Gender

Women are as likely as men to perceive that there is good governance and benefit-sharing in their CFUG.

gender	cfuggovernance			Total
	Yes	No	Don't know	
Female	391 82.14	69 14.50	16 3.36	476 100.00
Male	185 81.86	36 15.93	5 2.21	226 100.00

Total	576	105	21	702
	82.05	14.96	2.99	100.00
gender	benefitsharing			Total
	Yes	No	Don't know	
Female	388	58	29	475
	81.68	12.21	6.11	100.00
Male	179	37	9	225
	79.56	16.44	4.00	100.00
Total	567	95	38	700
	81.00	13.57	5.43	100.00

Women and men are equally likely to participate in the CFUG activities. Women participate equally in terms of participating generally in CFUG activities, participating on the executive committee, and attending annual general assemblies, but do not participate as much in forest management activities. A key issue for women is that meetings and management activities are a burden in terms of their time.

gender	cfugactivities		Total
	Yes	No	
Female	433	42	475
	91.16	8.84	100.00
Male	210	16	226
	92.92	7.08	100.00
Total	643	58	701
	91.73	8.27	100.00

Pearson chi2(1) = 0.6268 Pr = 0.429

gender	cfugcommittee		Total
	Yes	No	
Female	50	380	430
	11.63	88.37	100.00
Male	22	179	201
	10.95	89.05	100.00
Total	72	559	631
	11.41	88.59	100.00

Pearson chi2(1) = 0.0631 Pr = 0.802

gender	cfugmeeting		Total
	Yes	No	
Female	411	42	453
	90.73	9.27	100.00
Male	199	17	216
	92.13	7.87	100.00
Total	610	59	669
	91.18	8.82	100.00

Pearson chi2(1) = 0.3571 Pr = 0.550

gender	cfugforestmanagement		Total
	Yes	No	
Female	136	311	447
	30.43	69.57	100.00
Male	90	124	214



	42.06	57.94	100.00
Total	226	435	661
	34.19	65.81	100.00

Pearson chi2(1) = 8.7008 Pr = 0.003

### Caste/ethnicity

While there are differences among caste/ethnic categories in perceptions of benefit-sharing and governance, the marginalized groups are the most satisfied and the Bahun Chettri are the least satisfied.

Perceptions of good governance by ethnicity.

ethnicitycat	Yes	No	Don't kno	Total
Bahun Chettri	114 74.51	36 23.53	3 1.96	153 100.00
Dalit	111 82.22	20 14.81	4 2.96	135 100.00
Hill group	179 84.83	20 9.48	12 5.69	211 100.00
Terai indigenous grou	172 84.73	29 14.29	2 0.99	203 100.00
Total	576 82.05	105 14.96	21 2.99	702 100.00

Perceptions of good benefit sharing by ethnicity

ethnicitycat	Yes	No	Don't kno	Total
Bahun Chettri	114 74.51	35 22.88	4 2.61	153 100.00
Dalit	114 84.44	16 11.85	5 3.70	135 100.00
Hill group	175 83.33	22 10.48	13 6.19	210 100.00
Terai indigenous grou	164 81.19	22 10.89	16 7.92	202 100.00
Total	567 81.00	95 13.57	38 5.43	700 100.00

We cannot compare caste/ethnic groups in terms of participation across the entire sample because it would be skewed by the composition of the communities.

### Education

More people with no education perceived good governance but there was no difference in the perception of good benefit sharing between those with no education and those with some education.

No or some education	cfuggovernance			Total
	Yes	No	Don't kno	
None	295 84.29	49 14.00	6 1.71	350 100.00
Some	281 79.83	56 15.91	15 4.26	352 100.00

Total	576	105	21	702
	82.05	14.96	2.99	100.00
No or some education	benefitsharing			Total
	Yes	No	Don't know	
None	283	42	23	348
	81.32	12.07	6.61	100.00
Some	284	53	15	352
	80.68	15.06	4.26	100.00
Total	567	95	38	700
	81.00	13.57	5.43	100.00

People with none and some education were equally likely to participate in CFUG activities, annual general assemblies, and on the committee. However, people with some education were more likely to participate in forest management activities.

No or some education	cfugactivities		Total
	Yes	No	
None	321	29	350
	91.71	8.29	100.00
Some	322	29	351
	91.74	8.26	100.00
Total	643	58	701
	91.73	8.27	100.00

Pearson chi2(1) = 0.0001 Pr = 0.991

No or some education	cfugmeeting		Total
	Yes	No	
None	307	28	335
	91.64	8.36	100.00
Some	303	31	334
	90.72	9.28	100.00
Total	610	59	669
	91.18	8.82	100.00

Pearson chi2(1) = 0.1773 Pr = 0.674

No or some education	cfugcommittee		Total
	Yes	No	
None	31	279	310
	10.00	90.00	100.00
Some	41	280	321
	12.77	87.23	100.00
Total	72	559	631
	11.41	88.59	100.00

Pearson chi2(1) = 1.1993 Pr = 0.273

No or some education	cfugforestmanagement		Total
	Yes	No	
None	100	226	326
	30.67	69.33	100.00

Some	126	209	335
	37.61	62.39	100.00
<hr/>			
Total	226	435	661
	34.19	65.81	100.00
<hr/>			
Pearson chi2(1) = 3.5336 Pr = 0.060			

## Landholding

People with less land are more likely to perceive that benefit sharing is good but there are no differences in perceptions of good governance by landholding.

Land owned	cfuggovernance			Total
	Yes	No	Don't kno	
0-0.14 hectares	190	38	3	231
	82.25	16.45	1.30	100.00
0.141-0.34 hectares	224	31	10	265
	84.53	11.70	3.77	100.00
0.341-0.68 hectares	112	23	6	141
	79.43	16.31	4.26	100.00
0.68+ hectares	50	13	2	65
	76.92	20.00	3.08	100.00
Total	576	105	21	702
	82.05	14.96	2.99	100.00

Land owned	benefitsharing			Total
	Yes	No	Don't kno	
0-0.14 hectares	194	31	6	231
	83.98	13.42	2.60	100.00
0.141-0.34 hectares	221	27	15	263
	84.03	10.27	5.70	100.00
0.341-0.68 hectares	105	23	13	141
	74.47	16.31	9.22	100.00
0.68+ hectares	47	14	4	65
	72.31	21.54	6.15	100.00
Total	567	95	38	700
	81.00	13.57	5.43	100.00

People with more land are not more likely to participate in CFUG activities, but they are less likely to attend the annual general assembly and more likely to be on the executive committee and participate in forest management activities (although not significant).

Land owned	cfugcommittee		Total
	Yes	No	
0-0.14 hectares	18	181	199
	9.05	90.95	100.00
0.141-0.34 hectares	24	219	243
	9.88	90.12	100.00
0.341-0.68 hectares	16	114	130
	12.31	87.69	100.00
0.68+ hectares	14	45	59
	23.73	76.27	100.00
Total	72	559	631
	11.41	88.59	100.00

Pearson chi2(3) = 10.6272 Pr = 0.014

Land owned	cfugmeeting		Total
	Yes	No	
0-0.14 hectares	199 91.71	18 8.29	217 100.00
0.141-0.34 hectares	238 93.70	16 6.30	254 100.00
0.341-0.68 hectares	118 86.13	19 13.87	137 100.00
0.68+ hectares	55 90.16	6 9.84	61 100.00
Total	610 91.18	59 8.82	669 100.00

Pearson chi2(3) = 6.5023 Pr = 0.090

Land owned	cfugforestmanagement		Total
	Yes	No	
0-0.14 hectares	64 30.62	145 69.38	209 100.00
0.141-0.34 hectares	87 34.52	165 65.48	252 100.00
0.341-0.68 hectares	47 34.56	89 65.44	136 100.00
0.68+ hectares	28 43.75	36 56.25	64 100.00
Total	226 34.19	435 65.81	661 100.00

Pearson chi2(3) = 3.8028 Pr = 0.284

### CF executive committee interviews

The majority (15 of 21) of the committees report having 33% or more representation of women on the committee. Ten executive committees had more women members in the current committee than in the previous one, while five had fewer women and four had the same number. Thus, the general trend is increasing representation of women but in half the committees the number is the same or decreasing. Of those that already had 33% on the previous committee (11), all still had at least 33% on the current committee. Four committees achieved 33% representation by women in the most recent election. One committee increased the number of women but did not reach 33% and one remained below 33% with no change.

There is little evidence of more equitable benefit sharing through CFUG funds: only 10 committees (50%) report having special programs for women, poor, vulnerable and marginalized groups. Of those, only 3 reported having programs targeted at women. In most cases, the funds committed to help women, poor, vulnerable, and marginalized did not approach 35% as recommended in policy.

### CFUG participation and Hariyo Ban livelihood support

People who have received Hariyo Ban livelihood support are more likely to participate in CFUG activities, committee, and forest management, but not annual meetings. They are also more likely to perceive better governance and better benefit-sharing (although not significant). However, we do not know which came first: did greater involvement in the CFUG lead to more access to Hariyo Ban support or did Hariyo Ban support lead to more participation in CFUG activities? Given that not all lowest-ranking households are able to benefit from the LIP loans until a series of loan rotations are completed that may take a year or two, or possibly more, it may be that households already more involved in CFUG activities may receive loans first.

hbsupport	cfugactivities		Total
	Yes	No	
Yes	401 94.58	23 5.42	424 100.00
No	242 87.36	35 12.64	277 100.00
Total	643 91.73	58 8.27	701 100.00

Pearson chi2(1) = 11.4788 Pr = 0.001

hbsupport	cfugcommittee		Total
	Yes	No	
Yes	54 13.95	333 86.05	387 100.00
No	18 7.38	226 92.62	244 100.00
Total	72 11.41	559 88.59	631 100.00

Pearson chi2(1) = 6.4028 Pr = 0.011

hbsupport	cfugforestmanagement		Total
	Yes	No	
Yes	163 40.15	243 59.85	406 100.00
No	63 24.71	192 75.29	255 100.00
Total	226 34.19	435 65.81	661 100.00

Pearson chi2(1) = 16.5986 Pr = 0.000

hbsupport	benefitsharing			Total
	Yes	No	Don't kno	
Yes	353 83.25	52 12.26	19 4.48	424 100.00
No	214 77.54	43 15.58	19 6.88	276 100.00
Total	567 81.00	95 13.57	38 5.43	700 100.00

hbsupport	cfuggovernance			Total
	Yes	No	Don't kno	
Yes	357 84.00	60 14.12	8 1.88	425 100.00
No	219 79.06	45 16.25	13 4.69	277 100.00
Total	576 82.05	105 14.96	21 2.99	702 100.00

## Effectiveness of Hariyo Ban's governance work in improving forest and biodiversity condition through forest management

The majority of CF executive committees (15 of 21) report that they have improved their forest management activities since Hariyo Ban began working with their communities, primarily through thinning and cleaning and improved planting and afforestation. Two committees report that the communities' awareness of good forest management has improved but has not translated into activities yet.

Many variables impact forest condition in addition to governance, which makes it difficult to capture impacts of governance, especially over the short time span of Hariyo Ban activities. For example, the riverine sites in this study were in poor condition although people perceived good governance. Thus, with our limited number of sites, we cannot discern a relationship between forest condition and perceptions of CFUG governance.

However, we can describe people's perceptions of their forest condition and its direction of change. More than two-thirds of respondents perceived that forest condition was improving.

forestcondition	Freq.	Percent	Cum.
Better	477	67.95	67.95
Normal	182	25.93	93.87
Worse	43	6.13	100.00
Total	702	100.00	

However, they were less sure about forest change since Hariyo Ban began, with less than half reporting that forest condition has improved since Hariyo Ban began.

forestchange since hb	Freq.	Percent	Cum.
Yes	296	42.29	42.29
No	235	33.57	75.86
Don't know	169	24.14	100.00
Total	700	100.00	

Respondents reported that wildlife has increased (although in some of the riverine forests, they report some decrease).

cfwildlife	Freq.	Percent	Cum.
Yes	496	70.66	70.66
No	128	18.23	88.89
Don't know	78	11.11	100.00
Total	702	100.00	

About one-third of respondents reported that water has increased or improved, although almost two-thirds report there is less water now.

cfwatermore or less	Freq.	Percent	Cum.
better or more water	77	36.49	36.49
less water	130	61.61	98.10
other water problems	4	1.90	100.00
Total	211	100.00	

## Broom grass impact

We were only able to visit one leasehold broom grass site, which also had livelihood and governance activities. They had six active groups with leasehold broom grass plots. Without exception, people said



that shifting cultivation in the community had stopped. Although our understanding prior to entering the community was that everyone participated in broom grass cultivation, we found during the survey process that some households did not. Eight individuals surveyed said that their household did not participate in broom grass cultivation.

Of the 29 individuals who participated in broom grass cultivation, 23 people said their income had increased, five said it stayed the same, and the remainder said they did not know. Of those whose income increased, they reported they made between 2,000 to 20,000 rupees per year from broom grass over the past four years since they began leasehold forestry. People told us that income from broom grass is variable from year to year depending on weather and rainfall. For example, people reported that last year they made more income because there was better rainfall than this year.

We found that 4,000-5,000 rupees seems to be the cut-off point for whether people perceive the increase to be a little or a lot: in general, people who made more than that said their income had increased a lot and those below said a little.

The integration of fodder grasses is an important component of broom grass success at this site. At the same time that people planted broom grass, they also planted other grasses (such as Napier) provided by the Agricultural Office, both in their own fields and with the broom grass. This has made fodder gathering much easier, especially for women who are the primary fodder gatherers. One man mentioned that it has freed women up to spend more time at home and given them time to help children get to school.

Group dynamics are important for broom grass success. One group said that when they coordinated to process the grass into brooms, rather than selling unprocessed, it increased their income a great deal, but the group is not able to coordinate sufficiently every year to do this. At a second broom grass site, that we were not able to visit because of landslides, talking over the phone with one of the chairmen, he reported that only 15 of 20-25 groups still exist because of group conflict and poor performance of broom grass.

## Additional results and thoughts

The following are some additional results and thoughts that do not necessarily directly relate to the objectives but which are relevant. Some of the issues were raised at the results presentations in Kathmandu and Pokhara (Appendix 8). The team has prefaced each issue with a question that the issue raises that they could not fully answer given the study parameters and goals.

### Which communities and to what extent do communities need additional sources of funds?

LIPs and IGAs seem to be an inexpensive source of additional funds in the community. The team did not ask systematically, but in some places they were told that IGAs and LIPs from Hariyo Ban are not as complicated as borrowing from their own savings groups or from cooperatives. Indeed, in many cases, people who used IGA and LIP funds to buy goats already had goats. Some people also reported using the loans to buy food and other necessities. In Sardikhola, for example, they have both women's and CFUG savings that are fairly substantial – and much greater than the Hariyo Ban funds available. In the case of the wool activity in Padampur, the women's cooperative also has a large sum of money.

### How well-thought out are the livelihood activities?

Many of the livelihood activities need more thought and better design. While they all have potential, they also all appear to have some shortcomings that Hariyo Ban did not seem to be addressing in a systematic way. People reported that often their goats or other livestock died because no vet technicians are available in their communities. They also said they did not always have enough fodder to support livestock. At one site, where they planted bananas as a green enterprise activity, all the bananas died and people were extremely angry about the loss of funds and crop land to an unsuccessful activity. At one site where Hariyo Ban and other donors were supporting pigs, the value of pigs was falling and the cost of pig food was rising because too many people were raising pigs. In terms of the wool spinning activity, people said the income was marginally useful but they were concerned about health impacts of the spinning. A bamboo/rattan training at one site was for rattan in a place where they had planted bamboo; while participants reported that the training was useful, it impacted a very small number of

people, as many people were currently working elsewhere in Nepal and India. The riverine sites also had issues with inappropriate species or high mortality of planted trees and other plants.

## Could Hariyo Ban provide technical support to communities to help them use their already-existing resources to more effectively implement livelihood activities?

As noted in the previous paragraph, livelihood activities are fraught with limitations and difficulties and there is a need for more innovation and technical support. To what extent might Hariyo Ban funds be more effective if they helped improve already-existing livelihood activities? There remains, as mentioned in the mid-term evaluation, a large opportunity to improve the technical side of the livelihood and forest management activities.

## Are the poor receiving the funds to the extent that Hariyo Ban expected?

We did not measure this, but it is clear that the poorest do not necessarily receive Hariyo Ban funds. At some sites, people from wealth rankings other than the lowest received LIPs. When we asked about this, the CF executive committee told us it is because the poorest do not have the capacity to use the funds.

## To what extent are funds being used in other ways?

Funds have also been used as cash payments by the committee in some communities, e.g. for flood relief, and have, at times, been politicized in that certain parties have representatives present when the payments are distributed. We were told by Hariyo Ban staff afterwards that Hariyo Ban did provide funds specifically for flood relief, and not as part of the LIP, so it may be confusion on the team's part. However, the individuals we were interviewing were people we were told had received loans for livelihood activities and, at least in some cases, those individuals reported that they had used loans from Hariyo Ban to purchase consumables that they had to repay. It may be that the distribution of funds from Hariyo Ban at times for relief and at times for livelihoods may confuse people as to the purpose of Hariyo Ban funds. Either way, there appears to be room for better oversight by Hariyo Ban and understanding by the community of how funds from Hariyo Ban are to be spent.

## To what extent do Hariyo Ban funds target users that pose a specific threat to the forest?

We found no evidence that funds are used to target households that pose a particular or significant threat to the forest. An additional issue is that in the protected area buffer zones and conservation areas livelihood activities are conducted primarily above the CF level, at the buffer zone management council and CAMC level, so the activities are not directly connected to the CFs (except for Sardikhola, which seems to be operating like a CFUG). In western TAL, this is also true of the IGAs, which are disbursed through cooperatives at the community forest coordination committee (CFCC) level. Thus, even if targeting were occurring, it would be difficult to implement in buffer zones, conservation areas, and through CFCCs as funds are disbursed distantly from the CFUGs, who are the managers and users of the forest.

## To what extent does Hariyo Ban funding duplicate other funding in communities?

We also saw communities where the IGA and LIP funds overlapped with funding from other projects. We saw cases where people received funds more than one time from different projects (or even the same one) for the same activity, such as goats. In some cases, people could not tell us if they had received Hariyo Ban funds for their activity or funds from elsewhere. In other cases, they could point at different goats they owned and tell us which project had funded which ones.

## Is conflict over Hariyo Ban funding an issue or part of practicing good governance?

LIPs, and maybe IGAs (it is not easy to distinguish the two when talking with people a community), can cause conflict in communities. CFUGs find it difficult to distribute in communities in ways that do not cause people to complain. If a CFUG has funds for only 10 LIPs and it has 20 households in the poorest group of the WBR, they have to choose which households to provide funds to first and explain and justify that some households will receive funds once the first set of loans are paid back. Also, households in the more well-off groups complain that they do not have access to Hariyo Ban funds.

## What is the relationship between politics and corruption in CFs?

We saw indications of both politicization and corruption of CFUGs and other forest institutions, such as CFCCs. However, it was difficult to separate the politics of parties from possible corruption. Neither is good for CFs as they both get in the way of good governance.

## What makes some governance activities more effective than others?

From the focus group discussions with the CF executive committees, it was clear that some governance activities implemented by Hariyo Ban are more understood by them than others. This seemed related to how concrete the activity is in terms of its outcome. For example, the team found that committees reported that PWBR is helpful because it tells them who is poor in their community and helps them think about whom to target in their different activities. The public audit also has a clear outcome of keeping users informed and the executive committees' transactions transparent. The PGA, also known as "spider", is not as concrete for people, with most groups reporting that they did not see a benefit from it. However, at least a few executive committees articulated that they learned their committees' strengths and weaknesses from the PGA, although, when asked, they were not necessarily able to describe how this helped them improve their performance. One executive committee member told the team that the PGA was helpful because it taught them the roles and responsibilities of each position on the committee. The idea of spaces for negotiation may be concrete, and the concept came up in interviews with executive committees when they talked about their needs, but committees do not seem to have much awareness of it yet. Training for treasurers in accounting is very concrete and useful, although people do not stay in their positions forever, and so the expertise has to be re-learned. One committee made the point that the trainings should not be just for them but also for users because at times the committee has a hard time explaining to their users what they have learned and how it is helpful. The team would also like to note that some activities are more effective than others not only because of the nature of the activity (i.e. the concreteness of its outcomes), but also because of the ability or readiness of the committee to understand and incorporate the lessons from them. It was clear during interviews that the capacity of committees varies a great deal.

## How can forest operational plans be better and more useful?

One clear indicator of an active CF executive committee is if members know their CFOP and if they reach for it and are able to find information in it when asked about aspects of their CF. The team found during the focus group discussions with executive committees that some know their CFOPs well while others do not know them at all. Some groups acknowledged that not knowing their CFOPs is their own weakness and one they should fix.

There are difficulties, however, for CFUGs in renewing their CFOPs. In one case, the forest ranger who was going to help one group write their new plan wanted to charge them 100,000 rupees. When they said they would need a receipt for such a large amount, the ranger was unwilling to give one, implying this was an unofficial payment. The committee decided to wait and ultimately wrote the new plan themselves at a cost of 20,000 rupees.

## How can the quality of women's and marginalized people's participation be improved?

Women and marginalized people have a hard time participating – the cost of their time is high and they are often used as “tokens.” The team heard stories of women who are chosen because they know nothing and just sign as they are told by the chair(man). There were also examples where the chair is a man but the other committee people who participated were women, and their interactions and discussion seemed genuine and active. There is a need to move past training women to speak their names and clap for each other and to move towards genuine involvement. One of the questions asked by Hariyo Ban staff about the results of this study is what it tells us about how to improve participation at the community level. Unfortunately, that was not one of the study's objectives. However, study results and staff perspectives highlight that more attention should be given to how to operationalize participation by women and minorities in the field.

## Discussion

### Livelihood issues of forest dependence and independence

The issue of what people's relationships with the forests in Nepal should be is a key one. Nepal's population and its natural resources cannot be completely delinked – people rely on the forest, water, air for their survival. The goal is to facilitate sustainable mutually beneficial relationships that sustain and conserve the environment and its biodiversity and provides people with the mechanisms and incentives to conserve their environment.

Livelihoods can be linked or delinked and there are pros and cons to each and limitations to each. Livelihood activities that are highly linked to the forest are those that rely on resources from the forest, such as fodder for livestock if people do not have sufficient fodder on their private lands, selling of fuelwood in the market, timber to build houses, and non-timber forest products for consumption or market. Less linked activities include agricultural activities, such as commercial crops, which still rely on a healthy environment (soil, water, etc.) but are not directly reliant on forest resources. Examples of delinked livelihoods are skill-based professions, such as mechanic, tailor, and business owner, which do not rely at all on the forest.

Increased linkages and dependencies, if done sustainably, can improve people's livelihoods and provide incentives for increased involvement in forest governance and management. Decreased dependencies, while reducing pressures on the forest, can also mean more consumption from elsewhere (which may be more unsustainable and/or place a greater overall burden on the environment broadly) and decreased interest in participating in local forest governance and management.

Thus, it is not obvious whether increasing or decreasing dependency on the forests is better. A key point to keep in mind is that the goal is to *decrease unsustainable extraction*, not extraction itself. However, there is no measure of sustainable or unsustainable forest extraction for timber, fuelwood, or grasses. Nepal's community forestry has worked, many say, because it has locked up the forest resources more conservatively than necessary. A key issue is: How can we measure sustainable extraction of timber, fuelwood, grasses, etc.? Of course, the definition of sustainable will vary depending on who is defining it and the management objectives.

### Improving livelihoods

In terms of Hariyo Ban, the project's objective to improve livelihoods is not clear. Being clear on the overall purpose of livelihood activities and the desired outcome of each type of livelihood activity is critical to implementing successful livelihood activities. In discussions with Hariyo Ban program staff and a review of Hariyo Ban publications, different outcomes are described. Is the objective of livelihood activities to:

- improve people's goodwill so that they will participate in forest governance and management?
- increase their economic resources so they are empowered to participate in forest management?

- decrease forest dependency across the corridor/buffer zone/conservation area in general?
- target ultra-poor households who are often (but not always) the most dependent on the forest for their daily needs?
- target those causing the greatest threats to the forest (who might be the very poor who sell firewood in the market or who might be the wealthy involved in timber smuggling)?

Because of the great support in Nepal for forests and conservation at the community level (e.g. see (Allendorf 2007)), activities should be moving toward the symbiotic end of the spectrum and away from entry, barter, and bridge, which seek to enlist people's participation in conservation in indirect and sometimes misleading and confusing ways. The team leader remembers 20 years ago when NTNC was working in Bardia National Park building a health post to gain people's trust and local community members asked, "What does the health post have to do with NTNC's desire to conserve the park?"

Other questions that arose in this study concerning livelihood activities:

- Does the activity provide a new option for communities or does it overlap with other projects?
- Can the community support the activity with their own resources, for example, through existing savings groups and microcredit?
- Does this activity increase people's dependence on the forest or decrease it?
- If it increases, is it sustainable or unsustainable?
- If not sustainable, can it be made sustainable? Can Hariyo Ban provide the resources necessary to make it sustainable (such as technical expertise to figure out carrying capacity of the forest or substitution of resources, such as fodder species planted on private land?)
- If it decreases forest dependency, will it decrease people's interest in participating in forest management? Is that good or bad for forest management? E.g. if poor people become less dependent on forest resources, such as fuelwood and fodder, for their daily needs, will it be the wealthy who remained interested in forest management because they can control timber extraction?

## Livelihood issues in terms of environment and community

Livelihood activities could also be analyzed in terms of pros and cons for communities and the environment in general. Even livelihood activities that do not depend directly on the forest can have environmental links and impacts. Some activities can strengthen people's relationship with their environment, such as grasses, fruit trees, etc., and others may weaken it.

Livelihoods can also be analyzed in terms of their impacts on the community. Some activities can strengthen people's relationships with their community, for example, people gaining technical expertise in areas that are needed in their communities, such as biogas maintenance and repair, vet technicians, and improved cook stove building. Other skills, such as wiring and mechanical, may pull people out of their communities and to more urban areas where these skills are more in demand.

Also, in terms of communities, the mechanisms for the livelihood activities sponsored by Hariyo Ban cause conflict within the community. At most sites there is not enough funding available for all households that are eligible and want to access Hariyo Ban funds to receive them concurrently. This means that some households must wait until loans are repaid and made available again to new households (i.e. revolving funds), often meaning a delay of 2-3 years for some households. In other cases, better-off households that are not strictly eligible for funds question why they do not have access. Both these situations are sources of conflict in some communities.

Questions that could be asked of livelihood activities:

- Is it environmentally-friendly? What are its impacts on the environment?
- Is it people-friendly? What are its impacts on humans (e.g. wool spinning)?
- Does the activity strengthen people's relationship with their communities or weaken it?
- Is the activity a source of conflict among CF members or between CF members and the CF executive committee?



## Livelihood innovations and risk

Because Hariyo Ban is a conservation program, it has a different niche than other projects when it comes to livelihood activities and may want to take a more innovative and risky approach. Given that the overall goal of Hariyo Ban is biodiversity conservation, Hariyo Ban may want to explore more innovative and environmentally-friendly activities. For example, a diversity of activities could be explored (such as from [http://pdf.usaid.gov/pdf\\_docs/Pnadt895.pdf](http://pdf.usaid.gov/pdf_docs/Pnadt895.pdf)) for their potential for income generation and environmental impact. Because new livelihood activities require some risk, especially for women, poor, and marginalized, Hariyo Ban funds could be used to help women and marginalized take risks safely and explore innovative livelihood activities.

## Livelihood activities, technical expertise, and the market chain

Whether supporting riskier or safer livelihood options, Hariyo Ban should facilitate or provide technical support to make those activities sustainable and more successful. For example, at many sites where goats and pigs were supported, veterinarian expertise was lacking and death of the livestock from disease was common. As part of skill-based training, local people could be supported to become vet technicians, open nurseries to provide fodder species for planting on private land, or produce fodder for sale. Other examples of technical expertise that could be developed within the community include maintenance and repair of biogas and making improved cook stoves.

In addition, more attention should be paid to developing the whole market chain for products, with an emphasis on capacity within the community. For example, leaf plates require a market that may take some time and effort to develop. In Bandipur, the leaf plates being made by Jumdanda CFUG cost significantly more than plastic so it will take some effort to develop the demand, and may include awareness-raising or even changes in the policies of Bandipur city, a tourism area, such as banning of plastic that would create demand for the leaf plates.

- How can Hariyo Ban assist to develop technical capacity within communities for livelihood activities?
- Has Hariyo Ban considered the whole market chain and can it provide the resources necessary to make the activity viable?
- How can Hariyo Ban help develop capacity within the community along the whole market chain?

## Livelihoods and goats

For livelihood activities that are less directly risky for community members and that individuals may already be doing, either on their own or with funds from other organizations, or for activities that may not contribute to a better environment or more sustainable forest management, Hariyo Ban may not want to support them directly. An example of a livelihood activity that fits this description is goats, which are not risky for people, which many projects are already supporting, and which increases people's dependence on forest products. Instead of supporting goats, Hariyo Ban may want to consider helping to make goat rearing more sustainable for people and the environment. It may be that Hariyo Ban finds that there are already plenty of goats in a community and/or that savings groups or other projects already have the funds to support goats for individuals. However, the community may lack the veterinarian expertise and the fodder resources (from their own fields or the forests) to keep the goats healthy. Hariyo Ban could provide the resources to make the goats sustainable and to increase profits from goats through better health care and more and higher quality sustainably produced fodder or other food as appropriate. Hariyo Ban could also help to determine the carrying capacity for stall feeding of grasses from the community forest and from private lands.

## Governance and forest management issues

Hariyo Ban governance activities should prioritize basic forest management activities that are known to contribute to better forest condition: monitoring and enforcement. The four Hariyo Ban governance activities currently prioritized contribute to better governance. However, they are higher-level process-oriented activities. In many places where Hariyo Ban is implementing these activities, key pieces of

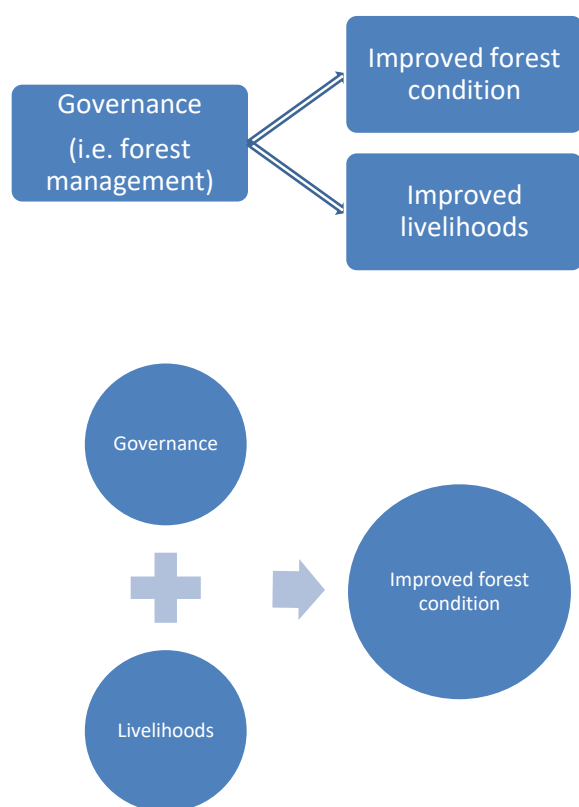


forest management are still not in place. Hariyo Ban governance activities may be more effective if they ensure certain governance pieces are in place, such as hiring of forest guards, creation and enforcement of rules and sanctions, and elimination of grazing, before proceeding on to more abstract activities.

## Governance and its contribution to livelihoods

Hariyo Ban should fully explore the potential of good forest management to contribute to livelihood goals. Governance not only impacts forest management and condition; it can also contribute to many of the goals Hariyo Ban hopes to achieve by improving livelihoods. Good governance can improve people's goodwill, help to provide more benefits to the poor from forests, and can mitigate threats to the forest, whether caused by poor or elite. At most sites, CFUGs are not yet dedicating 35% of their income to poor and marginalized. Hariyo Ban should support this requirement and facilitate a variety of pro-poor subsidies at sites (Ojha et al. 2009). It should also consider whether funds provided by Hariyo Ban to poor and ultra-poor for livelihood activities are replacing or distracting CFUGs from implementing their own pro-poor activities.

It may be helpful to think about two models that describe the relationship between forest condition and livelihoods and governance. The first one is adapted from Persha and Meshack (2015) and the second is the Hariyo Ban model.



These two models highlight different approaches to livelihoods and forest. In the first, improved livelihoods are a result of good governance and linkages between livelihoods and forests are strong. An emphasis on ensuring social and ecological sustainability of governance is important. Alternatively, governance and livelihoods can be conceptualized as parallel activities, but care should be given to make sure that weakening the linkages between people and the environment does not negatively impact forest through neglect or capture of benefits by others. For example, if livelihoods of poor are delinked from the forest, will they be invested in forest conservation and participate in forest management? There are pros and cons for both approaches. For example, during the fuel blockade last year, forests provided the fuelwood needed. Maybe instead of being a bad thing for conservation it is an indicator of the resiliency

of the country to absorb shocks through conservation of the environment. Also, the cutting of timber to rebuild houses damaged in the earthquake is another way that forest management increases the country's resiliency.

## Governance and operational plans

In the field, the team saw that some CF executive committees know their operational plans and can quickly go to the page with relevant information concerning a topic. Others appear to have never opened the document and say they do not know what is inside. More support to CFUGs to make operational plans a living document would be very beneficial. Also, support to write them so that they are useful and meaningful would also be a positive activity. Some CFUGs have had difficulty getting plans renewed because of a lack of support to write them.

## Governance and other types of activities

It may also be worthwhile to consider what activities are appropriate for CF executive committees to conduct. In some cases, the livelihood activities that are funded through CFUGs may not be appropriate given their governance capacity. It may be expecting too much from forest groups to not only manage the forest but also act as a lender for activities that are not directly connected to the forest. Expectations of CFUGs as a post-conflict example of good governance as highlighted in USAID's 2006 assessment of natural resource user groups and population, health, and the environment may need to be tempered with the reality of CFUGs' capacity (USAID 2006). Hariyo Ban activities should not detract from the CFUGs' primary goal – conservation and sustainable use of forest and natural resources.

## Outputs versus outcomes

There should be measures of outcomes for Hariyo Ban. At the CFUG level, there is no monitoring of forest condition or of any ecosystem variables, of threats to the sites, or even of people's use of natural resources at sites. The only data available for this study were outputs: a list of people who were beneficiaries of livelihoods activities (which was subject to error due to difficulty of maintaining up-to-date records) and the number of governance activities conducted at each site.

## Strategy for choosing activities and sites

As noted in the mid-term evaluation, the team found no strategy for site selection or activities at sites. It visited sites that had relatively high program investment but that did not seem like high priority sites for biodiversity conservation. For example, riverine sites along the western branch of the Karnali River do not appear to be part of a viable corridor. At the Indian border there is a break in the forest, a fence funded by Hariyo Ban to protect crops on the Nepal side, and a large forest area on the Nepal side that is completely developed inside. We also saw little adaptation of forest management strategies to address site-specific issues. For example, in the southern part of the Karnali riverine sites, the CFs are too small for CFUGs to manage effectively without cooperation from neighboring CFUGs (e.g. roads cut across them from one to another so fences are not possible and people are grazing livestock) and they do not have users living close enough to monitor the forests. In addition, is it appropriate to afforest riverine sites that were grasslands? Why not return them to natural grassland ecosystems? Some people told us they missed the useful grasses that had been there.

## Recommendations

Here we address the fifth objective of this study - to provide recommendations to improve the effectiveness of livelihoods and governance work for the benefit of the human beneficiaries and for forests and biodiversity. First, we highlight some specific recommendations that arise out of the study results and discussion that pertain specifically to livelihood and governance activities as they are currently being implemented within Hariyo Ban. Second, we suggest some overarching

recommendations regarding how Hariyo Ban might approach livelihoods and governance activities at the program level to make them more effective.

## Recommendations for livelihood and governance activities

The results and discussion above raises many specific issues and questions that, if addressed, would strengthen Hariyo Ban's livelihoods and governance activities as they are currently being implemented. While many of the discussion points are questions that remain to be answered, here we capture some of the specific recommendations that would strengthen activities at the site level.

### Livelihoods:

- Avoid duplication of funding and activities with other projects within a site, or at least within households.
- Ensure that livelihood activities are contributing positively in some way to biodiversity conservation.
- Ensure that livelihood activities are not negatively impacting the environment or people.
- Increase or facilitate the environmental sustainability of livelihood activities already occurring, including activities being supported by other projects.
- Minimize the politicization of Hariyo Ban funds within communities.
- Practice better oversight of LIPs and IGAs at the individual level.

### Governance:

- Continue to revisit the forest management basics at each site and ensure they are in place – e.g. monitoring, sanctions, and no grazing.
- Make operational plans “living documents.”
- Track the impact (outcome) of governance activities on CFUGs' ability to govern rather than tracking the completion of activities (outputs).
- Repeat and adapt governance activities for each CFUG as necessary to ensure impact.
- Develop governance approaches that will persist through elections and the consequent turnover of committee members.

## General program recommendations

### Have clear justification for site selection

There should be clear justification at the site level for Hariyo Ban investment. How will investment at the site contribute to Hariyo Ban goals? This touches on some core issues of site selection. What is the justification for working at sites with already good forest condition? Should Hariyo Ban consider only supporting activities at sites with poor forest condition?

### Have clear justification for site activities

There should be clear justification at the site level for Hariyo Ban activities. Good governance should be prioritized over livelihoods as it provides the foundation for good forest condition and biodiversity conservation. Livelihood activities should be used to support good forest management if and only if it is clear how they will contribute to mitigating threats to the forest and biodiversity.

### Key questions:

- What are the threats at the site?
- What activities will mitigate the threats?
- Are all the basic good practices of forest management in place such as monitoring and sanctions? Has grazing been stopped?
- Is the CFUG fulfilling all community forest policy guidelines, such as providing resources to women, poor, and marginalized as required by policy? How can Hariyo Ban facilitate the CFUG to fulfill guidelines?
- Does the CFUG and the CF executive committee know and use their operational plan? How can Hariyo Ban support them to do so?
- Are community members motivated and engaged in forestry activities? Is Hariyo Ban supporting activities that increase or decrease motivation?

### Key questions for livelihood activities:

- What are the possible social and ecological impacts of the livelihood activities?
- How will they contribute to better forest condition and biodiversity? Is the contribution direct or indirect?
- How might they negatively impact forest condition and biodiversity?
- How will they contribute to a stronger and more resilient community?
- How might they negatively impact the community?
- Does the community have the resources to make the activity socially and environmentally sustainable and effective? If not, what additional resources are needed?

### Track program outcomes

Track outcomes, not only outputs, at the site level so you know if your governance and livelihood strategies and activities are achieving Hariyo Ban goals of better forest management and biodiversity conservation. Currently, Hariyo Ban does not track any livelihood, governance, or forest condition outcomes. At minimum, forest condition should be monitored over time to determine if Hariyo Ban's primary goal is being achieved.

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# Appendixes

## Appendix 1. Terms of reference

### 1. General Background

Hariyo Ban Program is a five-year USAID funded program aiming to reduce adverse impacts of climate change and threats to biodiversity. At the heart of Hariyo Ban lie three interwoven components – biodiversity conservation, payments for ecosystem services including REDD+ and climate change adaptation. The program has three cross cutting themes: livelihoods governance, and gender and social inclusion (GESI).

The program is being implemented in two different landscapes: the east-west Terai Arc Landscape (TAL), and the north-south Chitwan-Annapurna Landscape (CHAL). It is a unique program implemented by consortium of four NGOs with diverse knowledge viz; World Wildlife Fund (WWF) as the prime lead partner with Cooperative for Assistance and Relief Everywhere (CARE), National Trust for Nature Conservation (NTNC) and the Federation of Community Forestry Users Nepal (FECOFUN). The Government of Nepal is a key partner of the program. Besides, the Program works in close partnership with a range of civil society organizations, academicians, research institutions and private sectors.

These terms of reference are for a consultancy to review outcomes and impacts of Hariyo Ban's livelihoods and governance cross-cutting components.

#### A. Livelihoods

The livelihoods theme supports the three major thematic components in Hariyo Ban Program. Poverty in forest dependent people is a root cause of a major threat to biodiversity conservation in Hariyo Ban landscapes: overharvesting of resources. Natural resources are key assets for the poor for their livelihoods, but in some places overharvesting of firewood, timber and other forest products is causing deforestation and degradation of forests, and keeping people in poverty where they have no other option but to continue over-extraction. If environmental degradation continues, they may have no option but to settle inside forests, resulting in encroachment (another major threat). In some places, overgrazing of livestock is also a threat. Uncontrolled forest fires are often started by people as part of livelihood activities (e.g. for access in forest, green bite for livestock, or by honey gatherers). Presence of people in the forest for livelihood activities may result in human-wildlife conflict, or conflict may occur when wild animals raid livestock or crops, affecting people's livelihoods.

As a result of the heavy dependence of poor people on forests, the conservation and sustainable use of forest resources is almost impossible without reducing this dependence. And the economic empowerment of the poor and excluded is vital to increase their power and participation in local governance institutions, as well as to help them to enhance resilience to climate variability and climate change and other shocks by building their capital and capacity.

In order to tackle the threats, Hariyo Ban Program identified the probable causal linkages through a series of results chains (these are contained in the Program's M&E plan, and were developed following the WWF Programme Standards<sup>2</sup>). The results chains contain a set of assumptions about causal linkages between interventions and desired results. The program identified geographical areas with unsustainable pressure on forests, and worked with local people to promote alternative or more sustainable livelihoods, helping improve economic well-being.

The consultancy should investigate the following assumptions for livelihoods:

- the livelihood activities were feasible and acceptable to the beneficiaries, who adopted them and improved their economic well-being
- the new activities had no adverse impacts on forests and other biodiversity, or if there was some impact it was less severe than that of the communities' previous activities
- the people were motivated to continue the new livelihood activities and stop or reduce the old ones, hence removing or at least reducing the unsustainable pressure
- Once the unsustainable pressure was reduced biodiversity could recover, either through active intervention (e.g. tree planting; control of livestock grazing) or through natural regeneration of forests and grassland, growth of wildlife populations, etc.

The Hariyo Ban Program adopted five broad approaches to increase income of the forest dependent people, as well as reduce

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<sup>2</sup> [http://wwf.panda.org/what\\_we\\_do/how\\_we\\_work/programme\\_standards/](http://wwf.panda.org/what_we_do/how_we_work/programme_standards/)

forest dependency. These are: i) Livelihood improvement plan (LIP) preparation and implementation support to ultra-poor forest dependent HHs for income generation activities. LIP institutionalized pro-poor initiative, realizing that economic empowerment of the poor and most vulnerable is key to increasing their power and participation in local governance institutions; ii) Vocational skill based training focused to ultra-poor and youths involved on forest conservation for their livelihood support to increase their motivation and continued commitment to conservation; iii) Global Conservation Program (GCP) approach through promotion of income generation activities such as agro-based and forest based opportunities and small-scale enterprise development promoted for forest dependent people's livelihoods. GCP approach focused on forest dependent people, not only ultra-poor households. This approach also included promotion of alternative energy and microcredit program; iv) Green enterprise development including block plantation of non-timber forest products and high value crops; and v) Ecotourism.

## **B. Internal governance of local natural resource management groups**

Internal governance of NRM groups is a crosscutting theme that supports all three components of Hariyo Ban. Improving internal governance is critically important for enhancing the effectiveness of their role as custodians of natural resources and to ensure equitable benefit sharing amongst the group members, particularly the most marginalized. In addition, through practicing good governance themselves, the NRM groups and their networks can make the government line agencies' (public authorities) accountability effective. Hariyo Ban sees the process of improving governance of both NRM groups and government line agencies as a state-citizen interface that promotes democratic practices.

The consultancy should investigate the following assumptions for internal governance:

- NRM groups, particularly women and members from marginalized segments of the community, understand the benefits of governance interventions such as representation of their voice, accountable and transparent leadership, influence in decision making and equitable benefit sharing.
- Improved governance helps NRM groups to make decisions on prudent and sustainable use of their forest based resources, including protection of forest and people from natural and climate induced disasters.
- Equitable benefit sharing helps group members to identify and invest in alternative livelihoods. This is particularly true for members with lowest well-being ranking who are heavily dependent on forest for their livelihoods.
- A transparent and accountable leadership puts interest of vulnerable people at the front and mobilizes internal and external resources in addressing climate and non-climate induced hazards/disasters.

Hariyo Ban considers the following "domains of change" should be achieved for equitable and sustainable management of natural resources: (a) marginalized citizens including women, *Dalits*, marginalized *Janajatis* and other socially excluded groups are empowered (b) NRM group leaders are accountable to the members they represent (c) spaces for negotiation between decision makers and marginalized citizens are expanded, inclusive and effective. A range of complementary activities is implemented under the governance theme. Primary among them are Community Learning and Action Centers (CLACs), Participatory Governance Assessment (PGA), Participatory Well-being Ranking (PWBR), and Public Hearing and Public Auditing (PHPA). The new Community Forestry Guidelines, 2009 provide a legal framework for enhancing internal governance of NRM groups.

In addition, the program also supports NRM groups to enhance their organizational capacity by providing group management and leadership training; training on financial management and record keeping; training on gender and social inclusion; and facilitating coordination and interaction with district-level government line agencies.

**Beneficiaries:** Hariyo Ban's livelihoods and governance work has a strong (though not exclusive) focus on poor, vulnerable and marginalized groups, and on women and youth. This is in recognition that poor and marginalized people are often the most dependent on forest resources, yet have least say in their management. In light of strong male out-migration for employment, forest management is going to fall increasingly to women in the future; they need to be empowered to play this role. And by involving youth, we hope both to encourage them to stay and play an active role in forest management rather than migrating for work, and reduce pressure that they are exerting on forests by promoting alternative livelihoods. The consultancy should examine the effectiveness of working with these groups.

**Forest tenure:** Hariyo Ban has worked with local communities under four different types of forest tenure: conservation areas; buffer zones; community managed forest in corridors and river basins; and leasehold forests. The consultancy will look at the Program's effectiveness in all four types.



## 2. Goal and objectives

The goal of this consultancy is to undertake a rapid assessment of the effectiveness of Hariyo Ban's livelihood and governance activities in improving the economic wellbeing of forest-dependent people, improving participatory forest management, and reducing unsustainable pressure on biodiversity.

The following are the specific objectives:

- To assess the effectiveness of the Hariyo Ban livelihood approaches (Livelihood improvement plan, Income generation activities, Green Enterprise, Skill based vocational training and ecotourism) in improving livelihoods of community members, with a special focus on women, poor, vulnerable and marginalized groups
- To assess linkages between the Hariyo Ban livelihood approaches, and changes in forest and biodiversity condition resulting from Behaviour change through livelihoods, in four main types of forest tenure
- To assess the effectiveness of Hariyo Ban's governance work in promoting more equitable benefit sharing and participation in forest management by women, poor, vulnerable and marginalized groups
- To assess the effectiveness of Hariyo Ban's governance work in improving forest management, and hence changes in forest and biodiversity condition
- To provide recommendations to improve the effectiveness of livelihoods and governance work for the benefit of the human beneficiaries and for forests and biodiversity in the two landscapes.

## 3. Study Methodology

The study will use the following approach:

1. **Literature review** of the effectiveness of livelihood support to NRM dependent communities, including in Nepal and other countries, and causal links with reducing unsustainable pressure on resources and ecosystems. Review of the effectiveness of community governance interventions in forest management, and their impacts on forest management and forest condition. Since there is such a vast literature in this field, the review should be limited to literature with greatest relevance to Nepal.
2. **Familiarization with Hariyo Ban Program:** The consultant should examine relevant sections of Hariyo Ban work plans and periodic reports, and meet with the Chief of Party, Livelihoods Specialist, Deputy Chief of Party, GESI Coordinator, and consortium partners to gain additional information. The consultant should also consult with the M&E team, and make use of relevant Hariyo Ban monitoring data.
3. **Inception report:** this will outline the approach to be adopted. It should include the tools to be used, and show how causal linkages will be investigated.
4. **Field surveys:** the consultant will discuss with the Hariyo Ban team the sampling methodology for the study, in order to cover four types of tenure; different types of livelihood and governance activities; and different ecological zones in the two landscapes. Methodology should include the following:
  - socio-economic surveys including questionnaires and focus group discussions to assess the effectiveness of the livelihoods interventions in bringing net economic benefits (producing quantitative results wherever possible)
  - socio-economic surveys including questionnaires, focus group discussions and review of community documentation to assess the effectiveness of governance interventions in promoting more equitable benefit sharing, and greater participation in forest management decision-making for poor, vulnerable and marginalized groups, and women
  - perception mapping to investigate community perceptions in the changes to natural resources, forests, wildlife and ecosystem functions/services as a result of the livelihood and governance interventions
  - rapid direct assessment of forests, grasslands, wetlands and agricultural lands for early signs of change as a result of the livelihood and governance interventions (note that since forest recovery takes time, there may only be proxy signs of forest recovery so far, but the team should look for early impact signs available using rapid assessment methods wherever possible – e.g. signs of natural regeneration).

The field surveys should be highly participatory, with involvement/consultation of the intended beneficiaries; Hariyo Ban partners involved in implementation; local resource people; and relevant government staff. This

includes: CFUG, BZUC and BZCFUGs, groups involving livelihoods improvement and bio-diversity conservation, Cooperative members, women groups (CLACs), Dalit groups, individuals such as district line agencies, Buffer Zone Management Councils, and User Committees, National Park personnel.

**5. Analysis and report writing:** the consultant will analyze the data, identifying:

- Effectiveness of different types of livelihood activity in bringing net economic gains to target beneficiaries
- Effectiveness of different types of livelihood activity in four main types of forest tenure
- Effectiveness of livelihoods interventions in improving forest/biodiversity condition
- Effectiveness of governance interventions in promoting more equitable benefit sharing, and improved participation in forest management
- Effectiveness of governance interventions in improving forest management and forest/biodiversity condition
- Barriers to achieving desired outcomes and impacts
- The influence of forest tenure, type of ecological zone and other significant factors on success
- Recommendations to improve effectiveness in the future

The consultant will prepare a draft report with a brief literature review, background, study approach, results of the analysis, and recommendations. Photographs of Program outcomes and impacts should be included in the report as feasible. It should contain the TOR, survey instruments, workshop proceedings, and list of people consulted as annexes. Excluding annexes the report should not exceed 70 pages, including an executive summary of no more than 4 pages.

**6. Consultation workshops and report finalization:** these should be held at field level (likely one in each landscape) and one at central level to present draft results and obtain feedback from stakeholders and beneficiary representatives. The feedback and comments from reviewers of the draft report will then be incorporated into the final report.

**4. Deliverables**

Deliverable	Due date
Inception report outlining study approach including survey instruments	10 days after start
Draft technical report	16 weeks after start
3 consultation workshops at field and central level to present results	17 weeks after start
Final technical report	18 weeks after start
Photographs and other materials collected during the study	18 weeks after start
Financial report	18 weeks after start

**5. Time frame**

Activity	Months					Remarks
	1	2	3	4	5	
Discussion with Hariyo Ban Program Team						1 Day
Literature Review and questionnaire preparation						7 Days
Inception report with study methodology, to be agreed with Hariyo Ban team						3 Days
Field surveys/stakeholder workshop including travel						40 Days
Analysis; draft report preparation						10 Days
Draft report presentation						4 Days
Report finalization						5 Days

**6. Supervision**

The consultant will report to Judy Oglethorpe, Chief of Party, Hariyo Ban Program. He/she will coordinate closely with Jagadish Kuikel, Livelihoods Specialist on the livelihoods work, and with Sandesh Hamal, Deputy Chief of Party and Sabitra

Dhakal, GESI Coordinator, on the governance work. The consultant will work closely with other members of the Hariyo Ban core team, and with the Hariyo Ban consortium partners (WWF, CARE, FECOFUN and NTNC).

## **7. Roles and Responsibilities**

### **Hariyo Ban Program Team**

- Hariyo Ban Program team will support coordination with stakeholders to organize consultation workshops in the field and Kathmandu, and will make introductions for the team to the communities.

### **Consultant**

- Consultant responsible for organizing all logistics and travel for the field team, including the field surveys.

## **8. Study Team**

The team should have the following skills, experience and expertise:

- Socio-economic qualification at least at masters level, with good research track record in community forestry, livelihoods, and local forest governance in Nepal
- Biodiversity / forest management qualification with good understanding of Nepal forest dynamics and community forest management
- Strong analytical skills
- Experienced team leader with at least 8 years' relevant experience; experienced field assistants
- Good spoken Nepali; excellent English speaking and writing skills

## Appendix 2. Itinerary

### Summary of itinerary:

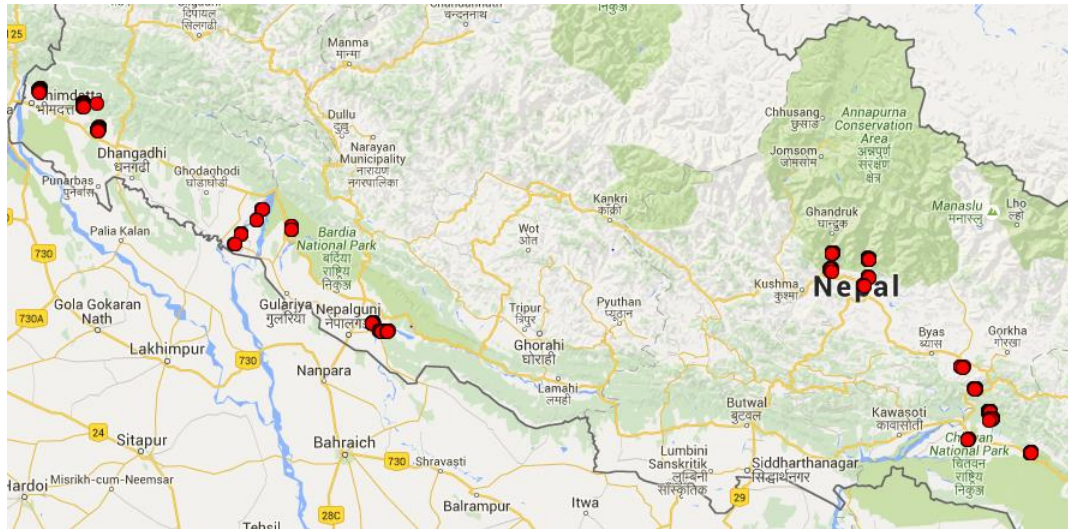
Teri met with WWF Hariyo Ban team April 29 (Friday)  
Team training May 2-3 (2 days)  
In the field at terai sites May 4-21 (18 days)  
In the field at hill sites May 24-June 1 (9 days)  
Summarize data and draft of report June 4-7 (4 days)  
Workshops June 8 in Kathmandu and June 10 in Pokhara (3 days)

### Detailed itinerary:

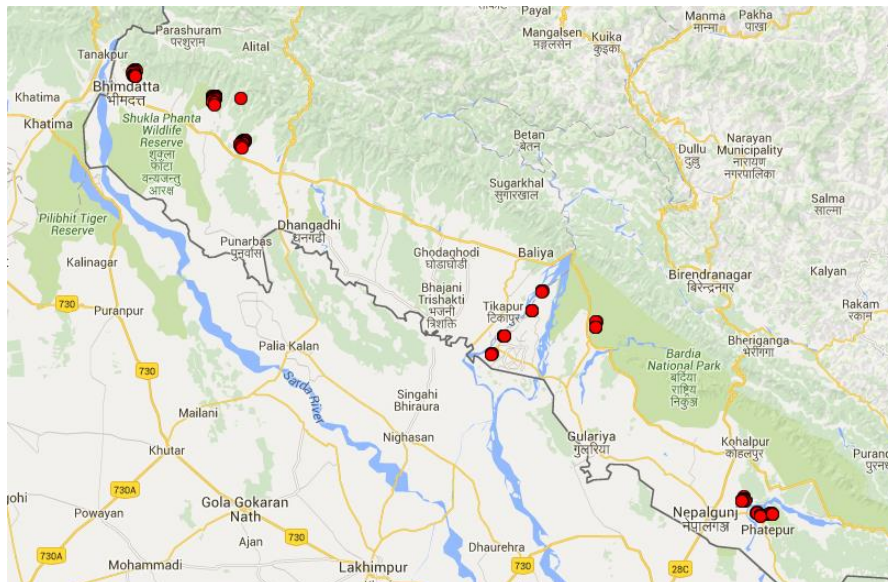
May 4 drive to Kohalpur  
May 5 meeting at WWF 10:30-1 in Kohalpur office. In the afternoon, 2-5 pm, survey practice in Jalandhara CFUG, Naya Gau, Mahadevpur.  
May 6-7 Banke  
    May 6 Babukuwa CFUG  
    May 7 Siddhanath Baijnath CFUG  
May 8-11 Bardia  
    May 8 Laljipur CFUG  
    May 9 Bheri Karnali CFUG  
    May 10 met with Patabhar BZUC and surveyed Sankatti BZCFUG  
    May 11 Birsana Mahila BZCFUG forest of Patabhar  
May 12-15 Kanchanpur  
    May 12 Batabaran BZCFUG under Sun Devi BZUC  
    May 13 Siddhanath Baijnath CFUG  
    May 14 Janahit Mahakali CFUG  
May 15 clean data and drive to Budhigau for Karmala  
May 16 Karmala BZCFUG Bardia on the way back, drive to Butwal  
May 17-21 Chitwan  
    May 17 drive to Chitwan and meet with TAL team 2 pm  
    May 18 Ranikhola CFUG  
    May 19 Thangkhola CFUG  
    May 20 Brahmahasthani BZCFUG  
    May 21 Nawajyoti BZCFUG, return to Kathmandu  
May 22-23 team takes break in Kathmandu, Teri cleans and analyzes data  
May 24-29 Kaski  
    May 24 drive to Pokhara in the morning, Pokhara meeting with Hariyo Ban team 4 pm  
    May 25 Bhumeputne Tisdhungae CFUG  
    May 26 Taulibhanjyang CFUG  
    May 27 Sardikhola CAMC  
    May 28 Lumle CAMC  
    May 29 Gandruk CAMC  
May 30-1 Tanahu  
    May 30 drive to Bandipur, Jumdanda CFUG  
    May 31 drive to Mugling, Amdanda CFUG and broom grass groups  
    June 1 unable to visit 2<sup>nd</sup> broom grass site due to landslides, return to Kathmandu  
June 4-7 summarize data and draft of report June 4-7 (4 days)  
June 8 results presentation in Kathmandu  
June 9 travel to Pokhara  
June 10 results presentation in Pokhara

## Appendix 3. Site maps

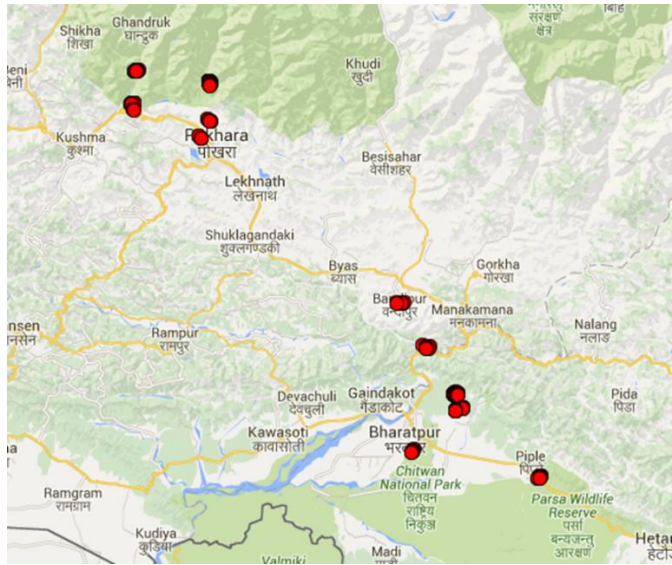
All sites:



TAL sites:



CHAL sites:



## Appendix 4. Community forest user committee survey

Date: Interviewer:

Village: CFUG Name:

People interviewed and position on CF executive committee:

Person we can call with follow up questions (name and phone number):

### CFUG INFORMATION

1. Age of CFUG:
2. CF size (hectares):
3. Type(s) of forest:
4. Operation plan last approved (year):
5. Annual CFUG income: most recent year \_\_\_\_\_ last year \_\_\_\_\_
6. Types of activities supported by CFUG \_\_\_\_\_ year began \_\_\_\_\_ % of budget to each

For individuals:

For women and marginalized:

### FOREST MANAGEMENT ACTIVITIES

7. What is allowed to be extracted (products)? What amount? How many times/frequency?  

Product	Amount	Frequency	% need met	% need changes since Hariyo Ban (or: has need dec or inc)
a. Timber				
b. Fuelwood				
c. Fodder				
d. Food				
e. Leaf Litter				
f. Other				
8. Any extraction rules changed since Hariyo Ban activities began?
9. What management activities are conducted in forest this year? And last year?  
 Checklist of possible activities (afforestation, fire lines, etc)
10. Any forest management activities changed since Hariyo Ban activities began?

### GOVERNANCE

11. How often is the forest monitored? \_\_\_\_\_ times/day or week or month
12. Form of monitoring: Community \_\_\_\_\_ Guards \_\_\_\_\_
13. If guards, number of guards? \_\_\_\_\_
14. Number of sanctions this year? Last year?
15. Last election of CFUG committee?
16. Committee composition (pre and post HB)? Total # Women Minority
17. CFUG composition (pre and post HB)? Total # Women Minority
18. Are male and female names listed for each household in constitution?
19. Governance activities conducted in the last year? Audit...1 Monthly meetings...2 Other...3
20. How many rules? Rules for what products and activities? (fodder, fuelwood, grazing, encroachment, timber)
21. How many activities have they implemented this year of OP?
22. How many activities implemented last year of OP?
23. Differences between old and new plan?
24. How many CFUG meetings this year? Last year? Previous year?
25. What percentage of members participate?
26. How many CF executive committee meetings this year? Last year? Previous year?
27. Any changes in governance since Hariyo Ban began?

### FOREST CONDITION

28. For this area, is the condition of this CF:  
 very abundant...1      somewhat abundant...2      normal...3      somewhat sparse...4      very sparse...5
29. Has the CF changed since it became CF? yes...1 no...2
30. If yes, how has it changed?
31. Has the forest changed since HB? yes...1 no...2
32. If yes, how has it changed?
- If not mentioned above:
33. Has it changed in quality? yes...1 no...2



- |     |                                    |         |        |
|-----|------------------------------------|---------|--------|
| 34. | How?                               |         |        |
| 35. | Have the animals/wildlife changed? | yes...1 | no...2 |
| 36. | How?                               |         |        |
| 37. | Have the plants changed?           | yes...1 | no...2 |
| 38. | How?                               |         |        |
| 39. | Has water changed?                 | yes...1 | no...2 |
| 40. | How?                               |         |        |

PERCEPTIONS

- |     |  |
|-----|--|
| 41. | What is working best for CFUG livelihood activities? |
| 42. | What are the obstacles?                              |
| 43. | What activities are working best for governance?     |
| 44. | What are the biggest challenges to governance?       |
| 45. | What are the strengths of this CF?                   |
| 46. | What are the biggest problems this CF faces?         |

## Appendix 5. Individual survey

(Nepali available upon request)

Interview #: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Interviewer: \_\_\_\_\_

Person interviewed: \_\_\_\_\_ Village: \_\_\_\_\_ CFUG: \_\_\_\_\_

Year began to participate: \_\_\_\_\_

### SOCIO-ECONOMICS

#### PERSONAL

1. Gender male...1 female...2
2. What is your age? \_\_\_\_\_ years
3. What is your ethnic group? Bahun/Chettri...1 Dalit...2 Hill group...3 Terai indigenous group...4 Other \_\_\_\_\_5
4. What is your religion? Hindu...1 Buddhist...2 Christian...3 Muslim...4 Other...5
5. To which grade/level did you attend school? \_\_\_\_\_ years/degree

Note:

#### LIVELIHOOD

6. What is your occupation? farmer...1 housework...2 daily wage...3 salary...4 student...5 unemployed...6 Other \_\_\_\_\_7
7. How much land do you own? \_\_\_\_\_ bighaa/katha
8. How much land do you rent? \_\_\_\_\_ bighaa/katha
9. What is your primary source of income? Agriculture...1 Daily wage...2 Business...3 Remittances...4 Other \_\_\_\_\_5
10. Secondary source of income? Agriculture...1 Daily wage...2 Business...3 Remittances...4 Other \_\_\_\_\_5
11. What are your sources of energy? (circle all that apply) Fuelwood...1 LPG...2 Solar panel...3 Generator...4 Microhydro...5 Biogas...6 Electricity...7 Other \_\_\_\_\_8
12. Has your income changed in the last 1-3 years? Increased...1 Same...2 Decreased...3 DK...4
13. If changed, why?
14. You participated in Hariyo Ban activities above. Have the activity(ies) changed your income? How? Increased...1 Same...2 Decreased...3 DK...4
15. If increased/decreased, how much? Or, a lot or a little? Lot...1 Little...2 DK...3
16. Regardless of income change, did these activities help you? yes...1 no...2 DK...3
17. If yes, how?
18. Did these activities hurt you? yes...1 no...2 DK...3
19. If yes, how?

#### FOREST

##### USE

21. Do you enter the xx CF (the one above)? yes...1 no...2
22. If yes, why/for what? \_\_\_\_\_
23. How many times/often? \_\_\_\_\_/week or month or year (circle one)
24. If no, why not?
25. Do you belong to other CFUGs? yes...1 no...2
26. Which ones? \_\_\_\_\_
27. Has your use changed since you began livelihood activities (above)? yes...1 no...2 DK...3
28. How? (Products or amount?)
29. Do you use other forests? yes...1 no...2
30. If yes, what type of forest? Other CF...1 Government forest...2 Protected area...3 Other \_\_\_\_\_

31. What do you extract?

#### GOVERNANCE

32. Do you participate in CFUG activities of this CFUG?

33. Which ones? Committee...1 Annual meetings...2 Forest management activities...3

And for how long:

Other activities and for how long...4 \_\_\_\_\_

34. Do you get benefits from the CFUG?

yes...1 no...2

35. What are they and for how long have you received them?

36. Are benefits from CFUG distributed fairly/well to all members of CFUG?

yes...1 no...2

37. If yes, for how long do you feel it has been this way?

\_\_\_\_\_ years

38. Is governance of the CFUG working well? Or: Is CFUG working well?

yes...1 no...2

39. Why or why not?

#### FOREST CONDITION

40. For this area, is the condition of this CF normal or better than normal or worse than normal?

Better...1 Normal...2 Worse...3

41. If better or worse, very or somewhat?

Very...1

Somewhat...2

42. Has the CF changed since it became CF?

yes...1

no...2

43. If yes, how has it changed?

44. Since Hariyo Ban (or activities discussed above), has the forest changed differently than it was changing before?

yes...1

no...2

45. If yes, how?

If not mentioned above:

46. Has it changed in quality?

yes...1

no...2

47. How?

48. Have the animals/wildlife changed?

yes...1

no...2

49. How?

50. Have the plants/trees/vegetation changed?

yes...1

no...2

51. How?

52. Has the water changed?

yes...1

no...2

53. How?

#### PERCEPTIONS

54. Are there problems for you with the CF? Does it cause you problems?

yes...1

no...2

(PROBE: hardship, difficulty, trouble)

55. If yes, what are the problems?

56. Are there benefits (good things) of the CF?

yes...1

no...2

57. If yes, what are the benefits?

58. How do you feel about the CF?

like...1

dislike...2

(PROBE: Do you like or dislike?)

59. Why do you like/dislike it?

If near PA:

60. Are there problems for you with the PA? Does it cause you problems? yes...1

no...2

(PROBE: hardship, difficulty, trouble)

61. If yes, what are the problems?

62. Are there benefits (good things) of the PA?

yes...1

no...2

63. If yes, what are the benefits?

64. How do you feel about the PA?

like...1

dislike...2

(PROBE: Do you like or dislike?)

65. Why do you like/dislike the PA?

## Appendix 6. Forest survey protocol

As we have limited time, we cannot perform total inventory on overall forest area, so below is the draft through which we will determine forest quality and regeneration condition. Later, based on CF inventory guidelines, we can determine forest condition.

Forest condition based on regeneration

	Forest condition based on regeneration		
	Good	Average	Poor
Number of seedlings	Greater than 5000 per hectare	2000-5000 per hectare	Less than 2000 per hectare
Number of saplings	Greater than 2000 per hectare	800-2000 per hectare	Less than 800 per hectare

Forest condition based on growing stock (This information will be taken from OP)

	Forest condition based on growing stock		
	Good	Average	Poor
Growing stock	Greater than 200 cubic meter per hectare	50-200 cubic meter per hectare	Less than 50 cubic meter per hectare

- Walking in a transect line (taking longest route)
- Taking plot alternatively
- Count regeneration (sapling/seedling)
  - Size of plot: (circular plot)
    - sapling: 2.82 m radius
    - seedling: 1.78m radius

We can determine the number of sample plots per forest on the basis of CF inventory guidelines. There is no specific method for designing of sample plot for regeneration only but we can use the method that is applicable to inventory of tree and pole.

For example, if the forest is 7 hectares, then the required number of sample plots is 2-5 (this varies between terai and hill).

For the distance between two sample plots, we have a formula as:

First, area represented by each plot (a) is calculated as: Total area of forest \ (number of sample plot +1)

And then for distance between two plots, (d)=  $\sqrt{a}$

For example, if forest area is 7 hectares,

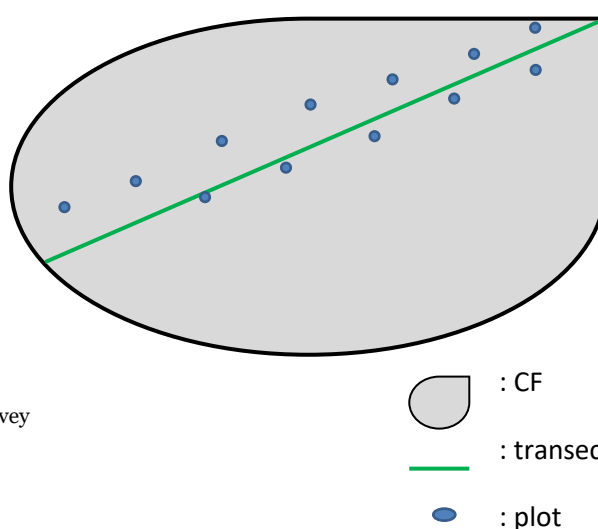
$a = 7 \div (3+1) \text{ ha} = 1.75 \text{ ha}$

then,  $d = \sqrt{a} = \sqrt{1.75 \text{ ha}}$

$= \sqrt{(1.75 \times 10000) \text{ sq.m}} = 133 \text{ m}$

i.e. The distance between two plots in case of 7 hectares is 133m.

- Take GPS point of each plot and take pictures (if necessary)
- Observe forest health condition: forest degradation, grazing, natural disaster, lopping and so on
- Observe the composition and distribution of species while walking through transect
- Going through Operational Plan of CF (Growing stock also helps in determining forest condition)





## Appendix 7. CFUG description and results

### CFUG information

CFUG Name	zone	district	Forest Condition Overall (based on OP)	Forest Condition Seedlings	Forest Condition Saplings	Forest Type	CF Age (years)	CF Size (hectares)	Household Members (approx.)	CF Hectares Per Household
Jumdanda CFUG	Hill	Tanahu	good	good	good	mixed sal	8	47	106	0.44
Karmala CFUG*	Terai	Bardia	good	good	average	mixed sal	22	24	210	0.11
Siddhanath Bajjnath CFUG	Terai	Kanchanpur	good	good	average	mixed sal	25	294	339	0.87
Janahit Mahakali CFUG	Terai	Kanchanpur	good	good	average	mixed sal	13	198	500	0.40
Nawajyoti BZCFUG	Terai	Chitwan	good	good	average	mixed sal	13	48	900	0.05
Ranikhola CFUG	Terai	Chitwan	good	good	average	mixed sal	14	199	125	1.59
Bhumepujne Tisdhungae CFUG	Hill	Kaski	good	average	average	mixed	21	9.5	85	0.11
Siddhababa CFUG	Terai	Banke	average	good	good	mixed sal	15	188	90	2.09
Babukuwa CFUG	Terai	Banke	average	good	average	mixed sal	18	218	348	0.63
Gandruk, no forest name	Hill	Kaski	average	good	average	mixed	30	NA	85	NA
Lumle, no forest name	Hill	Kaski	average	average	average	mixed	22	NA	255	NA
Thangkhola CFUG	Terai	Chitwan	average	average	average	mixed	6	199	1766	0.11
Taulibhanjyang CFUG	Hill	Kaski	average	average	average	mixed	21	8.16	44	0.19
Batabaran BZCFUG Sun Devi BZUC	Terai	Kanchanpur	average	average	poor	mixed sal	18	272	130	2.09
Brahmasthan BZCFUG	Terai	Chitwan	poor	average	average	mixed	21	99.6	290	0.34
Aamdanda CFUG	Hill	Tanahu	poor	average	poor	mixed sal	10	66	53	1.25
Laljiipur CFUG	Terai	Bardia	poor	poor	average	riverine	16	20.23	62	0.33
Banpala CFUG Sardikhola CAMC	Hill	Kaski	poor	poor	average	mixed	34	200	65	3.08
Bheri Karnali CFUG	Terai	Bardia	poor	poor	poor	riverine	12	9.5	60	0.16
Birsana Mahila CFUG	Terai	Bardia	poor	poor	poor	riverine	11	27	99	0.27
Sankatti BZCFUG	Terai	Bardia	poor	poor	poor	riverine	20	12	62	0.19

\*Karmala CFUG has two forest blocks. Results here are for the non-riverine forest block. The riverine block is in poor condition overall and for seedlings and saplings.

## CFUG livelihoods

CFUG Name	Forest Condition Overall	CFUG Income Last Year (rupees)	CFUG Income Per Household	# of Individuals with Hariyo Ban Support (WWF data)	# of Respondents with Hariyo Ban Support	Types of Livelihood Activities	Hariyo Ban-supported individuals who say income increased	Net change in forest use of Hariyo Ban-supported respondents**
Jumdanda CFUG	good	4,500	42	25	22	mixed	68%	-28
Karmala CFUG	good	23,000	110	31	28	mixed	50%	-71
Siddhanath Bajinath CFUG	good	139,860	413	33	23	mixed	39%	-39
Janahit Mahakali CFUG	good	1,564,000	3,128	21	20	mixed	55%	-25
Nawajyoti BZCFUG	good	1,100,000	1,222	22	21	mixed	90%	23
Ranikhola CFUG	good	2,100,000	16,800	16	13	livestock	46%	61
Bhumepujne Tisdhungae CFUG	good	30,000	353	42	31	livestock	48%	20
Siddhababa CFUG	average	150,000	1,667	43	39	mixed	59%	0
Babukuwa CFUG	average	780,000	2,241	94	34	mixed	68%	14
Gandruk, no forest name	average	NA	NA	0	0	NA	0%	
Lumle, no forest name	average	NA	NA	18	18	tunnel	72%	-12
Thangkhola CFUG	average	800,000	453	70	34	wool	62%	-6
Taulibhanjyang CFUG	average	24,000	0	13	12	goats	42%	42
Batabaran BZCFUG Sun Devi BZUC	average	800,000	6,154	9	5	bamboo	80%	-26
Brahmasthan BZCFUG	poor	200,000	690	6	5	livestock	80%	40
Aamdanda CFUG	poor	0	0	43	37	goats	54%	5
Laljiपुर CFUG	poor	435,000	7,016	22	23	livestock	65%	-17
Banpala CFUG Sardikhola CAMC	poor	15,000	231	13	13	goats	77%	38
Bheri Karnali CFUG	poor	12,000	200	13	13	livestock	77%	15
Birsana Mahila CFUG	poor	17,000	172	13	24	pig	42%	-13
Sankatti BZCFUG	poor	89,789	1,448	7	10	pig	60%	-40

\*Difference between percentage of respondents who say their use increased and those who say their use decreased.

\*\*Difference between percentage of respondents who received Hariyo Ban support who say their use increased and those who say their use decreased.

# CFUG governance and benefit-sharing

CFUG Name	Forest Condit on Overall	Good Benefit Sharing	Good Governance	Programs for Poor/Women	Extraction Controlled (items of 3)	# of Guards	Grazing Allowed	Rules Changed since Hariyo Ban	Sanctions	Committee Elected by Vote or Consensus	% of Women on CF Executive Committee	Annual Public Audit	CFOP Activities Completed Last Year	% who Participate in General Assembly
Jumdanda CFUG	good	88%	84%	n	2	0	no	y	1	consensus	73%	y	n	95
Karmala CFUG	good	82%	93%	n	3	2	no	n	1	consensus	27%	n	y	80
Siddhanath Baijnath CFUG	good	81%	72%	y	3	1	no	n	1	consensus	40%	y	n	60
Janahit Mahakali CFUG	good	85%	85%	n	3	2	no	n	1	consensus	45%	y	n	80
Nawajyoti BZCFUG	good	56%	56%	n	3	1	no	n	0	consensus	27%	n	n	51
Ranikhola CFUG	good	80%	86%	y	1	2	no	n	1	consensus	50%	y	y	100
Bhumepujne Tisdhungae CFUG	good	100%	100%	n	3	1	yes	n	1	consensus	64%	y	y	100
Siddhababa CFUG	average	68%	77%	y	2	1	yes	y	1	vote	33%	y	y	80
Babukuwa CFUG	average	85%	97%	y	2	1	yes	y	1	consensus	33%	y	y	75
Gandruk, no forest name	average	80%	80%	NA	1	3	yes	n	0	NA	13%	y		80
Lumle, no forest name	average	66%	53%	n	2	2	yes	n	1	NA	NA	n		NA
Thangkhola CFUG	average	82%	71%	y	2	6	no	n	1	consensus	45%	y	y	49
Taulibhanjyang CFUG	average	93%	87%	y	3	1	no	y	1	consensus	70%	y	y	100
Batabaran BZCFUG Sun Devi BZUC	average	81%	81%	n	3	3	yes	y	1	vote	31%	y	n	65
Brahmasthan BZCFUG	poor	83%	92%	y	3	1	no	n	1	consensus	36%	y	y	100
Aamdanda CFUG	poor	92%	92%	y	1	0	yes	n	0	consensus	11%	y	n	100
Laljiipur CFUG	poor	79%	85%	y	3	1	no	n	0	consensus	55%	y	y	100
Banpala CFUG Sardikhola CAMC	poor	88%	85%	n	1	0	yes	n	1	consensus	33%	y	y	100
Bheri Karnali CFUG	poor	81%	84%	y	2	1	yes	n	0	consensus	73%	n	y	55
Birsana Mahila CFUG	poor	73%	82%	n	3	1	yes	n	1	consensus	100%	y	n	100
Sankatti BZCFUG	poor	87%	93%	n	3	1	no	n	0	consensus	36%	y	n	51



## Appendix 8. Attendees at presentations of study results

Kathmandu, June 8, 2016, participants:

1. Judy Oglethorpe – Hariyo Ban
2. Netra Narayan Sharma- USAID
3. Sandesh Hamal – Hariyo Ban
4. Suvas Devkota - FECOFUN
5. Deepak Rijal- Hariyo Ban
6. Sessa Sharma - NTNC
7. Radhika K C - Hariyo Ban
8. Rajendra Lamichhane - Hariyo Ban
9. Jagadish Kuikel - Hariyo Ban
10. Sabitra Dhakal – Hariyo Ban
11. Teri Allendorf – team leader
12. Birendra Mahato – team co-coordinator
13. Sanjay Chaudhari – team co-coordinator
14. Abhilasha Sharma– team member

Pokhara, 10 June, 2016, participants:

1. Rachana Naupane - FECOFUN
2. Rupendra Ghale – Hariyo Ban CHAL
3. Rishi Baral - NTNC
4. Prabha Jammakattel (Koirala) -CARE Nepal
5. Gupta Bahadur KC – Hariyo Ban
6. Lokendra Adhikari – Hariyo Ban
7. Bal Krishna Dhungel – Hariyo Ban
8. Kalidas Subedi - FECOFUN
9. Jagadish Kuikel – Hariyo Ban
10. Teri Allendorf – team leader
11. Birendra Mahato – team co-coordinator
12. Sanjaya Mahato – team co-coordinator

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