The role of environmental incomes in rural Nepalese livelihoods 2005–2012

contextual information

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Preface

The present document presents the design as well as contextual information from the four research sites of the research project Community Based Forest Management in the Himalaya (ComForM) I - III conducted by the Institute of Forestry (IOF), Tribhuwan University, Nepal and the Global Development unit, Department of Food and Resource Economics (IFRO), Copenhagen University, Denmark, with support from the Department of Forest Research and Survey (DFRS), Ministry of Forests and Soil Conservation, Nepal.

The research design was developed together with the Centre for International Forestry Research (CIFOR) Poverty Environment Network (PEN). Three panels of data were collected in Nepal during the three phases of the ComForM project running from 2003 to 2014 and funded by the Danish Ministry of Foreign Affairs (104.Dan.8.L.716 - two contiguous projects, 10-015LIFE). The development of the research design was undertaken in collaboration with the project Tropical Forests for Poverty Alleviation - from Household Data to Global Analysis, funded by the Danish Ministry of Foreign Affairs (933-LIFE).

Acronyms

CIFOR	Centre for International Forestry Research
ComForM	Community Based Forest Management in the Himalaya
DFRS	Department of Forest Research and Survey
IFRO	Department of Food and Resource Economics
IOF	Institute of Forestry
PEN	Poverty Environment Network
GNI	Gross National Income
USD	United States Dollar
GDP	Gross Domestic Product
VDC	Village Development Committee
FUG	Forest User Group
CAMC	Conservation Area Management Committee
ACAP	Annapurna Conservation Area Project
Rs	Nepalese rupees
Danida	Danish development cooperation
cbft	Cubic feet
FMSC	Forest Management Sub-committee

Contents

1. Introduction

This working paper describes the design of the Community based natural forest management in the Himalaya (ComForM) research project that sought to establish the importance of environmental income to rural Nepalese livelihoods. The research was undertaken by the Institute of Forestry (IOF), Tribhuwan University, Nepal and the Global Development Unit, Department of Food and Resource Economics (IFRO), University of Copenhagen, Denmark, with support from the Department of Forest Research and Survey (DFRS), Ministry of Forest and Soil Conservation, Nepal. The research took place in areas where forests are managed by the local people, either as part of the national community forestry programme, i.e., by community forest user groups (FUGs) (MFSC 1988) or as protected areas (MFSC 1973), i.e. by Conservation Area Management committees (CAMCs).

The core of the research design is the construction of total household accounts, including environmental incomes, for a random sample of households in four sites. Data were collected from the same households at either two or three points in time, thus enabling analysis of livelihood dynamics. The methodology for establishing the total household accounts was developed together with the Centre for International Forestry Research's Poverty Environment Network (PEN). A brief introduction to the research objectives and the PEN methodology is provided in section 2; additional information on concept definitions and authoritative survey question interpretation are available in PEN (2007). Section 2 also describes how collection of the Nepal PEN data took place, from selection of the four sites to data entry and dissemination of results to participants.

Mustang district ranges from the temperate to the trans-Himalayan zone. Photo: M Christensen

The Nepal PEN data were collected in four sites in the districts of Mustang, Kaski, Chitwan and Gorkha (Figure 1). In the three first sites data on forest growth and forest product harvest in the forests associated with the communities studied were also collected. Methodological details of the biophysical study are provided in a separate paper (Meilby et al. in prep.).

A wide range of quantitative and qualitative contextual information was collected to situate the research and to facilitate the interpretation of the household income data. This information is presented for each site in section 3. The information has been compiled starting from 2005. Separate and more detailed documents have been prepared for the research sites in Mustang and Gorkha districts (Chhetri 2008, Rayamajhi 2006). In addition to shedding light on rural livelihoods dynamics, the Nepal PEN data provide background material that can inform further studies. A number of such studies already undertaken or in process are described in section 4 and additional data collection instruments are provided in Appendix C.

Table 1. Percentage of Nepalese GDP from various sectors (World Bank 2013).

	1991	2001	2010
Agriculture	47.2	37.3	36.5
Industry	17.4	17.8	15.6
Manufacture	6.7	9.3	6.5
Services	35.4	45.0	47.8

1.1 Nepal

Nepal covers an area of 147,181 square kilometres and spans an altitudinal range of about 100 to 8848 masl (Mount Everest). The country features three main physiographic regions – the lowlands (the Terai, inner Terai and Siwaliks), the Hill region from about 700 masl, and from about 3000 masl the Mountain region. The climate varies from sub-tropical to alpine, and during June, July and August the monsoon sweeps Nepal from east to west; mean annual precipitation ranges from below 500 to above 5000 mm. The 75 districts of Nepal are distributed in 5 development regions. The ComForM sites are located in the Midwestern
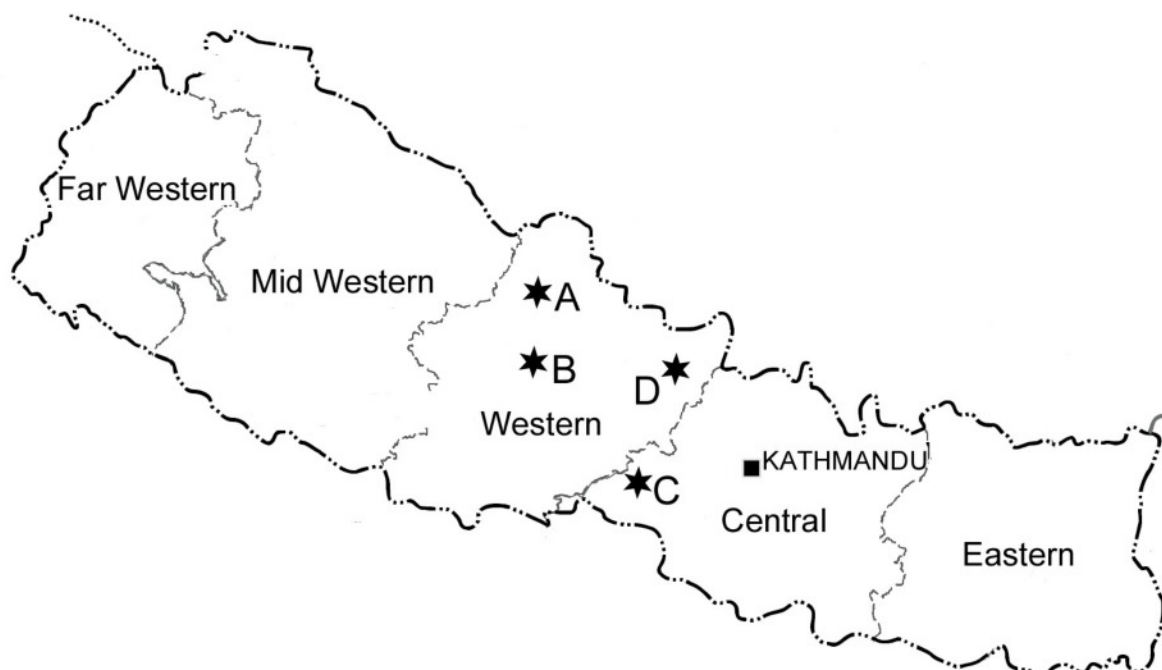
Figure 1. Map of Nepal showing development regions and research sites. A: Mustang, B: Kaski, C: Chitwan, D: Gorkha.

Terracing makes intensive cultivation possible. Here close to the main settlement in Simjung VDC, Gorkha district. Photo: HO Larsen

development region (Kaski, Mustang, Gorkha districts) and the Central development region (Chitwan district) (Figure 1).

Because of the geographical and climatic variation within Nepal a large number of natural vegetation types can be distinguished. Bioclimatic zones range from tropical to alpine and moisture regimes from arid to per-humid (Lillesøe et al. 2005). Stainton (1972) described 35 different forest types in Nepal, changing from the relatively wetter east to the drier west of the country. The forests included in the ComForM research represent what can be considered typical forest types in the three physiographic regions. The predominant forest type in the lowlands is the Sal forest (*Shorea robusta*), the hill forest is mainly Schima-Castanopsis forest (*Schima wallichii – Castanopsis* sp.) and the mountain forest is temperate and alpine conifer forest (main species are *Pinus wallichiana* and *Tsuga dumosa*).

Nepal is a developing country with poor economic performance, GNI per capita was 700 USD in 2012 (World Bank 2013). The most recent Human Development Index for Nepal is low in absolute terms, 0,463 (UNDP 2013), but it shows an increasing trend. The economy of Nepal has for long been characterized by agricultural production. Agriculture at present employs 66% of the population and contributes 39% of the GDP (DOA nd). Changes in the economy and in people's livelihoods are, however, apparent. For example, in 2009 remittances from regional and international wage work accounted for 22.9% of the national income (UNDP 2011). Recent data on the contribution to GDP from main productive sectors are provided in Table 1.

The agricultural land under permanent crops and permanent pasture has been stable at 30% for a long period (World Bank 2014). The forest cover, however, has declined from 45% of the country's land area in 1964 to 29 percent in 1998 (Tachibana & Adhikari 2000). This led to the development of the Master plan for the forestry sector and the introduction of community forestry (MFSP 1988).

1.2 Community forestry in Nepal

Legislation passed in 1978 opened up for the involvement of Nepalese forest users in the management of the forests where they were

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extracting products for their livelihoods (typically firewood, fodder and timber) (Acharya 2002). The master plan for the forestry sector defined community forestry and the ensuing act (MFSC 1993), regulations (MFSC 1995) and revised guidelines (MFSC 2009) serve to specify the nature of the relation that the users should maintain with the forest and how forests are to be governed. Basically, forest user groups (FUGs) have to prepare an operational plan for how the forest is to be managed, i.e. how much timber will be extracted) and a constitution specifying the rules to be in force concerning forest product extraction and benefit distribution. The operational plan and the constitution must be approved by the District Forest authorities. The FUGs are entitled to both forest products and to revenues from forest products extracted in the community forest. There are more than 14000 FUGs involving more than 1.65 million households across Nepal (Pokharel 2010), the number is still increasing, and the revenues from forests are likely to increase as accumulated timber values are realized (Thoms, 2008).

A large number of studies have been carried out to evaluate the effects of community forestry. It is largely considered that the programme can halt deforestation (Gautam et al. 2002; Thoms 2008) and generate revenue (Chhetri et al. 2012), but that issues of inequality and discrimination of women persist (Chhetri 2006; Nightingale 2002).

Acorus calamus (sweet flag, a perennial monocot) is common in lower Mustang District in wetland areas. It is used in traditional medicine and occasionally traded. Photo: C Smith-Hall

2. Research design and implementation

2.1 Objectives

The overall objective of the Nepal PEN study implemented during the ComForM project was to:

contribute to the understanding of dynamic forest-poverty links in Nepal.

This was pursued by quantifying forest and environmental incomes to the rural populations in three altitudinal regions at different points in time. The data will be used to answer, inter alia, the question whether forest incomes serve as gap fillers or safety nets, and whether forests can contribute to lifting people out of poverty (Angelsen & Wunder 2003). Additional research questions emerged during the implementation of the study, for example when the construction of a road provided a host of new livelihood opportunities in Mustang district, and these may be answered by analysis of the socio-economic data alone, by analyses of a combination of the socio-economic and biophysical data, and by adding supplementary information from new data (section 4).

2.2 The PEN methodology

The PEN methodology is used to gather data on total household cash and subsistence incomes (from agriculture and gathering activities, from self-employment and business, from wage labour and transfers). This is done with the use of 5 survey instruments: (i) a village survey eliciting information on infrastructure, land use, prices etc. from a group of key informants (V1); (ii) a household survey eliciting information on demographics, assets, forest access etc. at the start of the survey (A1); (iii) a quarterly survey eliciting incomes and expenditures (Q1-Q4); (iv) a household survey eliciting information on shocks experienced, distributed at the end of the survey year (A2); and (v) a village survey eliciting information on general shocks, wage rates, prices and forest services. The survey instruments are provided in Appendix B. Please refer to PEN (2007), Angelsen et al. (2011) and Lund et al. (2008) for more detail regarding concepts, definitions, and general aspects of PEN study implementation.

Table 2. Study site administrational units.

District	VDC	FUG	CAMC	Wards	Sampling frame
Chitwan	Chainpur	Kankali	-	All	FUG members
Kaski	Hemja	Tibrekot	-	(4, 5), 7, 8, 9	FUG members
Gorkha	Simjung	Several	-	All	VDC inhabitants
	Gyachchok	None registered 2008	-	All	VDC inhabitants
Mustang	Lete	-	Lete	All	VDC inhabitants
	Kunjo	-	Kunjo	All	VDC inhabitants

2.3 Pre-fieldwork activities

2.3.1 Site selection

The four sites of the ComForM study cover the main physiographic zones of Nepal: one site is located in the Mountains (Mustang district, Figure 1), two in the Hill region (Kaski and Gorkha districts) and one in the lowlands (Chitwan district). Selection of the sites was purposeful: apart from covering the altitudinal gradient selected sites were considered relatively representative in terms of forest type and degree of forest dependence. Further, sites where the local community was positive towards long-term research were favoured. The initial site selection took place in 2005 by researchers from the three partners and at the time the political situation played a role. From 1996 to 2006 a civil war took place in Nepal, the so-called 'Maoist insurgency'. The civil war meant that not all areas of Nepal were accessible and 'safety' by necessity became as additional parameter in the site selection. The fourth site (Gorkha district) was selected in 2008 when the political situation was more stable; the site was purposefully selected so as to be relatively remote compared to the other site in the middle hills (Kaski district).

In two of the four districts where sites are located (Kaski and Chitwan) households were selected among the members of one FUG. In one site (Gorkha) the sampling frame consisted of all inhabitants in two Village Development Committees (VDCs), Simjung and Gyachchok; in one of these VDCs (Simjung) all inhabitants were member of one or more FUGs, in the other VDC (Gyachchok) a number of FUGs were in the process of handover for local management. One site (Mustang) was part of a Conservation Area, meaning that all inhabitants were members of a Conservation Area Management Committee (CAMC); each of the two VDCs included in the ComForM study (Kunjo and Lete) constitutes a CAMC (Table 2 provides an overview of the district, VDC and FUG names used).

The project started with introduction meetings in all sites. Here at VDC premises in Lete, Mustang, 2006. Photo: S Rayamajhi

2.3.2 First contact

As part of the study site selection process the relevant District Forest Offices and the NGO responsible for the management of the Conservation Area (Annapurna Conservation Area Project – ACAP) were consulted. These authorities were helpful in facilitating the first contact with the local authorities of the study sites. The first contact was made during a site selection survey with participants from IOF and IFRO in 2005, and once selection had been made the local authorities were contacted to confirm the site selection. In each of the selected sites meetings were held to explain the study purposes and activities in detail and a written agreement was produced specifying the responsibilities of both parties (the local community and the researchers). The local communities provided research assistance at agreed (and periodically re-negotiated) rates

and the researchers provided monetary support to the local community (about 5000 USD per site); the specific support provided depended on the local communities' expressed priorities and involved computers for community offices and support for community buildings.

Household surveys were conducted after completing one village survey meeting in each of the VDCs. Additional village survey meetings were held later with the purpose of completing the village survey form and also for additional information required for other objectives of the ComForM project. The participants in the village survey meetings were the VDC secretary, ex chair persons of the VDC, ex ward (hamlet) chair persons, executive committee members of FUGs and other local people including women and *dalits* (persons from so-called lower castes).

2.3.3 Setting the research team

In Mustang and Gorkha the initial research teams consisted of a main PhD researcher (in each case a PhD student who was a faculty member from the IOF), a research assistant (the same in the two cases), local enumerators and occasional additional researchers from among the faculty of the IOF. In Kaski and Chitwan data collection was initially headed by a research officer employed by the ComForM project, supported by various IOF faculty and local enumerators. During the second round of data collection, in 2009, the ComForM research office was responsible for the data collection and it was carried out by the research officer, research assistants and IOF faculty. For the data collection in 2012 two research assistants were employed by the ComForM project to collect and enter the data under the supervision of a research officer and a coordinator from IOF (the PhD scholar that had established the site in Gorkha). Data collection again in 2012 involved local enumerators.

It was decided from the beginning of the study to work with local enumerators rather than outsiders. This was possible due to the relatively high level of education in all study sites; a number of young people with sufficient level of education (class 8-9) were available. For each survey round the enumerators were selected by the local community according to criteria provided by the researchers: young people with a certain level of schooling, commitment to work in all four quarters of the survey, representation from the entire geographical area of the community, representation from as many ethnic groups and castes as possible, and equal proportion of girls and boys.

The enumerators received one week of training, including supervised mock interviews. At the start of each new quarterly survey round refreshment training was provided. Enumerators were paid for their work. In the 2006, 2008 and 2009 the payment was made against filled-in questionnaires; the payment started at 250 Rs. per questionnaire in 2006 and rose to 400 Rs. in 2009. In 2012 it was decided to provide one month's salary (approx. 150 USD) to the enumerators for each quarterly survey to promote thorough data collection. Table 3 provides an overview of the number of enumerators hired as well as attrition and replacement during the survey rounds.

2.3.4 Acquiring local context information

Several group and individual interviews were conducted with key informants to learn about the local contexts. In Kaski, Chitwan and Mustang wealth ranking exercises and seasonal calendars were produced (Appendix D).

2.3.5 Sampling households

A household was defined according to PEN (2007) as "*a group of people (normally family members) living under the same roof, and pooling resources (labour and income)*". The definition adopted is suitable because the study focuses on the harvest and consumption of environmental products. Inclusion of family members residing elsewhere, e.g. in cities, would likely mean that production and consumption of environmental income per adult equivalent unit were underestimated.

Table 3. Number of enumerators involved in Nepal PEN surveys.

Site, survey year	No. of enumerators	Enumerator attrition	Reason for attrition	No. of enumerators replaced
Kaski 2006	10	1	Other job	1
Kaski 2009	10	0	-	0
Kaski 2012	4	1	Data falsification	1
Chitwan 2006	17	0	-	0
Chitwan 2009	17	1	Marriage	0
Chitwan 2012	6	2	Pregnancy Other job	2
Mustang 2006	10	3	Incompetence Personal reasons Other job	2
Mustang 2009	8	0	-	0
Mustang 2012	8	1	No commitment	1
Gorkha 2008	8	1	Other job	1
Gorkha 2012	8	2	Childcare Other job	2

In some sample households married sons had not left their parents' house but incomes and expenditures were no longer pooled. In such cases the parent's and son's families were considered two separate households. In other cases persons who had left the family house were still found to pool incomes and expenditures with the family household and these were consequently considered members of the household. Where one man had two wives and incomes and expenditures were not pooled, the household where he spent most of his time was followed.

The households participating in the first survey rounds in 2006 (Chitwan, Kaski, Mustang) and 2008 (Gorkha) were randomly selected. In Mustang and Gorkha census lists of households obtained from local authorities were used as sampling frames. In Kaski and Chitwan lists of FUG members served as sampling frames. In all cases the household lists were several years old and had to be updated with key informants before sampling. Households were selected by simple random sampling (Table 4).

2.3.6 Preparing the questionnaire

The standard PEN questionnaires were translated into Nepali by faculty of the IOF and tested in villages close to Pokhara. No serious difficulties were encountered.

The income surveys followed the PEN format with a few exceptions in 2006; a table eliciting expenditure data was added to the PEN quarterly survey format and recall periods of forest products were 1 and 3 months. In 2009 the format of the Danida PEN survey was used, and in 2012 the format was revised again. All data collection instruments are available in Appendix B.

2.4 Fieldwork

The Nepal PEN study used recall periods of one and three months for all forest products in 2006. In 2009 the Danida PEN prototype

Table 4. Initial respondent household selection, 2006 and 2008.

District	Sub-unit	Village	Total no of households	Households sampled
Kaski	Hemja VDC	Several wards	220	125 (57%)
Chitwan	Chainpur VDC	All wards	1542	207 (13%)
Mustang	Kunjo VDC	Titi, ward 1	12	9 (75%)
		Kunjo, ward 2-9	151	79 (52%)
	Lete VDC	Ghasa, ward 1-3	56	32 (57%)
		Lete, ward 4-6	76	44 (58%)
		Dhampu, ward 7-9	42	22 (52%)
Gorkha	Simjung VDC	All wards	846	205 (24%)
	Gyachchok VDC	All wards	385	100 (26%)
Total			1788	616 (34%)

questionnaire was used where the recall period for frequently used products was 1 month and for infrequently used products it was 3 months.

2.4.1 The survey interviews

Sample households were distributed to enumerators according to their location so that enumerators would visit households residing close to their own house. As far as possible, the same enumerator went to the same household in all quarters.

The local enumerators were able to build up trust with the respondent households. It is the researchers' assessment that the use of local enumerators enhanced the data quality rather than create bias. Being local, the enumerators knew the respondent households' overall livelihood situations; they were found able to triangulate the information from one quarterly survey with their general knowledge of a household and the information provided in previous quarters.

Generally, the respondent was the male household head; in some cases the wife of the household head joined the interview and in a few cases all members of the household would be present. The enumerators tried to avoid the presence of neighbours and other outsiders who might influence respondents' willingness to provide information.

All interviews were carried out at respondents' home, Imustang district. Photo: N Khadka

In most survey rounds the quarterly survey and one additional survey instrument were used to elicit data. In the beginning it took on average two hours per household (more for households where many livelihood activities were being pursued), and this was reduced to around one hour when the enumerators became more experienced. In Hemja where there were few respondent households the survey was finished in about 10 days, while in Chitwan two weeks or more were needed.

No formal tests for enumerator bias have been conducted. Initialy Daily data review sessions were conducted by the researchers in the evenings of the survey periods to identify errors in data. The correct information would then be elicited from the respondent household the following day. For example, if charcoal was reported but not firewood collection. In the few cases where problems were encountered in the data and valid information could not be achieved, the information had to be omitted. In one case an enumerator was found to fabricate the data. The data was omitted and the enumerator replaced.

Especially in Kaski the respondents were reluctant to expose all their income sources, and information on business income was particularly difficult to elicit. Respondents tended to show limited income but large amounts of investment in business – this was probably due to fear of divulging information not reported to the tax authorities. Also information regarding land holdings, savings and gold was difficult to elicit.

2.4.2 Extra-survey activities
In all sites unit verification was undertaken as part of the initial 2006 and 2008 surveys (Rajamajhi and Olsen 2008). All products were converted to SI units, kg or litre (Appendix E). A maximum standard deviation of 10% was aimed for but this was not possible for all products; especially infrequent and seasonal products presented challenges. Well established conversion factors for local land units were available. In all Nepal PEN sites

Fodder is extracted from forests especially in the dry season, Gorkha district. Photo BBK Chhetri

market surveys were undertaken to verify local prices.

2.4.3 Checking information
During survey rounds the researchers and the research assistants stayed in the local community (except for survey rounds in Kaski where the research site is located close to the IOF). At the time of the first quarterly survey each enumerator was observed during a number of interviews. During all quarterly surveys filled-in forms were checked by the end of the day and any missing information was obtained the following day. In the beginning the enumerators were gathered every evening for checking and clarifying doubts on the questionnaire; later this was considered less necessary and where the households were very scattered about two meetings were held per week.

2.4.4 Giving gifts
In addition to the support provided to the communities, a few gifts were given to the individual respondents. These included photos of the individual households and calendars. Some of the researchers and enumerators carried chocolates for the children. This was generally appreciated by the respondents.

2.4.5 Household attrition
The extent of attrition in the household surveys is reported in Table 5. In the 2009 surveys new households were added to the sample, they were randomly selected. These new respondent

Woman transporting firewood and fodder in Chitwan. Photo: L Puri

households can of course not form part of panel analyses involving data from 2006.

The main reasons for attrition were death (2), migration (3), and the rest were attributed to respondents' resistance to participate, due primarily to the sensitive nature of the questions regarding their assets. Preliminary analyses suggest that attrition did not lead to biased income estimates.

2.5 Post field work

2.5.1 Data entry
The 2006 data were initially entered in a database prepared by the ComForM partners. After the PEN database was finalised the 2006 data was converted to this format. The conversion presented some challenges, especially for the data from Kaski and Chitwan. A main challenge was the different recall periods for forest products; in 2006 ComForM elicited amounts of all forest products collected within the last 1 and 3 months, the PEN standard was to elicit amounts of large and irregularly collected forest products from the last 3 months and amounts of small and regularly collected products from the last 1 month.

Two PhD students and one assistant were responsible for the entry of data from Mustang 2006 and Gorkha 2008. For the Kaski and Chitwan sites several persons were involved in data entry in 2006, and this was the case for all

sites in 2009 and 2012. In all cases the data were entered after the survey.

2.5.2 Data cleaning and management
The 2006 data set from Mustang and the 2008 data set from Gorkha were submitted to PEN and underwent the PEN standard check followed by incorporation into the global PEN database. Subsequently the remaining data from 2006 and 2009 underwent the same process, but the data does not belong to the global PEN database. The 2012 data was checked by researchers at IOF and IFRO using to a large degree the same methods as was used in the PEN standard check. In addition to typos the data initially reflected that a set of codes different from the PEN codes had been developed for the original ComForM database. All codes are now brought in line with the PEN coding system and new codes are added where necessary – these are not all incorporated in the standard PEN codebook. The Nepal PEN codes are included in Appendix B4. Data cleaning was conducted in a master copy which IOF and IFRO researchers took turns to work on while simultaneously maintaining communication.

A main problem encountered in the data is that it was hard to elicit trustworthy data for especially business income. Selected households were revisited to follow up on the negative business income data with relatively little success. The business component of the questionnaire was revised in 2012 to include

Wood from the community forest is stocked and sold from the FUG office. Tibrekot, Chitwan district. Photo: HO Larsen

Firewood stacked on roof tops for storage, Jomson, Mustang District capital. Photo: C Smith-Hall

all incomes and expenditures in the three-months period and to separate capital costs from running costs, following the World Bank's Living Standard Measurement Survey.

2.5.3 Returning results to local communities

Aggregate data were presented orally to the communities during meetings in each site. The updated lists of households were provided to the communities for supporting general community planning. Representatives from the communities were invited to attend project seminars at the end of each of the three project phases where data were presented. In 2014 end-of-project events were undertaken in all sites, where results were disseminated and appreciation expressed to the participating communities.

2.5.4 Data analysis

The per household quarterly and total annual net income (inclusive of own use of labour) was calculated in terms of both cash and subsistence incomes. The latter involves the value of all non-purchased goods and services consumed by the household (Cavendish 2002) during the recording years, i.e. the value of gifts, own-produced goods and environmental resource uses. Incomes were grouped: direct forest income (from un-processed forest products), derived forest income (from processed forest products), income from fishing and aquaculture, non-forest environmental income, wage income, own business income, income from agricultural crops, livestock income, other income (e.g., remittance). For more detail please refer to PEN (2007).

2.6 Researchers

The organisation of the research project in Nepal was initiated by Carsten Smith-Hall, Abhoy Kumar Das, Henrik Meilby and Helle Overgaard Larsen. The 2006 Mustang survey was conductedby Santosh Rayamajhi and the 2008 survey in Gorkha by Bir Bahadur Khanal Chhetri. The ComForM research officer Lila Puri initiated and monitored the first surveys in Kaski and Chitwan and all surveys undertaken in 2009. The 2012 surveys were initiated and monitored by B.B.K. Chhetri. Many faculty members from the IOF were involved in the data collection.

Table 5. Household attrition.

Site	Intitially selected	Drop-out before 2006 survey	2006	Drop-out before 2009 survey	2008	2009* survey	Drop-out before 2012 survey	2012 survey
Kaski	125	11	114	11	-	103 (16)	3	116 (15)
Chitwan	207	0	207	16	-	191 (48)	14	225 (43)
Mustang Kunjo	92	4	88	0	-	88 (2)	7	83 (?)
Mustang Lete	102	4	98	0	-	98 (11)	12	97 (?)
Gorkha	305	2	-	-	303	-	29	274
Total	831	21	507	27	303	557	65	795

*Numbers in parenthesis indicate households that were added in 2009.

3. Research sites

The four sites of the study are Mustang (Kunjo and Lete VDC), Kaski (Tibrekot FUG in Hemja VDC), Gorkha (Simjung and Gyachok VDCs) and Chitwan (Kankali FUG in Chainpur VDC) (Figure 1). This chapter provides contextual information from each site.

3.1 Kaski District: Tibrekot Community Forest User Group

Tibrekot forest and the settlement where the members of Tibrekot FUG live is located in Hemja VDC of Kaski District. It is situated in a fertile valley at 10 km distance from Pokhara, one of the major cities in the middle hills of Nepal. The FUG office is located in Melbot in Hemja, Ward 8. Member households are located primarily in three Wards (7, 8 and 9), with a few households scattered in Ward 4, Ward 5. Households studied were randomly selected among the members of Tibrekot FUG.

The VDC of Hemja covers 19.71 square kilometers (1971 ha). It is located between 28°14'48''N - 28°18'5''N and 83°52'46''E – 83°58'18''E. The altitude varies from 840 to 1471 meters above sea level. The main settlement area lies along a road that is accessible to motorized vehicles, including transportation of goods) in and out of the village all year. The area is mostly plain, near the bank of the Seti River.
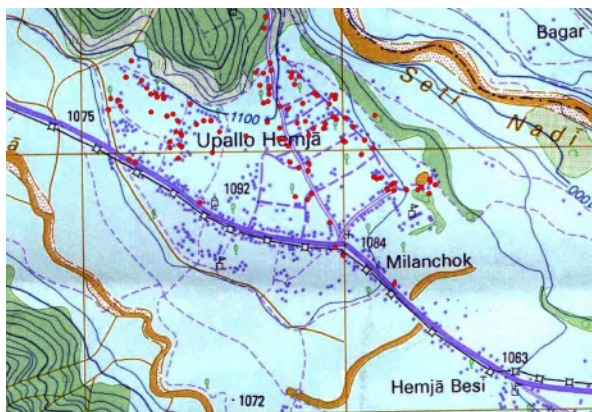
Figure 2. Map of Hemja Village Development Committee. Red dots indicate the location of respondent household dwellings.

3.1.1 Brief history

The area where Hemja is located has been inhabited for several centuries and is now being turned into an almost peri-urban area with strong links to the markets, education possibilities and employment opportunities in the city of Pokhara. This process took off especially from 1990 with the construction of the Baglung-Pokhara highway and with the introduction of irrigation (the irrigation facilities were greatly improved around 2000).

The Tibrekot forest was registered (sanat) in the joint name of Mr. Balabhadra Dahal and Shree Dhar Poudel in 1915. Prior to this, the forest area was unregistered government land, used by nearby settlers subject to no restrictions. Much of the forest was degraded due to extreme pressure and daily demand for firewood, fodder and timber, combined with the open access situation. The families presently included in the Tibrekot FUG report to have started to protect the forest because of the shortage of basic forest products (firewood, timber, fodder). The present community says to have been conserving the Tibrekot forest for about 35 years. After resolving a dispute with a neighbouring community also claiming access, the forest was handed over to Tibrekot FUG as a community forest in 2002.

3.1.2 Forest management

Tibrekot forest is 79 ha. The biophysical part of the ComForM study has documented that the standing stock in the forest decreased by about 15% between 2005 and 2010 (from 207.5 to 178.1 m^{3}ha; Meilby et al. nd), followed by an increase of 178.1 to 185.5 m3/ha in the period from 2010 to 2013 (Puri et al. 2012). In interviews conducted for the institutional part of the ComForM study members from the FUG executive committee explains that the large extraction of timber resulted partly from a need to thin the forest and that currently a much more restrictive practice than the operational plan allows for is followed (Rutt et al. 2013).

Membership fees are specified in the FUG constitution but may change annually, as decided by the FUG's general assembly. The annual fee for membership of Tibrekot FUG was 20 rs. in 2012. Registration of new households cost 1111 Rs. for households originating from member households (for example when a son marries and leaves the parental home to establish a new household). Membership fees and regulations may change annually, as decided on the FUG general assembly. Details on membership fees in 2012 are provided in Box 1.

Box 1. Membership fees in Tibrekot Community Forestry User Group, 2012.

The annual renewal fee is 20 Rs.

Membership for new internal households (for example through marriage) is 1111 Rs. (increased from 500 in 2009 and 100 in 2008)

The constitution specifies that a new external membership cost 8001 Rs.; However, the general assembly decided to increase this number to 20,000 Rs.

It is a prerequisite that new external members (migrants) have a certificate of migration and that they have formally left their past FUG (this is not always enforced)

The fee for poor households who have been living in the area for many years, but who have never been registered as users, is 1000 Rs.

3.1.3 Demographics

The population in Hemja rose from 6409 in 1991 to 10,992 in 2010; the total number of households rose from 1276 to 2138 (CBS 2001, 2011).

Melbot, where the Tibrekot office lies, contains 21 households. The number of member households in Tibrekot FUG increased from 219 in 2002, to 257 in 2008 and 265 in 2012.

The growth was mainly due to member households being divided when sons leave to form a new household. As of 2012, the number of members in the FUGC (executive committee) is 11 (3 female, 8 male) and the number of forest guards is 2.

As of 2012, and within both Hemja and Tibrekot FUG, the largest group of people belong to the Chhetri caste. In Tibrekot FUG, Chhetris number 140 households (59.32%), Brahmins 87 (36.86%), and there were 4 Giri households (1.7%), 3 dalit households (1.27%), and 2 indigenous, i.e. characterized as ethnic, households (0.85%). The middle class, i.e. relatively wealthy people with some savings, comprises more than 90% of the population. The rich and middle classes are dominated by Chhetris and Brahmins, while the poor class is comprised of mainly Giri and dalit households. The individual toles (hamlets) are relatively homogenous in terms of caste groups, and divided upon 'Brahmin' and 'Chhetri' toles. The few Giri households live a bit away from the other settlements on public land, while the dalit households live on public land in between Chhetri farmers. Individual household members occasionally leave Hemja, but rarely entire households. The influx of people to Hemja is relatively low today, if disregarding the seasonal addition of wage labourers coming typically from Dhading and Gorkha Districts.

3.1.4 Study villages
The settlement is not divided into significantly different clusters (Figure 2).

3.1.5 Major economic activities
Households in Tibrekot FUG depend mainly on agriculture, livestock, and remittances from family members working abroad. Cash and subsistence cropping of rice, potatoes, maize, wheat and other cereals, lentils, soya beans and a variety of vegetables is common throughout the year. Most households own livestock such as buffaloes, goats and chickens. Economic differences exist and largely follow caste and ethnic divisions.

There are several businesses (for example, cosmetics, clothes, hardware, agriculture

equipment, food stalls). Three sawmills and a plywood factory operate nearby are not owned by FUG members. Many households have members working abroad and they send back remittances. Some have members working in the area for a monthly salary (government services or NGOs), or receiving pensions.

Livelihood contributions from the forests are relatively low, partly because of restrictions on access to the forest. But also because the commercial production of vegetables and the closeness to the urban area provide more lucrative income generating opportunities.

3.1.6 Seasonal calendar

Agricultural activities take place throughout the year with the exception of the period from mid-December to mid-January. Major planting (rice) occurs in the June-July, harvesting in October-November. After harvesting rice, people plant potato; this is harvested in mid February to mid March. After harvesting potato, people cultivate maize; this is harvested in June-July, which restarts the cycle when rice is planted in the fields (Appendix D1).

Dry firewood is collected in October and January and green firewood is collected in January and February (see details in collection below). Food insufficiency used to occur in mid-August to mid-November, though rice is now regularly imported when necessary from the lowlands. Labour deficiency used to occur June to September but this is no longer a serious problem due to the influx of seasonal migrants from especially Dhading and Gorkha.

3.1.7 Markets and market access

With the construction of the Pokhara-Baglung highway in the 1990s the accessibility to especially the market in Pokhara was increased greatly. A road constructed in 1979 passing through the village is now a main route used for transportation by people from the upper hills.

The nearest market for vegetables is Milan chowk, a small bazar at the highway immediately outside the village. Vegetables are frequently brought to Pokhara for sale.

Transportation of timber is challenging in the steep terrain, women carrying logs in Hemja, Kaski district. Photo: AK Das

3.1.8 Forest products

The community forest is a deciduous montane forest situated on a hill at an altitude of 900-1000m and close to the settlement. The main tree species are Katus (*Castanopsis indica* (Roxb.) Miq) and Chilaune (*Schima wallichii* (DC.) Korth.), with minor occurrence of other species like Kurilo (Asparagus racemosus), Amala (Phyllantus emblica) and bamboo. The community forest covers a total of 79 ha. Main forest products are timber, green firewood, dry firewood, grasses and leaf litter. Broom grasses and non-timber forest products are also utilized. Table 6 provides details on forest product collection and rules for collection. Sawmills in the area produce furniture, planks and housing materials sold at the local and Pokhara markets.

3.1.9 Major land cover and land uses

In 2010 the land cover in Hemja was as described in Table 7.

3.1.10 Description of conservation areas

There are no conservation areas in Hemja VDC; the adjacent VDC lies within the Annapurna Conservation Area.

3.1.11 Tenure institutions (formal, informal, land- and product specific)

Land is either private or public. Private land tenure rights are generally well established in

Table 6. Details on forest product collection in Tibrekot FUG.

Product	Collection period(s)	Restrictions on amounts	Fees	Rules	Pro-poor, special needs	Other information
Timber	January and February	Max. allowable annual cut of 300 cbft as per committee decision (OP limit is higher), divided equally amongst interested/needy applicant HHs	100 rs/cbft; max allowed is 20 cbft/HH (not in OP, rule in practice); HHs pay harvesting and transport, approx. 200 rs/cbft	HHs can apply every five years; one fixed annual application date; sale is forbidden	Free in case of natural disaster; if shortage, priority given to those who haven't received timber before/ those who cannot afford to buy from the market	Common timber species used for house building are Katus (*Castanopsis indica* (Roxb.) Miq) and Chilaune (*Schima wallichii* (DC.) Korth)
Green firewood	January and February	1 stack (chatta) of 2 hand x 3 hand x 3 hand (1 hand = 18'')/HH (in 2012). Each stack is about 20-30 loads	No fee; HHs pay for hired contractors (in 2011, the price was 550 Rs/stack) and tractor transport if desired; sale is forbidden	Interested HHs register in advance to determine the number of stacks cut. A lottery system is used to determine collection location of stack	Free for cremations services (but a 25 rs registration fee) and marriage ceremony (with an application) max 10 backloads of 20 rs each	Sale occurs; hard to monitor and declining need due to alternative fuel; local market price for one stack is 5,000 - 5,500 Rs and up to 8,000 Rs in Pokhara
Dry firewood	October (festival) January	1 load /HH/day	No fee	-	-	Individual extraction
Grasses	5-7 days, 3 times/ year	1 load /HH/day	No fee	Period fixed each year	-	-
Plantation area ground grasses	All year round	Unlimited	6700 Rs generated last year	'Contractor' can sub-lease the plot and sell the grasses, main-tains responsibility for protection	-	The plantation is divided into 4 plots; each plot is auctioned for a year; grasses used as fodder
Leaf litter	Once per year, early March, for 10 days according to OP. In practice 15 days	1 load/HH/day	No fee	-	-	-
Charcoal	2 times/year	2 x 1 load of charcoal (equivalent to 10 loads of mixed green and dry/dead fire-wood)/person. Total of 20 cbft (2 trees)	No fee; All HHs pay 1 pathi (3,5 kg) of paddy rice to blacksmiths per capita (each member of HH- ox counts as a person)	Only for the 2 dalit blacksmiths that maintain agricultural tools for CFUG	-	The forest guards indicate which trees can be used
Broom grass	December only	Unlimited in month	Last time only 1 bid, 1000 rupees	Minimum price set, then bidding	-	-
Consumables	All year round	No limit	No fee	No bushmeat, only chestnuts, fruit, herb	-	-

Load = backload/bhari, cbft = cubic foot, Rs = Rupees, HH = household, OP = operational plan

Nepal but squatting on public land is not uncommon and is so far accepted in Hemja. Tibrekot forest is handed over for community management but the state has retained the property rights. That means the forest can be reverted to national forest if the community forestry operational plan is not followed. The forest next to Tibrekot's community forest is also community forest.

Table 7. Land use in Hemja VDC 2010.

Land use category	Area (ha)
Residential and arable land	999
Forests	821
Grasslands	3
Bushy	50
Sand/gravel	35
Unused open land	0
River bank area	61
Land covered by water	3
Total	1971

3.1.12 Government and other development/conservation projects

In Hemja VDC (2010), there is 1 government sub-health post, 4 private clinics and several small Tibetan traditional medicine posts; one university campus; one higher-secondary school; 5 secondary schools (among them two are government, 3 are private); one private lower secondary school; and 7 primary schools. There are 3 youth clubs targeting school children with games/sports and other extracurricular activities.

3.1.13 Calamities

No significant epidemics of diseases and famines are reported from the village. Houses and crops may be damaged by heavy rains and winds once or twice a year. Landslides in the steep hilly area above the settlements are common. There were three major landslides in the forest area in the years 1961, 1998 and

3.2 Chitwan District: Kankali Forest User Group

Kankali FUG is located in Chainpur VDC in Chitwan District. The FUG office is located in ward 8 and there are FUG members living in all wards (Figure 3). The households studied were selected randomly from among an updated list of members of Kankali FUG.
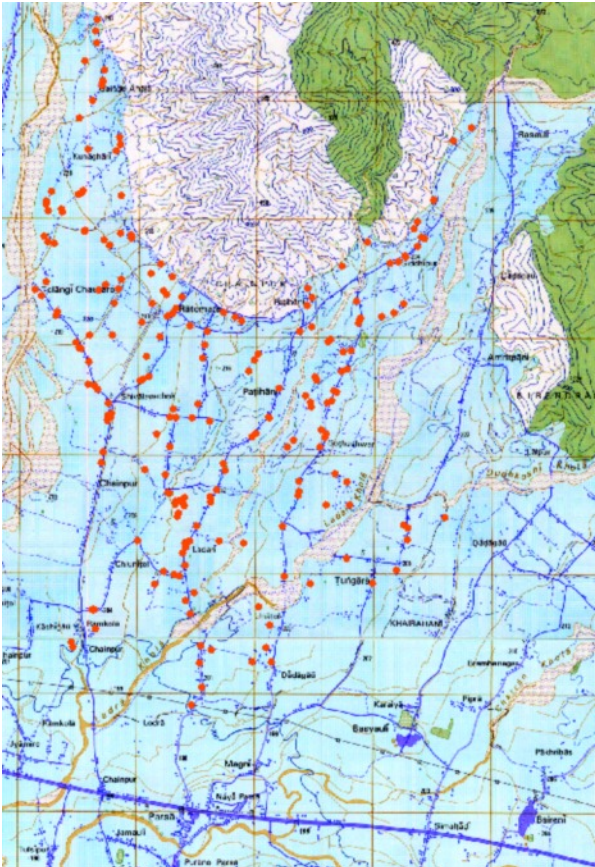
Figure 3. Chainpur VDC. Red dots indicate respondent household dwellings.

3.2.1 Brief history

The first village in Chainpur VDC was founded in ward 3 in 1958 and the youngest village in the area was founded in 1967. There are two FUGs within Chainpur VDC; Aazingare and Kankali. Kankali FUG was initiated in 1990 (2047 in Nepali calendar) and registered at the District Forest Office in 1995. The operational plan was also accepted and the forest handed over to the FUG in 1995. In 2000 a new operational plan was made. Around 1950 households are currently members of Kankali FUG. Kankali FUG accepts new members; the membership fee for new households formed

**The Kankali FUG has invested earnings from the forest in a swimmingpool yielding entrance fees.
Photo: C. Smith-Hall**

from existing member households is 500 Rs. whereas a new membership costs 9000 Rs. The annual renewal fee is set to be 100 Rs. but this is in reality not practised.

Kankali FUG manages a 37 ha picnic spot with swimming pool and small huts for renting. The entry fee for visitors is 5 Rs. per person and the huts can be rented for 300-500 Rs. per hut. This income source is growing to be as important economically as is the forest management.

3.2.2 Forest management
Kankali forest covers 760 ha and includes a plateau and sloping land. When the forest was handed over to the FUG the slope was practically barren and management activities consisted almost exclusively in protection and reforestation. Most of the sloping land regenerated with Sal (*Shorea robusta* Gaertn f.) forest and a small area was planted with Sisoo (*Dalbergia sisoo* Roxb.). This area was later found to produce sub-optimally and it was cleared.

The protection of Kankali forest has resulted in abundant regeneration and the status of the forest has improved significantly, according to both FUG member and the District Forest Officer in Chitwan district. From 2005 to 2010 the average growth of woody biomass in the forest was about 5800 m^3 per year whereas extraction was only about 1600 m^3 per year. A current challenge for the FUG is the required renewal of the forest management operational

plan. For forests larger than 700 ha an environmental impact assessment is required in addition to the operational plan, and the FUG lacks both technical expertise and funding for this purpose.

3.2.3 Demographics
In 2001 9960 people (1781 households) were reported to live in Chainpur VDC and in 2006 1542 households were members of Kankali FUG. According to the 2010 Village Profile Chainpur VDC had a total population of 19,112 and the total number of households was 3175; not all of these became members of Kankali VDC. The largest groups of people are Dalits and Darai, together comprising more than half of the total population of the area. Many people also belong to the Chhetri and Brahmin casts and Newars and Tharus are also living in Chainpur. The number of emigrants from Chainpur VDC from April 2009 to April 2011 was 302 while the number of immigrants in the same period was 582.

3.2.4 Villages
Settlement in Chainpur VDC is more or less contiguous and divided in hamlets (toles).

3.2.5 Major economic activities
In Chainpur VDC most people rely on agriculture for their livelihoods. Subsistence agriculture includes rice, maize and wheat as well as vegetables whereas cash crops include mainly vegetables such as tomatoes, cauliflowers and cabbage as well as a few fruit crops such as banana and papaya.

Some households get an income from household members working in government/service jobs as well as small businesses, mainly grocery shops. Many households also receive remittances from family members working abroad.

3.2.6 Seasonal calendar
Agricultural activities take place all year with rice being planted in June/July and harvested in September/October. Wheat, mustard and vegetables are planted in November and harvested in February where after another round of vegetables as well as maize can be

planted for harvesting in May. This last round is off season, but most people still put in the work effort in order to earn the extra money. In places with irrigation another round of rice may also be planted in April (Appendix D1).

3.2.7 Markets and market access

Chainpur VDC is located along the Mahendra Highway. There are smaller markets in nearby Parsa and Taadi. A bigger market is located in Narayanghat approximately 23 km west of the VDC along the highway.

Team and enumerators in Kankali FUG, Chitwan. Photo: HO Larsen

3.2.8 Forest products

The main forest products are firewood, timber and grasses. Grass is free and can be collected from the forest all year. Within the first five days of each month (following the Nepalese calendar) people can collect firewood from the forest for free. Firewood means wood on the ground or dry wood and use of axe or saw is not permitted. In other periods firewood can be bought for Rs. 5 per kg from the FUG.

The FUG members cannot collect timber from the forest themselves. Timber is collected by the Kankali FUG staff and distributed among the members once a year based on need. The FUG also buys additional timber from the neighbouring FUGs to sell to its own members. The prices depend on three species and timber product type (Table 8).

Table 8. Timber prices, Kankali Forest User Group.

Tree species / product type	Price (Rs) per cubic foot	Purchased from other FUG
Sal (*Shorea robusta*)log	1000	
Sal (*Shorea robusta*) board	1200	
Other, board	650-700	
Sal (*Shorea robusta*) log	2000	√
Karma (*Adinia cardifolia*)log	700	√
Saaj (*Terminalia alata*) log	750	√

3.2.9 Major land cover and land uses

The total area of Chainpur VDC is 2955 ha. The land uses have undergone only small changes and are currently comprised of the following (Table 9). The vegetation consists of forest area located in the northern part of Chainpur VDC (31.56% of total area) and grass land along the river as well as scrub and other vegetation scattered throughout the VDC. Around 3.5 ha is private forest, planted on peoples' private land.

Table 9. Land use in Chainpur VDC.

Land category	Area (ha)
Agriculture	1409
Vegetation	1216
Residential	225
Sand/gravel	48
Bare land	48
Water	9
Total	2955

3.2.10 Description of conservation areas

There are no conservation areas within Chainpur VDC.

3.2.11 Tenure institutions

As for Hemja VDC described above.

3.2.12 Government and other development/conservation projects

There is a total of 8 government funded schools in Chainpur, 5 primary schools (class 0-5), 1 lower secondary school (class 0-8), 1 secondary school (class 0-10) and 1 higher secondary school (class 0-10+2). 5 private schools as well as one Christian funded and one army boarding school are also located in the VDC. There is one sub-health post as well as more than 7 youth clubs.

A bridge is currently under construction under the National Planning Commission Programme and a Swiss Government sponsored river bank development project is on-going. Rural Reconstruction Nepal is present in Chainpur, arranging training within the fields of agriculture and food control.

A fish pond was constructed with money donated by a REDD project, giving people under the poverty line an opportunity for generating income by fishing. 10 % of the income generated by these people was given to Kankali FUG. Because of lack of management the FUG reclaimed the management of the pond and called a tender, wherefore the pond is now privately owned and people pay a user fee. The money from the tender was shared 50/50 between the FUG and the people previously fishing in the pond.

3.2.13 Calamities

A cholera epidemic took place in 1965. No epidemics have happened since. In 1974 a big flood occurred, which swept away and destroyed many villages. There was an earthquake in 1988 but this had no major effects on the area. Two floods occurred in 1993 and 2002. The former caused mainly a loss of livestock whereas the latter affected only a small area with few houses being destroyed.

3.2.14 Other relevant issues

After the end of the civil war camps of former Maoist soldiers were established in the Kankali community forest.

3.3 Mustang District: Lete and Kunjo Village Development Committees

The research site in Mustang covers Lete and Kunjo VDCs. These form part of the Annapurna Conservation Area, where conservation and development activities are implemented by the Annapurna Conservation Area Project (ACAP) implemented by Nepal's National Trust for Nature Conservation (NTNC). The study area is located in highland areas (above 1900 masl in elevation) in the Central Himalayan District of Mustang (around 28°34'-28°41' N and 83°33'-83°44' E). The terrain is highly variable with grasslands in rugged steep mountain slopes, forests in mid-slopes and plateaus, and the cultivated river valleys. The climate is temperate to sub-alpine with average monthly temperature ranging between maximum 20^0 Celsius and minimum -4^0 Celsius and the precipitation is on average 1267 mm per year with occasional snow cover in the valley. The area is commonly referred to as 'Thaksatsaya' which is lowest part of the permanent settlements along the Kaligandaki river valley between Tukuche in the north and Ghasa in the south.

The study area (Figure 4) is characterized by a considerable level of forest dependency, e.g. through use of forest fodder to feed livestock and forest litter as input in compost production. It is characteristic of rural Nepalese environments, with a lower HDI (0.45) compared to the national (0.53) (UNDP, 2005). More details concerning Lete and Kunjo VDCs are available from Rayamajhi (2006). Households studied were selected randomly from among the VDCs of Lete and Kunjo.

3.3.1 Brief history

The earliest settlers in the region were cave dwellers dating as far back as 800 BC. The
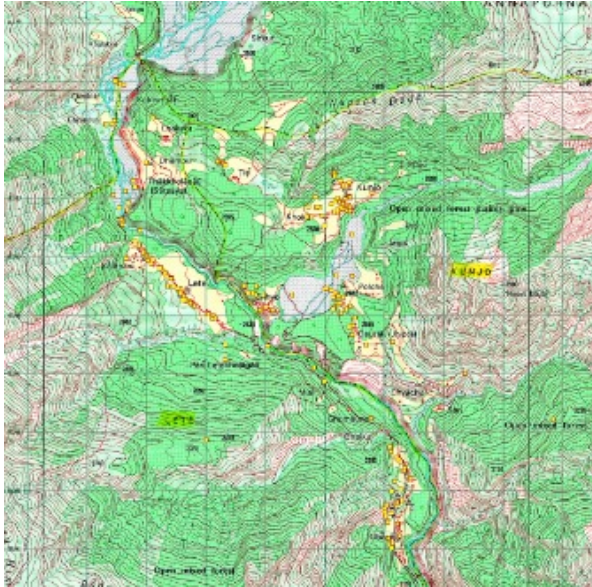
Figure 4. Lete and Kunjo VDCs in Mustang district. The yellow dots indicate respondent households.

currently dominant ethnic group, the Thakalis, that are of Tibeto/Mongoloid origin, are believed to have started living in this area about 500 years back. The area served as an important rock salt trade route from Tibet for centuries and as an exchange centre (highland-lowland) for Tibetan wool and salt for the Nepalese food grain from the south. Traders and pilgrims from neighbouring countries have visited the valley for centuries but actual exploration of the area and the culture started only after the 1950s. Since then mountaineering and trekking tourism have flourished in the area and pilgrimage still continues to the temple of Muktinath, a sacred place for both Hindu and Buddhist. The recent (1996-2006) insurgency was relatively peaceful in the area but it induced a decline in the number of tourists especially during the last years.

The administrative boundaries of Mustang district and the study area were dynamic in the recent history. During the *Panchayat* period that came into effect in 1959, the two villages Lete and Kunjo were one Village Panchayat until 1975 where two separate administrative units were created. The area remained under the active control of *talukdars* (government tax collectors) and *mukhiya* (traditional village

headman) until this system was officially abolished in 1956 (2013 BS). The *mukhiya* is still an active and respected leader in the villages.

The forests of Lete and Kunjo VDCs have for long supplied timber to the surrounding areas, both north and south. Starting from the beginning of the 1980s the infrastructure of the area was developed and in 1992 ACAP was established for a period of 10 years and renewed for another 10 years in 2002.

3.3.2 Forest management
As the entire Mustang district is a conservation area only minor extraction of forest products is permitted. Forest management is, de facto, limited to setting rules and procedures for timber extraction and grazing of animals in the forest. More detail is provided in section 3.3.10.

3.3.3 Demographics
The population of Mustang District has declined over the past decades, as is the trend in the remote areas of Nepal. The population

Fire is used to induce increased resin production, whereafter resin-soaked wood isextracted. Photo: N Khadka

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of Lete and Kunjo VDCs, however, has not declined much. The 2011 census lists the population of Lete as 839 persons and the population of Kunjo as 711 persons – compared to data from 2001 of 914 and 668 persons, respectively. Tourism is one of the main factors making both areas attractive for settlement.

In the study area the Thakali constitute the dominant ethnic group followed by the *dalit* (Damai and Kami), and others are the Magars and Chantels. The Thakali are the landlords who exercise control over the resources while the *dalits* typically provide manual labour. The other groups were originally working in mines, but now they primarily provide service (labour) on the farms. The Thakali are

divided into 4 clans: Gauchan, Sherchan, Bhattachan and Tulachan. From these other groups have evolved in the recent past (Vinding 1998).

A pattern of seasonal emigration has been apparent since historic times until today to cope especially with the low food production in the area. Also, it is estimated that almost half of the original inhabitants have emigrated due to lack of income generation opportunities (apart from tourism). Immigrants, on the other hand, are continuously arriving from the north, i.e. upper Mustang and the Tibet Autonomous Region of China, and from the south, i.e. adjacent Myagdi and Parbat Districts. Some

Table 10. Description of the survey villages in Mustang district.

Village name	Ghasa	Lete	Dhampu	Titi	Kunjo
Established	1800	1800	1800	1700	1700
Ward numbers	1, 2, 3	4, 5, 6	7, 8, 9	1	2-9
Households	56	76	42	12	151
Population	357	346	214	68	758
Sampled households	32	44	22	9	79

households from Kunjo have moved to Lete, leaving behind their land as fallow.

3.3.4 Study villages
The study was carried out in the two adjoining VDCs of Lete and Kunjo, separated by the Kaligandaki river. Lete VDC is economically more prosperous than Kunjo VDC because of its location, first on the Annapurna trekking trail, subsequently on the Beni-Jomsom road. From the early 1980s establishment of tourism lodges, government service centers and a regional vocational school has changed the demographic composition of Lete VDC. The construction of the Beni-Jomsom road further exacerbated the marginalization of Kunjo (located one hour away from the road) regarding communication, transport, infrastructure, service delivery, schooling,

medical service, and tourism business opportunities.

There are three villages in Lete VDC and two in Kunjo (Table 10). Information is provided separately for the two VDCs as they are two separate administrational units, the forest tenure in the area follows the administrational, i.e. VDC, borders, and the livelihood strategies in the two sites differ.

3.3.5 Major economic activities
Traditionally, the economy was highly dependent on agricultural and livestock farming with heavy reliance on forests. As the area was not well linked with urban or town centres due to lack of road and communication infrastructures, cereal and potato crop farming was heavily relied on. Shifting cultivation was

commonly practiced during those days. The opening of Mugling-Narayanghat highway in early 1980 and some years later Pokhara-Baglung highway in mid-1990 and soon afterwards extension of Baglung (Maldhunga)-Beni-Tiplyang sectors in early 2000 have increased the accessibility. More recently, the opening of the Beni-Jomsom road has tremendously increased market access and trade to more developed city centers. As a result of this, a lot of consumer goods have started to become available with relative ease at lower transportation cost. It becomes cost-effective to import food grains from the low lands and the subsistence style of living and producing is receding. This may be why agricultural activities are considered relatively less attractive today compared to earlier. The effects of the increased accessibility to the area on the forest area are still not known.

Tourism (establishment of hotels) is one of the most remunerative income generating activities in Lete, and other activities are agricultural production, trade, and remittances from family members working outside Mustang. In Kunjo the main economic activities are agricultural production and trade. Agriculture alone cannot provide a secure livelihood at these high altitudes. Notably, sheep and goats are raised in the mountains and moved down to the lowlands for slaughtering during the month of October (*Dasai* festival). Livestock (goat, sheep, yak, cattle) have generally provided important input to especially the household subsistence economy but currently the dependence on livestock is decreasing. In a family, the division of labour is made in such a way that members are involved in rotationally doing activities such as agriculture, livestock husbandry and trade simultaneously as livelihood strategies.

Forest income is mainly of subsistence nature, i.e. firewood, leaf litter, wild food. Cash income is derived from a limited degree of charcoal production (mainly by *dalits*), firewood, bamboo and timber (Box 2, 3). In Lete VDC, two furniture industries produce and sell processed timber and furniture.

3.3.6 Seasonal calendar

Seasonality is an important characteristic of the overall economic system prevalent in the study area. There is high seasonality in agriculture, animal husbandry, the tourists, the pilgrims, and forest use. Basically most of the agricultural activities, livestock movement and forest product collection are confined to the autumn and spring which is also the peak tourist season. Therefore, tourism directly competes with the human labour in the peak season while there is no high demand of labour during the off-season. However, an advantage is that the period with few tourists offers some time for the vegetation conducive for natural ecosystems functioning.

3.3.7 Markets and market access

Distance and road quality are major barriers in the development of markets for the locally produced goods. In 2006, Beni, headquarter of adjacent Mygadi district was the nearest town about 38 km which is linked with an all-

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Box 2. Details on income from timber in Mustang, 2006.

- Committee members who marks the tree for felling gets nominal fees @ Rs. 100 per tree marked for felling

- Committee gets royalty @ Rs. 50 - 250 per cbft of timber sold

- Labor employment to the persons involved in felling and conversion of timber @ Rs. 400-600 per day

- Labor employment for transportation of the timber to the village or to the nearest road head @ Rs. 200-400 per day

- Tractor for transportation of the timber @ Rs. 100 per ft3 from Lete to Jomsom

- Labor employed in the furniture industry as carpenters @ Rs. 400-600 per day

weather road to the rest of the country. Mules were the main mode of transportation linking the study area to markets in Beni, which cost approximately Rs. 8 per kg as freight charge and took at least two days to reach the consignment. With the completion of the Beni-Jomsom road producers now have better access to larger markets where they can fetch better prices for the products. The effects of this new road, on market access as well as the prices of products from the study area, is the topic of ongoing studies. District headquarter Jomsom is 27 km away, and is another market with a regular flight linking to the regional headquarter in Pokhara. Due to strong wind and bad weather the flights are not certain and transportation cost of goods is very high and largely unfeasible. Farmers sell the agricultural products in the local markets, where tourism creates demand, as well as export to Beni and Jomsom.

There are two saw mills in Lete VDC (both unregistered) and one in Kunjo (not registered and not in function during 2006). The total saw mills listed in the lower Mustang area were 15 of which 8 were not registered officially according to the Conservation Area Regulation. The saw mills were established from 1979. Most of these saw mills used to rely to some extent on the lumber permit issued from Lete and Kunjo forests. Villagers can obtain permit for the extraction of small timber of seabuckthorn for the manufacture of ploughs. Agricultural tools and implements are produced, sold and bought only locally.

3.3.8 Forest products

Timber and firewood are the main forest products providing both cash and subsistence income in Mustang. Leaf litter is used in the agricultural practice and fodder for feeding animals. Boxes 3 and 4 provide an overview of the forest products used in Kunjo and the rules pertaining to these. It is noteworthy that no products are made especially available to the poor in 2013.

Table 11. Land use in the study area (based on visual interpretation of aerial photo 1996, topographic map 2002 and IRS P6 satellite image 2006).

Land category	Lete VDC (ha)			Kunjo VDC (ha)		Total area (ha)	Area (%)
	Ghasa	Lete	Dampu	Titi	Kunjo		
Natural forest	899	1065	262	99	2022	4347	34
Closed canopy (> 40%)	666	1005	224	78	1771	3744	30
Open canopy (< 40%)	234	60	38	21	251	603	5
Plantation	0	9	0	0	0	9	> 1
Cropland	60	84	36	26	177	381	3
Fallow	22	62	85	21	84	274	2
Shrubs	158	98	61	49	296	661	5
Grassland	848	903	165	51	1930	3896	31
Residential	5	13	3	1	7	29	> 1
Wetland	2	0	57	5	153	216	2
Others	6	248	0	0	2623	2877	23
Total	2000	2481	667	252	7291	12690	100

Area of Lete VDC = 53.4 km² and Kunjo VDC = 71.6 km² (Mustang District Profile, 2002).

Box 3. Rules governing the use of major forest products in Kunjo, 2006.

Product	Rule
Leaf litter (sanpat)	There exist open period and restricted period (Fukuwa and Banda) for collection. There is a fixed period for collecting the sanpat from the forest, which last for about weeks during the winter, generally after the first flush of snow. Violators get strong punishment that is decided by the Mukhiya.
Dried firewood/ dead wood	The dead wood in the forest floor and dead branches are open for collection all throughout the year.
Timber	Requires permits (purji) issued from the committee after submitting application with stamp worth Rs. 1. Application charge is Rs. 10 and per cft charge is Rs. 6. First the committee evaluates the application whether or not to grant timber to applicant according to their need (Need based distribution system). Application and cft charge will be paid after approval of the application. Since the last 2 and ½ years commercial timber harvesting was banned, only subsistence need was granted for 2 HH in house repairing in the village only for serious and urgent cases in Kunjo VDC.
Poles	For plough and ladder manufacture collection is allowed free of cost but with permission from the FMSC
Taxus species	Strictly regulated for cutting as timber however villagers collect the branches of this species in small quantities as fuelwood for a special ceremony
Bark	Cyprus tree bark is collected for the purpose of roofing and partition of houses and also for the purpose of making incense. Complete ring debarking of young Cyprus tree is regulated by the FMSC
Grass	Grass cutting season especially for the collection of steep slope grass (sanchi grass) is set by the mukhiya which is open generally from late August (*Bhadra 5).*
Grazing/browsing	Grazing and browsing directive/permits in the summer and winter rangelands are issued by the mukhiya. Herders have to pay to the mukhiyas. Seasonal movement of animals in favor of utilization of the summer and winter grasslands is strongly practiced
Bamboo	Bamboo collection is permitted by the mukhiyas who declares open and closed periods for bamboo stem collection during winter. Bamboo shoots can be collected during the summer (June/July) by one-time payment of Rs. 15 to the committee
Seabuckthorn	Seabuckthorn fruit collection is opened during beginning of November for a limited period when the fruits are ripe
Pine resin wood	Burning stick: extraction by peeling-off mature pine trees is prohibited and is allowed only from stumps and dead trees

Box 4. Details on forest product collection in Kunio, 2013.

Product	Collection period(s)	Restrictions	Fee	Rules	Other information
Timber	April, August and December	Unlimited to insiders for personal uses; restricted to outsiders according to availability of dead, dying and decayed trees	Approx.. 10 Rs per cbft for insiders, 110 Rs per cbft. for outsiders; limited variations apply according to semi-autonomous ward-based subcommittees	Regulated by permit; availability of timber for outsiders depends broadly on extent of fallen and dying trees	Timber permits managed by sub committees through CAMC. ACAP and VDC must authorize permits for nonresidents and industries
Green firewood	All year	Regulated according to subcommittee	No fees	Sale banned; Banned species by ACAP: all pines, walnut, taxus bacta, cypress, rhododendron, seabuckthorn, hemlock, and any other edible fruit bearing trees; no restrictions on tools	-
Dry firewood	All year	No limit for any users anywhere in the VDC	No fees	Sale banned; no restrictions on tools; all shrubs live or dead that do not produce fruit are open to cutting, except for Rais (useful for agricultural implements)	-
Leaf litter	Banned - near villages open from 4-10 days to 1 month/year Open access: Farther from villages, collection mid Nov-April	No restrictions, subsistence only	No fees	Free. Regulated by Village Assemblies and mukhaya who inform annually what areas are open; Banned areas regulated to approx. 4 loads for 4 HH persons per day during which they are open.	-
Charcoal	-	-	-	Charcoal cannot be made purposefully, but a few HHs sell used firewood as charcoal to outside hotels without penalty	Committee also aware that many HHs use their used firewood as charcoal for bartering, not for cash income, and this is OK.
Nigalo (small bamboo)	Nov – July	None	No fees	Regulated by mukhaya; only HHs with the skills, and maybe a few HHs that are in need for wicker works can harvest. Free and ok to sell products. No license required.	Only 10-15 people have skills to make the products. It is difficult to collect (distance). Cultivate not success. Smaller shoot, 'tusa', is illegal to sell.
Seabuckthorn fruit, and padam chal 'chulthe' pickle (black pickle)	Opened for harvest when ripe, (e.g. seabuckthorm fruit in late Nov till late January).	None	No fees	Free of charge. No licenses required. Mukhaya and/or local village committee decide exact days for their local trees, but people can harvest from anywhere in the VDC.	Individuals harvest and can sell, both internally and externally at whatever price they want. A few groups in Choya village supported by COMFORM sell juice locally.

Load = backload/bhari. cbft = cubic foot. Rs = Rupees. HH =

A Forest Management Sub-committee (FMSC) assesses applications submitted by households for timber. 'Need' is the most important assessment criterion. There is no exact limit on the quantity of timber that can be allocated to a household. However, amounts are around 400-500 cbft and it will primarily be dead or dying wood. An FMSC member will indicate and measure the wood allowed for collection. Of the royalty collected 75% is retained by the FMSC and 25% by the CAMC. The royalty of timber has been increased from 3 to 10 Rs. because of dead wood shortage.

3.3.9 Major land cover and land uses

Land use in the study area is shown in Table 11. The estimates are based on time series aerial photos, topographic maps, satellite image and oral history from key informants. Area estimate is subject to reasonably small errors due to difficulties afforded by the steepness of terrain and low image resolution used in the land use interpretation. The topography is rugged with slope higher than 15 degrees and a large part is above 3000 m altitude making permanent agriculture unsuitable. The region is characterised by areas of rain-fed fields whose fertility is mainly maintained through use of composted manure.

More than 50% of the original agricultural land had been converted into fallow land by 2006. Some of the very old fallows have converted into forests. Forest is turning into shrubland in some places due to human use, but in others the forest seems to be regenerating.

3.3.10 Description of conservation areas

The Annapurna Conservation Area (ACA) for biodiversity conservation and sustainable tourism development is a multiple land use area established under the third amendment to the National Park and Wildlife Conservation Act (1973) and the Conservation Area Management Regulation (1996). The ACA was extended to its current size of 7600 km² in 1992 by including also the part of Mustang district lying to the north of the Himalaya. The overall management of the ACA is carried out by the

National Trust for Nature Conservation (NTNC), a national NGO, through participation of the local community of natural resource users. The protection status of the area is Class VI according to the IUCN category of protected areas. In this category all traditional land uses are permitted but large-scale conversion is restricted. The ultimate goal of the project is to develop the local capacity for managing the area so that it can be handed over to local user groups. The project raises funds from entry fees and donations, and provides training to the local people.

The management of the area is delegated to a decentralised non-political VDC level Conservation Area Management Committee (CAMC) with 15 elected members from within the wards of the VDC. Each VDC level local government chairperson is represented in the CAMC as a member for ensuring coordination. For each CAMC under the ACAP a written constitution and operational plan exist, regulating the use of the forest and other natural resources. It sets out clear rules such as, assessing the timber demand, issue of timber permits, marking trees for felling, and monitoring and supervision of conversation activities. This document is prepared in agreement with and signed by the chairperson of the CAMC and the Chief Conservation Officer of ACAP. The CAMC executes its conservation and development activities through the provision of the area based forest management sub-committee, the tourism management sub-committee, and ward level women's (mother) group committees. Rules regarding the use of a number of forest and environmental products are strictly adhered to and breaches are seriously penalised. The plans are ambitious in terms of activities and targets but poorly supported with financial resources to implement them.

The CAMC raises funds through royalty on timber, bamboo (nigalo), stone and sand. Timber is allowed for house construction for which royalty to outsiders (non-users) was Rs. 55 per cbft (government rate) and for the local forest users (FUG members) it is Rs. 6 per cbft

which was only 3 Rs. until 2004. This increase in royalty is due to unavailability of dead and dried wood in the accessible forests. ACAP provides funds to the CAMC for the implementation of activities such as training, community development and conservation education and provides monthly salary of the CAMC secretary.

3.3.11 Tenure institutions

Three forms of tenure institutions – government, community and private – exist in the study area. Large patches of private forests do not exist, due to the promulgation of the Private Forest Nationalization Act, 1957. All rangelands (pastures) were nationalized in 1976 and brought under the control of local governments. The National Parks and Wildlife Conservation Act 1973 does not allow change in any existing land use types while the Local Self Governance Act 1998 delegates authority to collect 30-50% tax on all natural resources to the local government.

All forest areas fall under the community management, whereby the local forest user groups are responsible for setting up and strictly enforcing of rules. Forest areas are demarcated and the management responsibilities are given to the FUGs with

Yak are reared for milk and meat, Mustang district. Photo: N Khadka

specific rules for the use and collection of revenue for products, as specified in the Operational Plan. There are a few small parcels of private forest and private plantations in the area. The government has established a land ceiling of 2 ha private land per individual for the hills and mountains.

The grasslands are categorized as low altitude grazing land (*aaulo charan*) and high altitude grazing land (*dafe charan*) differentiated roughly by the 4000 meters altitude boundary. Both are under the community management which is governed by traditional rules set at a higher level (council of *mukhiyas*) encompassing a larger sphere of users that includes transient herders and wild product collectors. Residents can graze their animals for free while outsiders pay one young sheep per sheep herd and rs. 100 per mule to the council of *mukhiyas*. There is good coordination in settling of rules and revenue collection between the CAMC and the *mukhiya*.

Agricultural lands are basically privately owned with strict enforcement of ownership. Where owners of private land left fallow do not reside in the area open access conditions prevail, except for timber. The shrub-lands, river banks, steep slopes and snow covered areas are under government ownership under a *de facto* open access regime. However, stone, sand, slate and clay mines located within the VDC boundaries are managed by the CAMCs in coordination with the respective VDCs against charging of nominal royalty.

Intensive utilization of high altitude pine forests, Mustang District. While harvest may locally be high, forests are spreading onto previously farmed agricultural terraces – deforestation is not an issue. Photo: C Smith-Hall

3.3.12 Government and other development/conservation projects

A number of programmes and projects have been introduced in the area to improve livestock and agriculture management, infrastructure and conservation of natural resources – see Rayamajhi (2006).

3.3.13 Calamities

During the survey year (2006) farmers reported severe loss in the production of potato and barley crops due to untimely rainfall and snowfall (early rainfall and snowfall occurred when not required and did not occur when required). Similarly, Mr. Sat Prasad Gauchan,

3.4 Gorkha District: Simjung and Gyachchok Village Development Committees
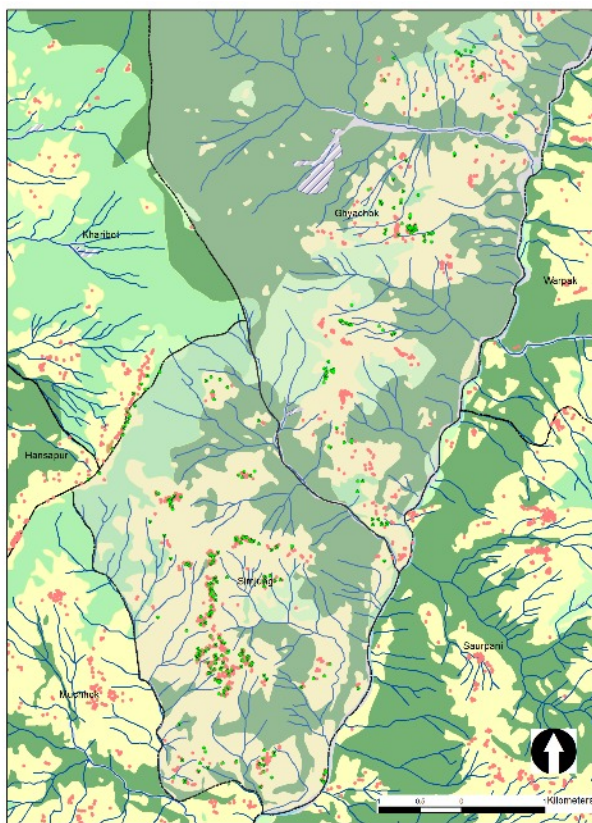
Figure 5. Map of Simjung and Gyachchok VDCs **in Gorkha District.**

The study area in Gorkha District includes the VDCs of Simjung and Gyachchok (Figure 5) that are located approximately 46 and 55 km from Gorkha Bazaar which is the main town in the district. The altitude of both VDC's ranges from 750 meter (Daraundi River) to more than 3000 meter; the large variation means that forest types and agricultural potential varies in the area. The climate is temperate, with mean annual precipitation around 1500 mm. Gorkha District spreads from 27'40" E to 28'17" E and 80'17"N to 84'35"N. A dust road with daily bus connection to Gorkha Bazaar is accessible within 1 hour walking distance from the centre of Simjung VDC and 2 hour walking distance from the centre of Gyachchok VDC. During the monsoon season when the road conditions are heavily affected by the rain, there is around 15 km, equalling 3 hours walking, from the centre of Simjung VDC to where the bus terminates. In between the survey rounds in 2008 and 2012 a road was constructed that allows vehicles with 4-wheel drive to reach both VDCs. The road ends in Gyachchok.

Respondent households were randomly selected from the two VDCs using official population lists that were updated for the purpose. All households were member of at least one of the 13 FUG in Simjung, while in Gyachchok FUGs were in the process of becoming registered in 2008 and in 2012 4 were present.

3.4.1 Brief history
-

3.4.2 Forest management

Till the end of 2008, there were12 formally registered and one, informally managed FUG in Simjung VDC. Though the settlements in the VDC were distributed in varying distance from the forests, most of the households were found to be the member of more than one FUG. In Gyachchok, till the end of 2008 there were only two formally registered and one, informally managed FUGs in the VDC. The settlements in the VDC are distributed in varying distance and most of them use forest

resources from natural forest which is still under the control of the government.

3.4.3 Demographics

The development in population in the two VDCs is shown in Table 12. Gurungs account for around half the population. People belonging to the Chhetri or Brahmin castes is the second largest population group followed by *dalits* (Kami, Sarki, Damai). Also Tamang, Magar, Muslims and Newars are living in the area. In Gyachchok the total number of households is 436 and the total population is 3014 divided between 1460 females and 1554 males. Most people belong to the ethnic group of Gurungs but also Tamang and Dalit people are living in the area. Emigration from the study area to Chitwan, Gorkha Bazaar or Kathmandu takes place, but is not always registered formally if property is not sold.

3.4.4 Study villages

Settlements in Simjung are spread out over the VDC whereas in Gyachchok there is one settlement. The main hamlet of Simjung and Gyachchok are situated approx. 2-2.5 hours walking apart.

3.4.5 Major economic activities

Households in Simjung and Gyachchok mainly rely on agriculture and livestock for their livelihoods. Crops include rice, millet, maize, wheat and potatoes. Livestock is mainly cattle, buffaloes, goats and in higher altitudes also sheep. Many households also keep chicken, which are used for own consumption and sale as well as for sacrificing during religious festivals. For some households wild animals (like monkeys, porcupines and wolves) are causing loss of crops and small livestock.

In both VDCs many of the households receive pensions from the Indian army and some households receive remittances from family members abroad. Many households also produce local alcohol for own consumption as well as for selling and a few households also have small shops.

3.4.6 Seasonal calendar

In the spring from March to May the temperature is moderate and many people have free time to engage in off-farm activities. June to August is the monsoon period and the weather is hot and wet with daily rain and occasional thunderstorms in the evenings. This is when people plant their crops, including rice. September and October are pleasant months and this is a time for celebrating festivities (Dashai and Tihar). December to February is harvesting season and occasional snowfalls may occur at higher altitudes.

Gyachchok, Gorkha. Photo: BBK Chhetri

3.4.7 Markets and market access

There is a small market located in Baluwa around one hour walking distance from Simjung VDC centre. People normally sell their crops either here or in another small market located 2 hours walk from Simjung VDC centre in Bhachchek. With the extension of the motorable road the accessibility to the area has greatly increased.

3.4.8 Forest products

Main forest products are firewood, timber, wild vegetables, fodder and ground grass. Firewood and some NTFPs are marketed outside the VDC, in the same location as agricultural products.

3.4.9 Major land cover and land uses

The total area of Simjung VDC is 4512 ha out of which 658 ha (14 %) is agricultural land and the rest is common pasture and forest covered land. The total area of the Gyachchok VDC is 3279 ha out of which 812 ha (25 %)

is agricultural land and the rest is common pasture and forest covered land (DDC, 2007). Some of the previously farmed land is currently left uncultivated due to migration without sale or renting out of property.

Production of plates from sal (*Shorea robusta*) leaves is an inome generating activity, Gorkha district. Photo: BBK Chhetri

3.4.10 Description of conservation areas

There are no conservation areas in Simjung and Gyachchok VDCs.

3.4.11 Tenure institutions

In Simjung most of the forests near the settlements are managed by the FUGs whereas in Gyachchok the majority of the forest is still managed by the government and only a few forest patches have been handed over to the community. In both Simjung and Gyachchok the farm lands are privately owned, and some of the poorer households rent land for farming from the land owners.

3.4.12 Government and other development/conservation projects

In Simjung there are 8 primary schools, 1 lower secondary school, 1 higher secondary school as well as a recently started private school, which has nursery and kindergarten, and plans to add grades in the future. There is a youth club, a community development advisory organization as well as a sub-health post. In Gyachchok there are 1 sub-health post, 2 primary schools, 1 secondary school and one primary school that is planned to be turned into a secondary school. There is one saving-credit organization in Gyachchok and 3 such organizations in Simjung.

Money from an alternative energy programme and the VDCs has been used to fund micro hydropower facilities. Currently 250 households in Simjung and 95 households in Gyachchok have no electricity. A new micro hydropower facility is under construction in Gyachchok and this is intended to secure that all households in the VDC have access to electricity in a year's time.

A project run and completed by a national NGO has provided all households in Gyachchok with toilets and water and currently another NGO is running a program through which chimneys over kitchen ovens are being constructed. In Gyachchok, a national NGO runs a drinking water programme and the VDC administers funds donated from a late village resident for providing monetary support for building toilets. In Simjung CARE Nepal, in association with FECOFUN, has provided good governance classes as well some interaction programs to females of all of the FUGs of the VDC.

3.4.13 Calamities

Historically Simjung VDC has suffered from a number of non-severe calamities. These include floods in 2001 and 2003, landslides in 1954, 1993 and 1994, crop disease in 2005, livestock disease in 1993 and 2007 and forest fire in 1967. The area also experienced drought in 1996, hailstones in 1966, 1967, 2005 and 2008, as well as diarrhoea in 1996. Gyachchok VDC also experienced crop disease in 2005 and livestock disease in 1993 as well as hailstones in 2005 and 2006. The most recent calamities experienced were livestock diseases, drought and forest fire. The forest fire affected 200 ha in Simjung and lead to the destruction of ground vegetation but did not affect trees. Drought occurred in Simjung in the summer season in 2011 and in both VDCs in March-May 2012, affecting the planting of maize. Livestock disease affected 10-15 households in Simjung in 2010 and 5-7 households in Gyachchok in 2011.

4. Additional research

A number of surveys were undertaken to supplement the income survey. For each additional survey is listed where the information has been published. In some cases data analysis is still going on and additional publications are expected.

4.1 Firewood consumption in hotels in Mustang, 2006

The PhD student working in Mustang, Santosh Rayamajhi, focused on tourism, as this is an important component of the local livelihood strategies. To quantify the additional consumption of firewood implied by tourism a survey of firewood consumption in hotels was carried out in 2006 (Appendix B1).

> Christensen, M., Santosh Rayamajhi, and H. Meilby (2009). Balancing fuelwood and biodiversity concerns in rural Nepal. Ecological Modelling 220(4): 522-532.

4.2 Community wood outtake

Information on wood extracted by the FUGs or CAMCs was collected to complement the information provided by the household survey (Appendix B1).

> Meilby, H. ; Smith-Hall, C.; Byg, A.; Larsen, H.O., Nielsen, Ø.J.; Puri, L.and S. Rayamajhi. Are forest incomes sustainable? Household extraction and forest productivity in community managed forests in Nepal. World Development. Published online 22 June 2014.

4.3 Traditional medicine use and medicinal plant consumption

To shed light on the use of traditional medicine and medicinal plant consumption across physiographic zones surveys were conducted among the households included in the PEN survey. Two different surveys were implemented in 2009 and 2012 (Appendix C1, C2). The 2012 survey was designed by PhD student Rikke Stamp Thorsen. :

> Thorsen, R.S. (2013) Natural resources for human health: the reliance on medicinal plants for health care in rural Nepal. Presented at the International Conference on Forests, People and Climate Change, Pokhara, Nepal, August 28-30, 2013. Institute of Forestry, Pokhara.

> Byg, A.; Theilade, I. and H.O. Larsen (2012). Changes in health and health care in Nepal. Presentation at 13th Congress of the International Society of Ethnobiology, Montpellier.

4.4 Law enforcement in community forestry

In the study site in Gorkha district PhD student Bir Bh. Khanal Chhetri conducted a survey related with the occurrence of acts violating the rules set by the FUGs (Appendix C3). The survey was carried out among respondents to the PEN survey in 2008.

> Chhetri, B.B.K., Larsen, H. O. and C. Smith-Hall (2010): Stakeholder perspectives on patterns and causes of forest crimes in Community Forestry in Nepal. Scandinavian Forest Economics, 43:353-364.

> Chhetri, B.B.K., Larsen, H. O. and C. Smith-Hall (2012). Law Enforcement in Community Forestry: Consequences for the Poor. Small-scale Forestry11(4): 435-452.

4.5 Shocks to livelihoods

In the study site in Gorkha district a survey of experienced shocks and applied coping strategies was undertaken among respondents to the PEN survey (Appendic C4). :

> Chhetri, B.B.K. (2011): How do households cope with income shocks? Evidence from rural Nepal.

In: Natural Resources Management: Reviews and Research in the Himalayan Watersheds II, a special publication of NUFU HIMUNET Project, Vol II, Balla, M.K. and Singh A.(eds), p. 50-62, Tribhuvan University, Institute of Forestry, Pokhara, Nepal.

4.6 Climate change, gender and livelihood trajectories

To understand livelihood dynamics and contextual factors more in depth a survey was developed to capture issues not apparent from the PEN data (Appendix C5).

Larsen, H.O. and M. Pouliot. Who extracts Nepal's forest products? – a gendered perspective. In: Balla, M.K. Et al. (eds.), Proceedings from the International Conference on Forests, People and Climate Change, Pokhara, Nepal, August 28-30, 2013. Institute of Forestry Pokhara. In press.

Byg, A.; Theilade, I. and H.O. Larsen. Three decades of change in villages in western Nepal. Presentation at the Third International Science and policy Conference on the resilience of social & ecological systems, Montpellier, 4-8 May, 2014.

4.7 Wealth dynamics

Post doc Øystein Juhl Nielsen collected data on causes for wealth dynamics among respondent to the PEN survey in 2012

The little available flat land is all used for agriculture, middle Mustang District. Photo: C Smith-Hall

(Appendix C6). Data analysis is yet to be finalized.

4.8 Perceptions of climate change

Post doc Anja Byg collected data on how rural Nepalese people perceive and adapt to climate change (Appendix C7). The study was carried out among a sample of the respondents to the PEN survey.

> Byg, A. (2012). Perceptions of climate change and (lack of) local adaptation in Nepal. Presented at the 13th Congress of the International Society of Ethnobiology, Montpellier.

4.9 The implications of road establishment on livelihoods

A study of the implications of the newly constructed road on livelihoods in Mustang is undertaken by PhD student Lindy Callen Charley. He collected additional livelihood data in a comparable site in Myagdi district, the village of Lulang (Box 5, appendix C8, D3). Data analysis is yet to be finalized.

4.10 Citizenship

PhD student Rebecca Leigh Rutt collected data on the forms of citizenship available with local government and FUGs as civil society organizations, respectively. Questions to study this topic were added to the household surveys in 2012 (Appendix C9).

> Rutt, R.L. Constellations of citizenship in post-conflict rural Nepal. Submitted to Political Geography January 2014.

Firewood stacked for the winter, lower Mustang district. Photo: C Smith-Hall

Box 5. Rationale for the choice of the village of Lulang as a control site.

To help better understand the effects of such infrastructural development on the focus VDCs of Lete and Kunjo, we also selected a control village. This village is very similar to our focus villages, with the major difference being that it remains remote, with no motorable road joining it to town centres. The main reason for using a control village is to help identify which changes in the focus villages can be attributed to the new road and distinguish them from changes brought about by other major phenomena, such as the end of the Nepal civil war and the changing levels of trade across the "Chinese (Tibetan) boarder". The village of Lulang, will be used as a "control village" in this study and is briefly described below. Table 1 also provides a general comparison of treatment and control villages, which is based on "a framework for integrating villages, vegetation and non-timber forest products in central Nepal (Olsen, 1996)".

Lulang VDC lies at approximately 2250 masl in the district of Myagdi in western Nepal – bounded by Muna VDC to the east, Baglung district to the west and south and Gurja VDC to the north. Lulang is about ~32 km or 8 hours walk from the nearest completed "dry weather road" in the town center of *Darbang*, which in turn is 3 hours by bus from the district headquarters of Beni. The nearest "all weather road" connecting Lulang, Lete and Kunjo to the rest of the country stems from Beni. According to the last census in 2011 there are approximately 236 households in Lulang VDC with a population of 1262 villagers.

Agricultural production is the primary source of livelihood maintenance in Lulang VDC. Production is mainly for household subsistence and in the case of excess; it is traded within the village. The village is growing in popularity as the trekking route which leads to the snow-cap mountains in Gurja and to the Dhorpatan Hunting reserve goes right through it. Trekkers normally spend some time in the lodges and tea shops on the way through the village. There is also a basic camp site, which is managed by the VDC officials, for trekkers willing to camp in the village. The trekking route going through the village of Lulang is not as popular as the route which passed through Lete and near Kunjo. Other livelihood strategies include livestock production, wage work, business, extraction of forest and environmental resources and some seasonal migration for employment in other villages.

The forests in the village fall under two main systems of management: i) FUG managed areas of forest, which are managed by five FUGs in the village and ii) government forest, through the district forest office. Transportation to and from the village is by foot and the use of horses and mules for carrying products. Electricity is provided by a hydroelectric power plant servicing the village. Tap borne water is available only at strategic points within the village. Various NGOs and INGOs function in Lulang VDC, with the primary aim of reducing poverty and improving living conditions within the village.

5. Literature

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Appendices

A. List of researchers involved

B. PEN Questionnaires used in the three survey rounds

B1 Survey instrument 2006, including firewood, community wood outtake, tourism
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D. Contextual data

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F. The validity and reliability of own reported values

G. List of papers based on the Nepal PEN data

Appendix A List of researchers involved in the Nepal PEN study

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Bir Bh. Khanal Chhetri

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Krishna P. Dahal

Abhoy Kumar Das

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Mariéve Pouliot

Rebecca Rutt

Carsten Smith-Hall

Rikke Stamp Thorsen

Solomon Zena Walelign

Gurung woman. The Gurung are a dominant ethnic group in Gorkha district. Photo: BBK Chhetri

Appendix B1 Survey instrument 2006

*The questionnaire gathers the information required in the common data bank (CDB) of PEN. The questionnaire **must** be used together with the Technical Guidelines, which specify common codes to be used, define key concepts, and elaborate and explain the questions in the questionnaire.*

(LETTERS IN RED ARE ADDITIONS FOR TOURISM, BLUE ARE ADDITIONS FOR FUEL/TIMBER AND GREEN ARE ON TOP OF PEN)

Technical notes:
* each data cell has a unique 8 digit code in the following format: SSPTLLCC
SS: survey number: C1,V1,V2,H1,H2,Q1,Q2,Q3,Q4
P: paragraph or section under within each survey: A, B, C...
T: table or question (if not in a table format) in each section: 1-9
LL: Line number for questions in tables: 01-99
CC: column number for each table (in a few cases for sub-lines): 01-99
* indicates that cell information will not be entered into the database.

Table of content

Village Survey 1 (V1)

A. Geographic and climate variables

1.	What is the name of the village?	*(name)**	*(village ##)*
2.	What are the GPS coordinates of the centre of the village?		
3.	What is the latitude of the village?		*degrees*
4.	What is the longitude of the village?		*degrees*
5.	What is the altitude (masl) of the village?		*masl*
6.	What is the aspect in which the village is located?		*N, S, E, W*
7.	Where is the village located with respect to slope?		*ridge, middle, valley*
8.	What has been the average annual rainfall (mm/year) in the district during the past 20 years (or less, see guidelines)?		*mm/year*
9.	What is the coefficient of variation in rainfall for the past 20 years?		

B. Demographics

1.	For how many years have people lived in this village *(or settlement when large villages, cf. guidelines)?*	*years*
2.	What is the current population of the village?	*persons*
3.	How many households live currently in this village?	*households*
4.	What was the total population of the village 10 years ago?	*persons*
5.	How many households lived in the village 10 years ago?	*households*
6.	What proportion (approx.) of the total current households has moved to the village over the past 10 years (in-migration)?	*%*
7.	What proportion (approx.) of the total households 10 years ago has left the village (out-migration)?	*%*
8.	How many different ethnic groups or castes are living in the village?	

C. Infrastructure

1.	What proportion (approx.) of the households in the village has access to electricity (from public or private suppliers)?	%
2.	What proportion (approx.) of the households in the village has access to piped tap water?	%
3.	How many banks and other formal credit institutions are present in the village?	
4.	Are *informal* credit institutions such as savings clubs and money lenders present in the village?	*(1-0)*
5.	Is there a post office/telephone office in the village?	*(1-0)*
6.	Is there any health centre available in the village?	*(1-0)*
7.	Is the village connected to a road useable by cars all season?	*(1-0)*
8.	**If not** connected ('0' on question above), what is the distance to the nearest road usable all season?	*km*
9.	Is the village connected to a river navigable all seasons?	*(1-0)*
10.	**If not** connected ('0' on question above), what is the distance to the nearest river navigable all season?	*km*

11. What is the distance from the village centre to the nearest … (in km and in *minutes* by most common means of transport)		**km**	**min**	*code-transport*
	1. district market			
	2. market for major consumption goods			
	3. market where agric. products are sold			

		4. market where forest products are sold			

D. Forest and land cover/use

1. Land categories in the village.

Category	1. Total area (ha)	Ownership (in ha)			
		2. State	3. Community	4. Private	5. Open access (*de facto*)
Forest:					
1. Natural forest					
2. Managed forests					
3. Plantations					
Agricultural land:					
4. Cropland					
5. Pasture (natural or planted)					
6. Agroforestry					
7. Silvipasture					
8. Fallow/idle					
Other land categories:					
9. Shrubs, bush					
10. Grass-/rangeland					
11. Residential areas, infrastructure					
12. Wetland, swamp					
13. Other:					
14. Total land					

2. What are the main forests and users of the forest in the village?
Note: The purpose is to link forest types, users and products, see the Technical Guidelines for further elaboration.

Type of forest (*code-forest)*	Ownership (*code-tenure*	Approx. area (*ha)*	Main users[1] (max. 3)			Main products (max. 3) (*code-product)*		
			Rank 1	Rank2	Rank3	Rank1	Rank2	Rank3

1) Choose the most appropriate among the following groups (as some do overlap): 1=all villagers; 2=villagers that are members of FUG; 3=villagers not members of FUG; 4=small-scale commercial users in the village; 5= large-scale commercial users in the village; subsistence oriented users in the village; 6=subsistence oriented users from outside the village 7=small-scale commercial users from outside village; 8=large-scale commercial users from outside village; 9=others:

3. Does the village practice any form of active and deliberate indigenous forest management?

Type of management	Code[1]
1. Planting of desired trees	
2. Cutting down undesired (competing) trees	
3. Protecting certain desired (patches of) trees in the forest to promote the natural regeneration of these species	
4. Protecting areas of forest for particular environmental services, like water catchment	
5. Establishing clear use rights for a limited number of people to particular forest products (e.g., honey trees)	
6.	

1) Codes: 0=no, not at all; 1= yes, but only to a limited extent; 2=yes, they are common.

4. The village is involved in different production activities to make a living (subsistence and/or cash income). How would you compared forest activities to other activities when it comes to:

Criterion	Code[1]
1. Food security (avoid famine)	
2. Profitability (average return per day of work)	
3. Low risk (low variation in returns per hour of work; stable price and/or production)	
4. Enjoyment of work	

1) Codes: 1=forest activities (FA) more important; 2=FA about the same; 3=FA less important; 4=don't know

E. Forest Institutions

		Rank	Product	code-product
1.	What are the three most important products (MIP) from the forest in the village in term of contribution to local subsistence and cash income?	1.		
		2.		
		3.		
2.	In what type of forest do you get the most important MIP (rank 1 above)? *(code-forest)*			
3.	Are there customary rules regulating forest use in the village?			*(1-0)*
4.	**If yes**, are the *customary* rules regarding forest use enforced /respected by the population of the village? *Codes: 0=no/very little; 1=to a certain extent by FUG members only;2=to a certain extent by everyone; 3= generally respected by FUG members only; 4= yes, by everyone; 9=no particular rules exist.*			
5.	Are there *government* rules that regulate forest use? *Codes: 0=none/very few; 1=some but vague/unclear; 2=yes, clear rules exist*			
6.	Are the *government* rules enforced/respected by the members in the village? *Codes: 0=no/very little; 1=to a certain extent by FUG members only; 2=to a certain extent by everyone; 3= generally respected by FUG members only; 4= yes, by everyone; 9=no particular rules exist.*			
7.	Do the villagers require any permission to harvest the MIP? *Codes: 0=no; 1=yes, users have to inform the authorities; 2= yes, written permission needed*			
8.	If yes, who issues this permit? *Codes: 1=Village head; 2=FUG; 3=Forest Officer (forest department; 4=Other Government body; 9=Other:*			

			Rank 1-3
9. What changes do "you" (village meeting or similar) think would be most important to increase the production from forests? *Please rank the most important reasons, max. 3.*	1.	Better access to the forest	
	2.	Better protection of forest (avoid overuse)	
	3.	Better skills	
	4.	Better access to credit/capital	
	5.	Better access to markets and reduced price risk	
	6.	Reduced production risk	
	7.	Better equipment/ technology, e.g. chainsaw	
	9.	Other, specify:	

F. Forest User Groups (FUG)
1. Existence of forest user groups (FUG), see Technical Guidelines for a definition.

1. How many forest user groups (FUG) are there in the village?	

2. For each FUG, fill in the table below.

1. When was the group formed? *(year)*	
2. How was the group formed? *Codes: 1= local initiative; 2=Initiative from NGO; 3=Initiative from Forest Department or government; 4 =other, specify*	
3. Is the FUG main purpose related to the management of a particular forest area or of particular forest product(s)? *Codes: 1=area; 2=product(s); 3=both*	
4. If for a product (code 2 above), what is the (main) product? *(code-product)*	
5. Does the group have a written management plan?	*(1-0)*
6. How many members are there in the group?	

7. What are the main tasks of the FUG? *Select as many as appropriate: 1-0 code*	1. Setting rules for use	
	2. Monitoring and policing	
	3. Silviculture & management	
	4. Harvesting forest products	
	5. Selling forest products	
	6. Other, specify:	

8. Has the FUG over the last year imposed any penalties on those breaking the rules?	*(1-0)*
9. **If yes,** what type of penalties? *Codes: 1=fee (cash payment); 2=labour (extra work); 3=exclusion from group; 9=other:*	
10. How many times per year does the FUG have meetings?	
11. Overall, on a scale from 1-5 (1 is highest, 5 is lowest) how effective would "you" (the researcher) say that the FUG is in ensuring sustainable and equitable forest use?	
12. List the main agenda and no. of decisions over the years in the FUG/FUGC meetings from the minute book.	
13. What percentage of the decisions has been implemented so far?	
14. If any annual grants or funds received, list source and amount?	

G. Wood traders survey guidelines check list (sawmills and wood depots)

1. Interviewed by: ………..	2. Date of visit: ………….
3. Location of the enterprise (mark by GPS): …………..	4. Name of the respondent: ……….
5. Type of production system (private/other) and owner: ………	6. Year started this business ……..
7. Type of wood traded? Timber, fuelwood, charcoal, bamboo, etc.	8. Where and how do you get permit/contract? (CAMC/VDC/DDC/ACAP?)
9. What is the quota? ………… unit/year or season	10. What is the contracted price/royalty? Rs …… and price per unit Rs………
11. Where are the wood harvested? ………. ………. (mark location on map and list species)	12. Who undertake the wood harvesting? ………….. (skilled and unskilled workers from within the villages or outside)
13. What type of arrangement do you make and how many people are employed? - tree felling …… - stacking …….. - transportation ……. - others ………	14. How do you sell / sign contracts? - By area - By volume of the harvest - Others
15. What is the selling price per unit? i) large timber ……… Unit ……… Rs ii) small timber ……… Unit ……… Rs iii) charcoal ……… Unit ……… Rs	16. Who deals with trade? Contractor/dealer/owner

iv) bamboo ……… Unit ……… Rs	
17. Do you have a transporter? Yes/No If yes, write a description of operational mechanism and pricing.	18. Have you got contracts before in the past? Yes/No If yes, can you give details of each past contract in a same format as above.
19. Special comments of the respondent	

H. Transport system for wood, tourism and other supplies survey checklist

(for surveying tractor, donkey, mule horse, dzopa drivers/owners and caterers)

1. Name of interviewer: ………	2. Date of visit: ……………		3. Location : ……………	
4. Name of the respondent: …………………………..		5. Conveyance type: …………………………….		
6. Who owns the conveyance? (tractor, donkey, mule horse, dzopa) Name: ………………. Address ……………….. (within/outside village)				
7. What is the arrangement between you and owner?				

8. What type of products do you transport? Ask for responses for questions below specific to each types.
        a) Forest and wood products: fuelwood, charcoal, small timber, large timber, bamboo, mushroom, etc
        b) General merchandise: food, toiletries, clothes, construction hardware, crafts and gift, etc
        c) Trekking group: camping goods, food items, etc				

9. From whom do you buy? List sources of each above ………		10. Who decides the price? ………………………..		
	Unit	Wood	Other goods	Tourist groups
Gross income (sales):				
Quantity transported last month (no. of trips & quantity in each trip)				
Distance and time taken for one trip?				
Amount obtained	Rs			
Quantity transported in whole year (no. of trips & quantity in each trip)				
Amount obtained	Rs			
Net income (sales – costs):				
How much do you pay for buying a unit (Purchased inputs)?				
What is your own non-labour inputs (equivalent market value)?				
What is your operation cost per day/load/unit (fuel, etc….)?				
How much cost is involved in marketing?				
What is your own labour inputs?				
How much was hired labour inputs?				
What is capital costs (repair, maintenance, etc…)				
Current value of capital stock				
Expected service life "scrap price"				
What is your profit margin?				
Are you happy with the profit margin?				
What are the problems that you experience?				
Aob ….				

I. Growth and Development of Tourism Infrastructure and Services in the Village

When did tourism started in the area? Use historical time line for better illustration.				
Is there a post office in the village? Yes/no If yes, when was it established? If no, where is the nearest post office? place name ……... km …….. hours by foot ……….				
How has the tourism infrastructure and facility changed over last 30 years? Collect answers to the following questions with respect to the time line indicated in the four columns below.				

Tourism infrastructures, services, patterns	Up to Now	Up to 1995	Up to 1985	Up to 1975
Numbers of hotels/lodges established				
Total number of rooms and bed capacity*				
Total number of campsites				
Total number & bed capacity of pilgrim rest house (Dharamshala)				
Total no. of households involved in tourism activities				
Total number of staff employed (local/outsider)*				
Total number of restaurants/bars (bhatti)/tea shops				
Total number of souvenir shops				
Total number of grocer shops				
Total no. of tourist/trekker passing through this trail annually^				
How many trekking from Beni to Jomsom?				
How many trekking from Jomsom to Beni?				
How many pilgrims travel annually?				
How many groups are accompanied by porter?				
Number of porters/guides accompanying the trekkers?				
When did telephone facility started? year ………… & number				
When did cyber cafe started? year ………….. & number				
When did health clinic started? year.............. & number				
When did safe drinking water centre started? .... & number				
When did informationvisitor centre/museum started? year ………& number				
When did security check/post started? ………… & number				
What were tourist entry fee during the period?				
What were average wage rates of tourist porter during the period?				
What were average wage rates of tourist guide during the period?				
Any other important information?				

Are there any specific criteria for the establishment and operation of tourism hotel/lodges/restaurants?

What are the rules pertaining to the establishment and operation of tourism hotel/lodges/restaurants set by the following?
        VDC/DDC …..
        CAMC ……..
        ACAP ………

Is there a mechanism of local taxation of tourism enterprises and the tourists?
When did the Tourism Management Committee (TMC) formed and how it functions?

Main tasks of the TMC and their effectiveness?
      - Standard and price setting of the rooms and food
      - Maintaining clealiness and management of garbage in the village
      - Maintenance of public infrastructures such as trails
      - Members in the TMC (male/female) and duration
      - Meetings and main agendas (how many meetings annually)

Is there a tourism management plan? Specific to the area or for a larger area?
List out major problems and obstacles for tourism growth and development in the area?
List out possible suggestions and solutions to overcome the problems/solutions?
Is there specific community based tourism program such as community lodge, souvenir shop, etc.
Are they receiving any special grants and donations for tourism development or community forestry or community development? State the funding agency, year, amount and major objectives.

*verifiy from hotel/lodge survey and official records of ACAP or VDC. ^Police check post maintains record.

Village survey 2 (V2)

A. Geographic and climate variables

1.	What is the name of the village?	*(name)**	*(village ##)*
2.	What was the total rainfall/snowfall in the village for the last 12 months?		mm/year
3.	If rainfall data not available (question 2): How was the rainfall last year compared with a normal year (=average last 20 years)? *Codes: 1= well below normal (< 50 %); 2 = below normal (50-90%); 3 = normal (90-110%); 4 = above normal (110-150%); 5= well above normal (> 150%)*		

B. Risk

1.	Has the village faced any of the following crises over the past 12 months? *Codes: 0= No; 1= Yes, moderate crisis; 2= Yes, severe crisis*	1. Flood and/or excess rain	
		2. Drought	
		3. Wild fire (in crops/ forest/grasslands etc)	
		4. Widespread crop pest/disease and or animal disease	
		5. Human epidemics (disease)	
		6. Political/civil unrest	
		7. Macro-economic crisis	
		8. Refugee or migration infusion	
		9. Excessive wildlife depredation	
		10. Severe reduction in tourists	
		11. Avalanche and landslide	
		12. Other…………………….	

C. Wages and prices

			Male	**Female**
1.	What was the typical daily wage rate for unskilled agricultural/casual adult **male/female** labour during the **peak/slack** season in this village over the last year? *(Lc$/day)*	**Peak**	1.	2.
		Slack	3.	4.

2.	What is the main staple food in the village? *(code-crops)*		
3.	What was the price of a kg of the staple food during the last year **before** and **after** the main agricultural harvest? *(Lc$/kg)*	**1. Before harvest**	**2. After harvest**
4.	What is the sales value of one hectare of good agricultural land in the village (i.e., within 1km of the main road or settlement, not degraded, not too steep, and suitable for common crops) *(Lc$/hectare)*		

D. Forest services

1.	Has the village (as a community or individuals in the village) received any direct benefits (e.g., cash payment) related to forest services over the past 12 months? *Codes: 0= No; 1= Yes, directly to households; 2= Yes, directly to village (e.g. development project); 3= Yes, both to household and village*		
2.	If the village has received payment, please indicate the amount the village has received.	**Payments related to:**	**Amount** *(Lc$)*
		1. Tourism	
		2. Carbon sequestration	
		3. Water catchment	

		4. Biodiversity conservation	
		9. Others………………	
3.	Has the village received any forestry-related external support (technical assistance, free inputs, etc.) from government, donors, NGOs) over the past 12 months?		*(1-0)*

E. Environmental and forest income

Note from Arild: I would like to leave this table out, as it should be covered by the household questionnaire. If included, the table is expanded so it covers all land categories in as in the table in V1.

1. What **share** (%) of the different environmental incomes comes from different land covers/uses?
Note: See Technical Guidelines for definitions and an elaboration.

	1. Natural forest	2. Managed forest	3. Plantations	4. Agroforests	5. Silvipasture	6. Other agric. land	7. Other areas	Total
Firewood								100%
Charcoal								
Timber								
Poles and other wooden building material								100%
Fodder for animals								100%
Game								100%
Fish								100%
Fruits								
Vegetables								
Medicinal plants								
								100%

Make list as appropriate for the local context.

F. Community wood (timber & fuel) requirement

Products *(code-product)*	1.Dimension (l*b*h) of tree/ pole/ sapling used[1]	2.No. used	3.Quantity of wood used (cft) (1*2)	4.Year last repaired (BS)	5.Quantity of wood used in repairs (cft)	6.Life of wood (in years)	7.Total quantity of wood used (3+5)	8.Annual wood consumption (7/6)	9.Source of wood (code forest)	10.Species used (code species)
Bridge construction										
School buildings										
Community buildings										
Temple/gompas										
Cattle pounds										
Road construction										
Cremation/funeral										
Others….										

NB: 1. A number of different dimension of tree, pole and sapling used for timber and firewood purpose will be assessed so as to know the extraction of these products from the forest. Annual requirement as well as wood life of community wood is estimated by asking key informants.

Household Survey 1 (H1)

A. Identification

1. Identification and location of household.

1.	Household number		
2.	Village	*(name)	(village ##)
3.	District		
4.	Name of Interviewer		
5.	Date of Interview		(yyyymmdd)
6.	Name and PID (see below) of primary respondent	* (name)	(PID)
7.	Name and PID (see below) of secondary respondent	* (name)	(PID)
8.	GPS reference point of household		
9.	Distance of the household from the centre of village (in minutes of walking and in km)	1. min	2. km

B. Household composition

1. Composition of household. (Recall the definition of households in the Technical Guidelines.)

1. Personal Identification number (PID)	* Name of household member	2. Relation to household head[1]	3. Age (years)	4. Sex (0=male 1= female)	5. Education: Number of years completed	6. Job responsibility[2]
1		Household head				
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						

1) Codes: 1=Spouse; 2 Son/daughter; 3=Son/daughter in law; 4=Grandchild; 5=Mother/father; 6=Mother/father in law; 7=Brother or sister; 8=Brother/sister in law; 9=Uncle/aunt; 10=Nephew/niece; 11=Step/foster child; 12=Other family; 13=Not related.

2)Codes: 1=cooking, 2=cleaning/house keeping, 3=fetching firewood/portering goods, 4=shopping, 5=working in farm, 6=taking care of livestock, 7=house repairing, 8=shop keeping, 9=mule driving, 10=student, 11=service holder locally, 12=others ….

2. We would like to ask some questions regarding the head of this household.

1.	What is the marital status of household head? *Codes: 1= married/living together; 2=Widow/widower; 3=divorced; 4=spouse working away; 5=never married; 9=other:*	
2.	How long ago was this household formed (see definition of household)	years
3.	Was the household head born in this village?	(1-0)
4.	If no, how long has the household head lived in the village?	years
5.	Does the household head belong to the largest ethnic group/caste in the village?	(1-0)

C. Land

1. Please indicate the amount of land (in hectares - ha) that you own, rent in or use otherwise.
Note: See definitions of forest categories in the Technical Guidelines.

Category	1. Area (ha)	2. Ownership (code-tenure)	Main crops grown/harvested Max 3 (code-products)		
			3. Rank1	**4. Rank2**	**5. Rank3**
Forest:					
1. Natural forest					
2. Managed forests					
3. Plantations					
Agricultural land:					
4. Cropland					
5. Pasture (natural or planted)					
6. Agroforestry					
7. Silvipasture					
8. Fallow/idle					
9. Land rented out					
10. Land rented in					
11. Other vegetation types/land uses (residential, bush, grassland, swamps, etc.)					
12. Total land owned (all excl. 10)					

D. Assets and savings

2. Please indicate the number and value of implements and other large household items that are owned by the household.

	1. No. of units owned	2. Total value (current sales value of all units, not purchasing price) (Lc$)
1. Car/truck		
2. Tractor		
3. Motorcycle		
4. Bicycle		
5. Handphone/phone		
6. TV		
7. Radio		
8. Cassette/CD/ VHS/VCD/DVD/ player		
9. Stove for cooking (gas or electric)		
10. Refrigerator/freezer		
11. Fishing boat and boat engine		
12. Chainsaw		
13. Plough		
14. Scotch cart		
15. Shotgun/rifle		
16. Others (worth more than approx. 50 USD purchasing price)		

3. Please indicate the savings and debt the household has.

1.	How much does the household have in savings in banks, credit associations or savings clubs?	*Lc$*
2.	How much does the household have in savings in non-productive assets such as gold and jewelry?	*Lc$*
3.	How much does the household have in outstanding debt?	*Lc$*

E. Forest resource base

1.	How far is it from the house/homestead to the edge of the nearest natural or managed forest …	1. … measured in terms of distance (straight line)?		*km*
		2. … measured in terms of time (in minutes of walking)?		*min*
2.	Does your household collect firewood? (**If 'no'**, skip to question 5)			*(1-0)*
3.	**If 'yes'**, how many hours per week do you spend on collecting firewood for family use?			*(hours)*
4.	Does your household now spend more or less time on getting firewood than you did 5 years ago? *Codes: 1=less; 2=about the same; 3=more; 4=don't use firewood; 9=don't know*			
5.	How has availability of the most important forest product to the household changed over the past 5 years? *Codes: 1=declined; 2=about the same; 3=increased; 4= some declined and some increased; 9=don't know*			

6.	If availability of forest resources has **declined**, what is the reason? *Please rank the most important reasons, max. 3 (leave rest blank).*	**Reason**	**Rank 1-3**
		1. Small-scale clearing of forest for agriculture in the village	
		2. Large-scale projects (plantations, new settlements etc.)	
		3. People from outside buy land and restrict access	
		4. More local (village) people collect more forest products	
		5. More people from other villages collect more forest products	
		6. Restrictions on use by central or state government (e.g. for forest conservation)	
		7. Local restrictions on forest use (e.g., community rules)	
		9. Other, specify:	

7.	If availability of forest resources has **increased**, what is the reason? *Please rank the most important reasons, max. 3.*	**Reason**	**Rank 1-3**
		1. Less clearing of forests for agriculture (incl. pastoralism)	
		2. Fewer local (village) people collect less forest products	
		3. Fewer people from other villages collect less forest products	
		4. Better management of forests	
		9. Others, specify:	

8.	How has the household responded to forest resource decline? *Please rank the most important responses, max 3.*	**Response**	**Rank 1-3**
		1. Increased collection time (e.g. from further away from house)	
		2. Increased planting of (fuel wood and fodder) trees on private land	
		3. Increased purchase of commercial fuels	
		4. Increased use of agricultural residues (as fuel and fodder)	
		5. Decreased need for use of fuels, such as using improved stove	
		6. Changed animal feeding system, such as zero-grazing or stall-feeding	
		7. No responses required as still sufficient forest resources available	
		9. Other, specify:	

7.	If you household has planted one or more woodlots or trees on farm, what is the main purpose of the trees planted? *Please rank the most important purposes, max 3.*	**Purpose**	**Rank 1-3**
		1. Firewood for domestic use	
		2. Firewood for sale	
		3. Fodder for own use	
		4. Fodder for sale	
		5. Timber/poles for own use	
		6. Timber/poles for sale	

	7. Other domestic uses	
	8. Other products for sale	
	9. Carbon sequestration	
	19. Other, specify:	

F. Forest User Groups (FUG)

Note: The enumerator should first explain what is meant by a FUG, cf. Technical Guidelines.

1.	Are you or any member of your household a member of a Forest User Group (FUG)? **If 'no' skip to question 11.**	*(1-0)*
2.	**If 'yes':** How many person days per year does the household spend on FUG activities (meetings, policing, joint work, etc)	*days*
3.	Does someone in your household normally/regularly attend the FUG meetings?	*(1-0)*
4.	In your household, who normally attends FUG meetings and participates in other FUG activities? *Codes: 1= Only the wife; 2=Both, but mainly the wife; 3=Both participate about equally; 4= Both, but mainly the husband; 5=Only the husband; 6= Other arrangements not described above.*	
5.	Does your household make any cash payments/contributions to the FUG?	*(1-0)*
6.	If yes, how much did you pay last year? *(Lc$)*	
7.	Did your household receive any cash payments from the FUG (e.g., share of sales) last year?	*(1-0)*
8.	If yes, how much did you receive the last year? *(Lc$)*	

9. What are your reasons for joining the FUG? *Please rank the most important reasons, max 3.*	**Reason**	**Rank 1-3**
	1. Increased access to forest products	
	2. Better forest management and more benefits in future	
	3. Access to other benefits, e.g., government support donor programmes	
	4. My duty to protect the forest for the community and the future	
	5. Being respected and regarded as a responsible person in village	
	6. Social aspect (meeting people, working together etc)	
	7. Forced by Government/chiefs/neighbours	
	9. Other, specify	

10.	Overall, how would you say the existence of the FUG has affected the forest benefits that the household gets from the forest? *Codes: 1=large negative effect; 2=small negative effect; 3=no effect; 4=small positive effect; 5=large positive effect; 9=don't know*	

11. If **you don't participate in FUG,** why? *Please rank the most important reasons, max 3*	**Reason**	**Rank 1-3**
	1. Cannot afford to contribute the time and/or cash payment	
	2. I'm new in the village	
	3. FUG members generally belong to other group (ethnic, political party, religion, etc.) than I do	
	4. FUG membership will restrict my use of the forest, and I want to use the forest as I need it	
	5. I don't believe FUG is very effective in managing the forest	
	9. Other, specify: ……	

G. Forest product markets

1.	What is the forest product that gives the household the highest cash income (including income from barter)? *(code-products)*	

2.	Where does your household sell/barter this product? *(code-market)* *Please rank the most important markets, max. 3.*		**Rank1**	**Rank2**	**Rank3**
3.	For how long have you been selling to the main market/agent ranked 1 above?				*years*
4.	What distance do you need to transport the product to sell it?				*km*
5.	What is the mode of transportation to the market? *Codes: 1=sold at farm gate roadside; 2=carry in person; 3=bicycle/wheelbarrow; 4=animal transportation; 5=vehicle (truck, bus); 6=boat; 7=several of the above; 9=other:*				
6.	If you sell to a trader/organization/agency, do you get any credit/loan from them? *Codes: 0=no; 1=occasionally; 2=often/usually; 3=always*				

H. Households building/hut ownership, timber use and consumption

	Unit	Permanent house (Qty)	Semi perm. house (Qty)	Temporary house (Qty)
Location of the hh/hotel/lodge	GPS			
Total compound occupied by hh/hotel/lodge	Sq m			
Year constructed	AD			
No. of houses	No			
Number of rooms	No			
Area occupied by the houses	Sq m			
Total area occupied by camping site	Sq m			
Quantity of tree, post and sapling used in roof and roofing?	Tree Pole Sapling Cft			
Quantity of tree, post and sapling used as pillars, beams, planks externally?	Tree Pole Sapling Cft			
Quantity of tree, post and sapling used as planks, scantlings, posts, beams, panels in the house internally?	Tree Pole Sapling Cft			
No. of tree, pole and sapling used for compound fencing including the camping site	Tree Pole Sapling Cft			

NOTE: Permanent house: stone wall and permanent roof of tin or RCC with a long life span; Semi permanent house: stone wall and thatch or woof roof with a medium life span; Temporary: mud wall and thatch or wood roof with a short life span. The survey is to estimate the pressure and demand on the quantity of tree, pole and sapling size crops.

I. Households timber use and consumption (construction, repair and wood life)

1.Products *(code-product)* [1]	1.Dimension (l*b*h) of tree/ pole/ sapling used [2]	2.No. used	3.Quantity of wood used (cft) (1*2)	4.Year last repaired (BS)	5.Quantity of wood used in repairs (cft)	6.Life of wood (in years)	7.Total quantity of wood used (3+5)	8.Annual timber consumption (7/6)	9.Source of wood (code forest)	10.Species used (code species)
Temporary house:										
Semi permanent house:										
Permanent house:										
Toilet/store/shade/shacks...										
Livestock shade/pen/corral:										
Fence (house, garden, corral):										
Furniture:										
Agriculture implements:										
Others: …										

NB: Annual consumption and income of raw and processed forest products is obtained from the Quarterly surveys. This survey is to be conducted in the H1 survey. The life of wood will be determined by interviewing a few knowledgeable persons.

[1.] The range of products used should be elaborated and calculated for total consumption in each title for instance Roof shingles, Beams and poles, Scantlings 'dalin', Pillars, Door & window frames, Door & window sill/panes, Floor wooden planks, Ceiling and wall panels, etc. The furniture includes: beds, tables, chairs, bench, almirah, kitchen/store rack ,etc. The agriculture implements includes: Plough 'halo', Neck rest 'jua', Long wood and plough handle, tools handle, compost pit, crates for storing, etc

[2.] The average dimensions of tree, pole and sapling used will be determined as much as possible from households.

Household survey 2 (H2)

A. Identification

1.	Household number		
2.	Village	*(name)	(village ##)
3.	District		
4.	Name of Interviewer		
5.	Date of Interview		(yyyymmdd)
6.	Name and PID of primary respondent	* (name)	(PID)
7.	Name and PID of secondary respondent	* (name)	(PID)

B. Risks and crisis

1. Has the household faced any major income shortfalls or unexpectedly large expenditures during the past 12 months?

Event	1. Code[1)]	2. Estimated income loss or costs (see guidelines)	How did you cope with the income loss or costs? Rank max. 3[2)]		
			3.Rank1	4.Rank2	4.Rank3
1. Serious crop failure					
2. Serious illness in family (productive age-group adult unable to work for more than one month during the year, due to illness, or to taking care of ill person)					
3. Death of productive age-group adult					
4. Land loss (expropriation, etc.)					
5. Major livestock loss (theft, drought, etc.)					
6. Other major asset loss (fire, theft, flood, etc.)					
7. Lost wage employment					
8. Wedding					
9. Heavy reduction in tourist number					
10. Other: _____					

1. Harvest more forest products
2. Harvest more wild products not in the forest
3. Harvest more agricultural products
4. Spend cash savings
5. Sell assets (land, livestock, etc.)
6. Do extra casual labour work
7. Assistance from friends and relatives
8. Assistance from NGO, community org., religious org. or similar
9. Get loan from money lender, credit association, bank etc.
10. Tried to reduce household spending
11. We did nothing in particular
19. Others: _____

C. Forest services

1. Has the household over the past 12 months received any cash or in kind payments related to the following forest services?

Principal purpose	1. Have received? *(1-0)*	2. If yes, amounts/values received *(Lc$)*
1. Tourism		
2. Carbon projects		
3. Water catchments projects		
4. Biodiversity conservation		
5. Others, specify:		

D. Forest clearing

1. Did the household clear any forest (excl. non-forest fallows) during the past 12 months?				*(1-0)*
If YES	2. How much land was cleared?			*ha*
	3. What was the cleared land used for? *Codes: 1=cropping; 2=tree plantation; 3=pasture; 4=non-agric uses (Rank max 3)*	1.Rank1	2.Rank2	3.Rank3
	4. If used for crops (code 1 in question above), which principal crop was grown? *(code-product) Rank max 3*	1.Rank1	2.Rank2	3.Rank3
	5. What type of forest did you clear? *(code-forest)*			
	6. If secondary forest, what was the age of the forest?			*years*
	7. What was the ownership status of the forest cleared? *(code tenure)*			
	8. How far from the house was the land cleared located?			*km*
9. Has the household over the last *five* years cleared forest?				*1-0*
10. **If 'yes',** approx. how much land has been cleared over the last five years?				*ha*
11. How much land under use has over the last five years been abandoned (left for natural re-vegetation)?				*ha*

E. Households perception towards tourism's economic and biophysical impact?

	Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)
Increase in wages and prices has been due to tourism					
Tourism has been causing hardship in livelihood of local people					
Quality of services provided to tourists has been improved					
Tourism mgmt committee has been active					
Tourism has been providing better jobs					
Tourism has been the main cause of economic development					
Tourism has been causing pollution					
Tourism has taken labour away from agriculture					
Tourism has been responsible for deforestation					
Tourism has been responsible for illegal poaching of wildlife					
Any other					

NOTE: This will be only undertaken during the second HH survey i.e. towards the end of the one year period when the researchers will have build very good relations with the villagers. In addition, the HH's responses on perception will be supplemented with the perception of all the other relevant stakeholders interviewed and consulted during the entire one year period. The measure of perception is also meant to supplement questions that do not have time series information available.

Quarterly Surveys (household) (Q1-Q4)

Note: All incomes are asked for the last month (last 30 days), except for the last two sections on crops and livestock (as well as tourism) where the recall period is 3 months.

A. Identification

1.	Household number		
2.	Village	*(name)	(village ##)
3.	District		
4.	Name of Interviewer		
5.	Date of Interview		(yyyymmdd)
6.	Name and PID of primary respondent	* (name)	(PID)
7.	Name and PID of secondary respondent	* (name)	(PID)

B. Direct forest income (income from forest products in the raw)

1. What are the quantities and values of raw-material forest products the members of your household collected for both own use and sale over the last month?

1. Forest product (code-product)	2. Collected by whom?[1]	3. Collected where? (code-land)	3. Unit	4. Collec-ted (4+5)	5. Own use (or gifts)	6. Sold (or barter)	7. Selling price per unit	8. Type of market (code-market)	9. Total gross value (4*7)	10.Tran-sport/ marketing costs (total)	11. Purch. inputs & hired labour	12. Net income (9-10-11)

1) Codes: 1=Only/mainly by wife and adult female household members; 2=Both adult males and adult females participate about equally; 3=Only/mainly by the husband and adult male household members; 4=Only/mainly by girls (<15 years); 5=Only/mainly by boys (<15 years); 6=Only/mainly by children (<15 years), and boys and girls participate about equally; 7= All members of household participate equally; 8=None of the above alternatives; 9=Don't know.

C. Forest-derived income (income from processed forest products)

1. What are the quantities and values of processed forest products that the members of your household produced during the last month?

1. Products (code-product)	2. Who in the household did the work?[1]	3. Unit	4.Quantity produced (5+6)	5.Quantity sold (incl. barter)	6.Quantity consumed (incl. gifts)	7. Price/ unit	8.Gross value (4*7)	9.Value of collected forest product (raw material used)	10.Collected where (code-forest)	11.Cost of purchased forest product (raw material)	12.Transport/ marketing costs	13.Purchased inputs & hired labour	14. Net income (8-9-11-12-13)

1) Codes: 1=Only/mainly by wife and adult female household members; 2=Both adult males and adult females participate about equally; 3=Only/mainly by the husband and adult male household members; 4=Only/mainly by girls (<15 years); 5=Only/mainly by boys (<15 years); 6=Only/mainly by children (<15 years), and boys and girls participate about equally; 7= All members of household participate equally; 8=None of the above alternatives; 9=Don't know.

D. Fishing and aquaculture

1. How much fish did your household catch from the wild (rivers, lake, sea) during the last month?

*Type of fish (list local names)	Where caught? *(code-land)*	2. Total catch (kg) (3+4)	3. Sale, incl. barter	4. Consum-ption (incl. gifts)	5. Price per kg	6. Total value (2*5)	7. Costs (inputs, hired labour, marketing, ..)	8. Net income (6-7)

2. How much fish did your household catch from the wild or harvest from your ponds (aquaculture) in the last month?

* Type of fish (list local names)	1. Total catch (kg) (2+3)	2. Sale, (incl. barter)*	3.Consumption (incl. gifts)	4. Price per kg	5. Total value (1*4)	6. Costs (inputs, hired labour, marketing, etc.)	7. Net income (5-6)

* Distinguish: inside village markets, outside village markets, directly to tourists, tourism entrepreneurs, or traders.

E. Non-forest environmental income

1. How much of various wild products did your household collect in the last month, excluding forest products and fish included in the above tables?

1. Type of product *(code product)*	2. Where? *(code-land)*	3. Unit	4. Total collection (5+6)	5. Sale, (incl. barter)*	6. Consum-ption (incl. gifts)	7. Price per unit	8.Total value (4*7)	9. Costs (inputs, hired labour, marketing, etc.)	10. Net income (8-9)

* Distinguish: inside village markets, outside village markets, directly to tourists, tourism entrepreneurs, or traders.

F. Wage income

1. Has any member of the household had paid work over the last month?
Note: One person can be listed more than once for different jobs.

1. Household member (PID)	2. Type of work* *(code-work)*	3. Days worked last month	4. Daily wage rate	5. Total wage income (3*4)

* Who is the employment provider (so as to determine labour contribution by tourism)

G. Other income sources

1. Please list any other income that the household has received over the last month.

Type of income	1. Total amount received last month	* Comments
1. Remittances		
2. Support from government, NGO, organization or similar		
3. Gifts/support from friends and relatives		
4. Pension		
5. Payment for forest services		
6. Payment for renting out land (if in kind, state the equivalent in cash)		
9. Other (specify):		

H. Income from own business (not forest or agriculture)

1. Are you involved in any types of business, and if so, what are the gross income and costs related to that business over the last month?

Note: If the household is involved in several different types of business, you should fill in one table for each business.

1. What is your type of business? *Codes: 1=shop/trade; 2=agric. processing; 3=handicraft; 4=carpentry; 5=other forest based; 6=other skilled labour; 7=transport (car, boat, tractor, mule…); 8=lodging/restaurant; 19=other:*		
	1. Last month (in Lc$)	*** Comments**
2. Gross income (sales)		
Costs:		
3. Purchased inputs		
4. Own non-labour inputs (equivalent market value)		
5. Hired labour		
6. Transport and marketing cost		
7. Capital costs (repair, maintenance, etc.)		
8. Other costs		
9. Net income (2 - items 3-8)		
10. Current value of capital stock		

A detailed assessment of tourism related businees is to be carried out as it a major business activity in the area.
Distinction should be made among tourism related (viz crafts) and other businesses. The following tables are for detailed accounting of the tourism related enterprises.

Gross income (sales) from tourism enterprises

		Month				
	Unit	1	2	3 (most recent)	Price charged per unit (Rs)	Total sales (Rs)
Tourist/trekkers arrival:						
Organized trekkers groups	No					
Organized trekkers members	No					
Groups with porters and guides	No					
Porters and guides	No					
Independent Tourists	No					
Pilgrims	No					
Hotel/lodge occupancy:						
Rooms occupied	No					
Beds occupied	No					

Groups in campsites	No						
Cooked food and drinks:							
Breakfast served	No						
Lunch served	No						
Dinner served	No						
Drinks Imported: (spirit, beer, soft drink, tea, coffee, mineral water)	Bottle/pot/no						
Drinks local: (raksi, beer, uwa, brandy, etc.)	Bottle/ liter?						
Candies/dry food/toiletries/souvenirs:							
Trekkers food (chips, candy, mixture, noodles, biscuits, etc)	Qty						
Candies and chocolates	Qty						
Fruits and salads	kg						
Napkin paper/toilet paper	Kg						
Canned foods	No						
Others…..							

NB: This table will complement Table H in the Quarterly survey: An estimated profit margin will be deducted directly on the sold item to calculate the cost price where applicable.

Cost of purchased tourist products 'inputs' from market

Tourist product (code product) [1]	Market Source [2]	Produced [3]	Unit	Month			Cost price	Transport cost	Total Cost
				1	2	3			
Cereals and breads									
Beans and gram									
Milk, cheese, oils/fats, spices, sauce, etc									
Sprit, wine, beer, drinks, juice, mineral water, tea and coffee (branded/local)									
Meat, fish and eggs									
Vegetables and wild foods									
Fuel and energy [4] including candles									
Others…									

NB: [1] Each of the item listed should be elaborated for calculating the quantity consumed.
[2] Market source: 1= from village, 2= from next village, 3= from district HQ, 4= from another district.
[3] Produced : 1= locally in the villages, 2= within the country, 3= outside the country (imported brand). If the households own production is used for tourism that should be corrected from the appropriate tables of crop, fish, livestock, etc.
[4] The fuel and energy consumption cost will be derived from the energy consumption survey

Cost of hired labor (employment generated) by tourism entrepreneurs

	Unit	Quantity per month			Total man month	Cost (Wage rate*total man month)	Seasonal /annual (%)	Male/Female/child (%)	Local/adjacent /outside district (%)
		1	2	3 (recent)					
House keeping/laundary									
Cook and bartender									
Kitchen helper and cleaner									
Goods/fuel porter									
Vegetable gardener									
Shopping and marketing staff									
Tractor, horse, mule, dzopa drivers as staff									
Others …………….									

I. Income from agriculture – crops

1. What are the quantities and values of crops that household has harvested during the last 3 months?

1.Crops (code-product)	Area of production (m^2)	2.Unit for production	3. Total production (4+5)	4.Family consumption (incl. gifts)	5.Sale (incl. barter)*	6. Price per unit	7.Total value (3*6)

* Distinguish: inside village markets, outside village markets, directly to tourists, tourism entrepreneurs, or traders.

2. What are the quantities and values of inputs used in crop production over the last 3 months (this refers to agricultural cash expenditures)?
Note: Take into account all the crops in the previous table.

Inputs	1. Unit	2. Quantity	3. Price per unit	4. Total costs (2*3)
1. Seeds				
2. Fertilizers				
3. Pesticides/herbicides				
4. Manure				
5. Draught power				
6. Hired labour				
7. Hired machinery				
8. Transport/marketing				
19. Others:				
20. Payment for land rental				

J. Income from livestock

1. What is the number of ADULT animals your household has now, and how many have you sold, bought, slaughtered or lost over the last 3 months?

	1. Beginning number (3 months ago)	2.Sold (incl. batter), live or slaughtered*	3.Slaughtered for own use (or gift given)	4. Lost (theft, died,..)	5. Bought or gift received	6. New from own stock	7. End number (now) (1-2-3-4+5+6)	8. Price per adult animal	9. Total end value (7*8)
1. Cattle									
2. Buffalos									
3. Goats									
4. Sheep									
5. Pigs									
6. Donkeys									
7. Ducks									
8. Chicken									
19. Others:									

* Distinguish: inside village markets, outside village markets, directly to tourists, tourism entrepreneurs, or traders.

2. What are the quantities and values of animal products and services that you have produced over the last 3 months?

Product/service	1. Unit	2. Production	3. Family consumption (incl. gifts)	4. Sale (incl. barter)*	5. Price per unit	6. Total value (2*5)
1. Meat [1]						
2. Milk						
3. Butter						
4. Cheese						
5. Ghee						
6. Eggs						
7. Hides and skin						
8. Wool						
9. Manure						
10. Draught power						
11.						
19. Others						

1) Make sure this corresponds with the above table on sale and consumption of animals.
* Distinguish: inside village markets, outside village markets, directly to tourists, tourism entrepreneurs, or traders.

3. What are the quantities and values of inputs used in livestock production over the last 3 months (cash expenditures)?
Note: The key is to get total costs, rather than input units.

Inputs	1. Unit	2. Quantity	3. Price per unit	4. Total costs (2*3)
1. Feed/fodder				
2. Medicines, vaccination and other veterinary services				
3. Costs of maintaining barns, kraals, etc.				
4. Hired labour				
9. Others:				

4. Where are your grazing animals grazing? Please indicate approx. share of fodder (primarily grass), either brought to the farm by household members or from grazing by animals in the field.

1. Type of grazing land or source of fodder *(code-land)*	2. Approx. share (%)
Total	100%

K. Energy use and woodfuel flow
Household energy use patterns (seasonal variation)

Energy Type	Unit	Cost per unit	Cooking	Heating	Lighting	Appliance	Others	Spp used [1] (code)	Size of wood	Total unit/ day2	Total unit/ week
Fuelwood (solid)	Bhari										
Fuelwood (branches/twigs)	Bhari										
Charcoal	Sack										
Agri residue/waste	Bhari										
Dung cake	Doko										
Kerosene	Litre										
Electricity	Watt										
Biogas	Cum										
LP Gas (cylinder)	Litre										
Solar panel ?	Watt										
Others …..											

NB: [1] Collect wood sample for estimating specific density to estimate combustion value. [2] Weigh or take reading of each day consumption for one whole week by visiting each house (25 hotels, 10 hh in Lete and 15 hh in Kunjo VDC).

Households woodfuel flows (seasonal variation)

Source/class	Collected by whom (code)	Time per trip	Distance to source	Unit	Qty. collected per week	Own use	Sold (or barter)*	Where collected[1]	Vegetation type (code)	Spp collected[1] (code)	Mode of transport (code)
Community forest											
National forest											
Rangeland											
Private forest											
Own farm											
Riverine											
Outside of VDC											
Purchased											
Others …..											

NB: [1] mark the source of collection within the source class in the map. To make it consistent among the enumerators, using villagers own way of dividing the area into compartments? * Distinguish: inside village markets, outside village markets, directly to tourists, tourism entrepreneurs, or traders.

L. Household expenditures

1. What was your expenditure towards the following items for the given period?

1. Items	2. Recall Period	3. Expenditure (Rs)
Food	Last month	
Clothes	Last 3 months	
Loan Repayments	Last 3 months	
Livestock	Last three months	
Tea from shop	Last week	
Cigarettes	Last week	
Social function	Last 3 months	
Bus fare	1 month	
Plane fare	Last three months	
Treating guests	Last 1 month	
Others *Specify*		
Others		

Appendix B2 Survey instrument 2008-9

Danida-PEN Prototype Questionnaire

The prototype questionnaire gathers the information required in the common data bank (CDB) of PEN. The questionnaire **must** *be used together with the Technical Guidelines, which define key concepts, elaborate and explain the questions, and specify common codes to be used (those in the "code-xxx" format in the questionnaire).*

The wording of the questions as specified here **must** *be maintained, making allowances, of course, for translation into other languages. Some minor wording changes, necessary to account for local circumstances, might be allowed at the discretion of the PEN coordinator and the PEN advisor at CIFOR. An approval is required for such changes. The reason for this rule is that deviations from the wording of the questions may invalidate future pooling, comparison, and contrasts among the various case study data sets.*

If the questions as currently worded do not adequately capture all the information the researchers seeks, it is recommended that one poses additional questions that are not part of this set of questions. Moreover, many researchers would like to add new sections reflecting the particular topic of their research.

Technical notes:
- The numbers of the questions and lines and columns in the tables will be used to give each data cell a unique digital code, and should not be changed.
- A star (*) indicates that cell information may not be entered into the database, but is used for ease of recording.
- The following generic codes shall be used, although not being specified for each question:
  - **– 8 (minus eight)** is to be used to indicate that the question "does not apply" to the circumstances of the respondent(s).
  - **– 9 (minus nine)** is to be used for the alternative "I don't now" or '"The respondent doesn't know". Naturally, one should aim to minimize use of this response, but in some cases it's unavoidable.
- Each PEN survey shall make its own list of appropriate local units (weight and volume), with codes to be used in the survey. See the Technical Guidelines for details.
- The PEN Code List contains all the codes to be used, and must be used together with the questionnaire. The exception is the codes that apply only to single questions – these are included in the questionnaire itself.
- Several tables in the quarterly survey are "empty", which means you should fill in the locally most relevant products and use as many rows as needed (see instructions in section 5.1 of the guidelines).

Country and Survey Information (C1)

Note: One form should be filled out for each PEN study. (If a study covers more than one country, one should fill in one form per country.)

1. Please provide the following information about the study area.

1. Name of the country	
2. Name of region(s) (province, state, etc.)	
3. Name of district(s)	

Note: More country information (economic data, poverty, land categories) will be added to the PEN CDB by the PEN coordinators in collaboration with the PEN partners.

2. Please provide the following information about the timing of the surveys.

Survey	Date *(yyyymmdd)*
1. Start of surveys	
2. Completion of all surveys	
3. Start of V1	
4. Start of V2	
5. Start of A1	
6. Start of A2	
7. Start of Q1	
8. Start of Q2	
9. Start of Q3	
10. Start of Q4	

Village Survey 1 (V1)

Note: See the Technical Guidelines for the appropriate source of information and respondents for the various questions in the village surveys.

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Meeting with officials			
Village/focus group meetings			
Other interviews			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Geographic and climate variables

1.	What is the name of the village?	*1. (name)*	*2. (village code)*
2.	What are the GPS coordinates of the centre of the village? (UTM format)		
3.	What is the latitude of the village?		*degrees*
4.	What is the longitude of the village?		*degrees*
5.	What is the altitude (masl) of the village?		*masl*
6.	What has been the average annual rainfall (mm/year) in the district during the past 20 years (or less, see guidelines)?		*mm/year*
7.	What is the coefficient of variation in rainfall for the past 20 years? *(Note: To be filled in if data are readily available.)*		

B. Demographics

1.	In what year was the village established in this site?	
2.	What is the current population of the village?	*persons*
3.	How many households live currently in this village?	*households*
4.	What was the total population of the village 10 years ago?	*persons*
5.	How many households lived in the village 10 years ago?	*households*
6.	How many persons (approx.) living here now have moved to the village in the past 10 years (in-migration)?	*persons*
7.	How many persons (approx.) have left the village over the past 10 years (out-migration)?	*persons*
8.	How many different groups (ethnic groups, tribes or castes) are living in the village?	

C. Infrastructure

1.	How many households (approx.) in the village have access to electricity (from public or private suppliers)?	*households*
2.	How many households (approx.) in the village have access to (= use) piped tap water?	*households*
2a.	How many households (approx.) in the village have access to ground water?	*households*
3.	How many households (approx.) have access to formal credit (government or private bank operating in the village)?	*households*
4.	Are *informal* credit institutions such as savings clubs and money lenders present in the village?	*(1-0)*
5.	Is there any health centre in the village?	*(1-0)*
6.	Does the village have at least one road useable by cars during all seasons? *If 'yes', go to 8.*	*(1-0)*
7.	**If 'no':** what is the distance in kilometers to the nearest road usable during all seasons?	*km*

8. Is there a river within the village boundaries that is navigable during all seasons? *If 'yes', go to 10.*				*(1-0)*
9. **If 'no'**: what is the distance to the nearest river that is navigable during all seasons?				*km*

10. What is the distance from the village centre to the nearest … (in *km* and in *minutes* by *most common means of transport*)		**1. km**	**2. min**	*3. code-transport*
	1. district market			
	2. market for major consumption goods			
	3. market where agric. products are sold			
	4. market where forest products are sold			

D. Forest and land cover/use

1. Land categories in the village (approx. area in hectares).

Note: See the Technical Guidelines for definition of land and ownership categories.

1. Land category (code-land)	**2. Total area** (ha)	Ownership (ha)			
		3. State	**4. Community**	**5. Private**	**6. Open access** (*de facto*)
Forest:					
1. Natural forest					
2. Managed forests					
3. Plantations					
Agricultural land:					
4. Cropland					
5. Pasture (natural or planted)					
6. Agroforestry					
7. Silvipasture					
8. Fallow					
Other land categories:					
9. Shrubs					
10. Grassland					
11. Residential areas, infrastructure					
12. Wetland					
13. Other, specify:					
14. Total land					

2. What are the main forest types, users and products in the village?

Note: The purpose is to link forest types, users and products. See the Technical Guidelines for further elaboration.

Note: The total forest area should be the same as in the above table.

1.Type of forest (code- forest)	**2.Ownership** (code-tenure)	**3.Approx. area** (*ha*)	Main users[1] (max. 3)			Main products (max. 3) (code-product)		
			4.Rank 1	**5.Rank2**	**6.Rank3**	**7.Rank1**	**8.Rank2**	**9.Rank3**

1) By "main users" is meant those who have acquired the highest value of forest products (subsistence and cash) from a given forest type in the past 12 months.

Codes: Choose the most appropriate among the following groups (as some do overlap):

1 = villagers that are members of FUG;

2 = villagers not members of FUG;

3 = subsistence oriented users in the village;

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4 = small-scale commercial users in the village;
5 = large-scale commercial users in the village;
6 = subsistence oriented users from outside the village;
7 = small-scale commercial users from outside the village;
8 = large-scale commercial users from outside the village;
9 = other, specify:

3. Does the village practice any form of active and deliberate forest management?

Type of management	Code[1]
1. Planting of trees	
2. Cutting down undesired (competing) trees	
3. Protecting certain desired (patches of) trees in the forest to promote the natural regeneration of these species	
4. Protecting areas of forest for particular environmental services, like water catchment	
5. Establishing clear use rights for a limited number of people to particular forest products (e.g., honey trees)	
9. Other, specify:	

1) Codes: 0=no, not at all; 1=yes, but only to a limited extent; 2=yes, they are common.

E. Forest resource base

Note: The questions should be asked in a village meeting or focus group for each of the categories in turn (i.e. column by column, and not row by row).

	1. Fire-wood or charcoal	2. Timber or other wood	3. Food from the forest	4. Medicine from the forest	5. Forage from the forest	6. Other[1]
1. What is the most important product (MIP) for the livelihood of the people in the village (in this category)? [2] *(name)*						
2. *(code-product)*						
3. How has availability of the MIP changed over the past 5 years? *Codes: 1=declined; 2=about the same; 3=increased*						
4. If the availability of the MIP in this category has **declined**, what are the reasons? *Please rank the most important reasons, max. 3 (leave rest blank).*	**Reason**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**
	1. Reduced forest area due to small-scale clearing for agriculture					
	2. Reduced forest area due to large-scale projects (plantations, new settlements, etc.)					
	3. Reduced forest area due to people from outside buying land and restricting access					
	4. Increased use of MIP due to more local (village) people collecting more					
	5. Increased use of MIP due to more people from other villages collecting more					
	6. Restrictions on use by central or state government (e.g., for forest conservation)					
	7. Local restrictions on forest use (e.g., community rules)					

		Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3
	8. Climatic changes, e.g., drought and less rainfall						
	9. Other, specify:						
5. If the availability of the MIP in this category has **increased**, what are the reasons? *Please rank the most important reasons, max. 3.*	**Reason**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**
	1. Less clearing of forests for agriculture (incl. pastoralism)						
	2. Fewer local (village) people collecting less						
	3. Fewer people from other villages collecting less						
	4. Reduced use from large-scale commercial users/projects						
	5. Changes in management of forests						
	6. Climatic changes, e.g., more rainfall						
	9. Other, specify:						
6. What would be most important to increase the benefits (use or income) from the MIP? *Please rank the most important reasons, max. 3.*	**Action**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**
	1. Better access to the forest/MIP, i.e., more use rights to village						
	2. Better protection of forest/MIP (avoid overuse)						
	3. Better skills and knowledge on how to collect/use it						
	4. Better access to credit/capital and equipment/technology						
	5. Better access to markets and reduced price risk						
	9. Other, specify:						

1) Select the most important product for the village that does not fall into any of the other five categories.
2) "Most important" is defined as the most important for the wellbeing of the village, whether it be through direct use in the home, or through sale for cash, or both. MIP can range from a product group (such as firewood) to a single species (such as a very important species used for firewood).

F. Forest institutions

Note: The questions should be asked in a village meeting or focus group for each of the categories in turn (i.e., column by column, and not row by row).
Note: The MIP in each category should be identical to those in the table above.

	1. Fire-wood or charcoal	2. Timber or other wood	3. Food from the forest	4. Medicine from the forest	5. Forage from the forest	6. Other[1]
1. What is the most important product (MIP) for the livelihood of the people in the village (in this category)? *(name)*						
2. *(code-product)*						
3. In what type of forest do you get the MIP? *(code-forest)*						
4. What is the ownership status of this forest *(code-tenure)*						
5. Are there customary rules regulating the use of the						

MIP in the village? *Codes: 0=none/very few; 1=yes, but vague/unclear; 2=yes, clear rules exist* *If code '0', go to 7.*						
6. **If 'yes'**: are the *customary* rules regarding forest use enforced /respected by the population of the village?[1]						
7. Are there *government* rules that regulate forest use? *Codes: 0=none/very few; 1=yes, but vague/unclear; 2=yes, clear rules exist* *If code '0', go to 9.*						
8. **If 'yes' (code '1' or '2' above):** are the *government* rules enforced/respected by the members in the village?[1]						
9. Do the villagers require any permission to harvest the MIP? *Codes: 0=no; 1=yes, users have to inform the authorities; 2=yes, written permission needed* *If code '0', go to next section.*						
10. **If 'yes' (code '1' or '2' above):** does the user have to pay for the permission?	*(1-0)*	*(1-0)*	*(1-0)*	*(1-0)*	*(1-0)*	*(1-0)*
11. **If 'yes'**: who issues this permit? *Codes: 1=village head; 2=FUG; 3=forest officer (forest departments); 4=other government official; 9=other, specify:*						

1) Codes: 0=no/very little; 1=to a certain extent by some groups of villagers; 2=to a certain extent by everyone; 3=yes, but only by some groups of villagers; 4=yes, by everyone; 9=no particular rules exist.

G. Forest User Groups (FUG)

1. Existence of forest user groups (FUG).
Note: See the Technical Guidelines for a definition.

1. How many forest user groups (FUG) are there in the village?	

2. Information about each FUG (use one column per FUG).

		1. FUG1	*2. FUG2*	*3. FUG3*
1. When was the group formed? *(yyyy)*				
2. How was the group formed? *Codes: 1=local initiative; 2=initiative from NGO; 3=initiative from government, e.g., Forest Department; 4=other, specify:*				
3. Is the FUG's main purpose related to the management of a particular forest area or of particular forest product(s)? *Codes: 1=area; 2=product(s); 3=both*				
4. If for a product (code 2 or 3above), what is the (main) product? *(code-product)*				
5. How many members are there in the group?				
6. How many times per year does the FUG have meetings?				
7. Does the group have a written management plan?		*(1-0)*	*(1-0)*	*(1-0)*
8. What are the main tasks of the FUG? *Select as many as appropriate: 1-0 code*	1. Setting rules for use	*(1-0)*	*(1-0)*	*(1-0)*
	2. Monitoring and policing	*(1-0)*	*(1-0)*	*(1-0)*
	3. Silviculture & management	*(1-0)*	*(1-0)*	*(1-0)*
	4. Harvesting forest products	*(1-0)*	*(1-0)*	*(1-0)*
	5. Selling forest products	*(1-0)*	*(1-0)*	*(1-0)*
	9. Other, specify:	*(1-0)*	*(1-0)*	*(1-0)*
9. Has any development project been implemented in the village over the past 5 years using proceeds from the FUG?		*(1-0)*	*(1-0)*	*(1-0)*

10. Has anyone in the village been violating the rules of the FUG over the past 12 months? *If 'no', go to 14.*	*(1-0)*	*(1-0)*	*(1-0)*
11. **If 'yes'**: did the FUG impose any penalties on those violating the rules? *If 'no', go to 14*	*(1-0)*	*(1-0)*	*(1-0)*
12. **If 'yes'**: what type of penalties? *Codes: 1=fee (cash payment); 2=returning collected products; 3=labour (extra work); 4=exclusion from group; 9=other, specify:*			
13. Which group of forest users have most commonly violating the rules over the past 5 years? *Codes: 1=members of FUG; 2=non-FUG members in the village; 3=people from other villages; 9=other, specify:*			
14. Overall, on a scale from 1-5 (1 is highest, 5 is lowest) how effective would you say that the FUG is in ensuring sustainable and equitable forest use?			

Note: Any FUGs in the village should be further discussed in the village narrative.

Village survey 2 (V2)

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Meeting with officials			
Village/focus group meetings			
Other interviews			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Geographic and climate variables

1.	What is the name of the village?	*(name)	(village code)
2.	What was the total rainfall in the village for the past 12 months?		mm/year
3.	If rainfall data not available (question 2): How was the rainfall past 12 months compared with a normal year (=average last 20 years)? *Codes: 1=well below normal (< 50 %); 2=below normal (50-90%); 3=normal (90-110%); 4=above normal (110-150%); 5=well above normal (> 150%)*		

B. Risk

1. Has the village faced any of the following crises over the past 12 months? *Codes: 0=no; 1=yes, moderate crisis; 2=yes, severe crisis*	1. Flood and/or excess rain	
	2. Drought	
	3. Wild fire (in crops/ forest/grasslands etc)	
	4. Widespread crop pest/disease and/or animal disease	
	5. Human epidemics (disease)	
	6. Political/civil unrest	
	7. Macro-economic crisis	
	8. Refugee or migration infusion	
	9. Other, specify:	

C. Wages and prices

			Male	Female
1.	What was the typical daily wage rate for unskilled agricultural/casual adult **male/female** labour during the **peak/slack** season in this village over the past 12 months? *(Lc$/day)*	Peak	1.	2.
		Slack	3.	4.
2.	What is the main staple food in the village? *(code-product)*			
3.	What was the price of a kg of the main staple food during the past 12 months **before** and **after** the main agricultural harvest? *(Lc$/kg)*		**1. Before harvest**	**2. After harvest**
4.	What is the sales value of one hectare of good agricultural land in the village (i.e., not degraded, not too steep, and suitable for common crops, and within 1km of the main road or settlement) *(Lc$/hectare)*			

D. Forest services

1.	Has the village (as a community or individuals in the village) received any direct benefits (in kin or in cash) related to forest services over the past 12 months? *Codes: 0=no; 1=yes, directly to households; 2=yes, directly to village (e.g., development project); 3=yes, both to household and village*		
2.	If the village has received payment (code 2 or 3 above), please indicate the amount the village has received.	**Payments related to:**	**Amount**
		1. Tourism	
		2. Carbon sequestration	
		3. Water catchment	

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		4. Biodiversity conservation	
		5. Compensation from timber company	
		6. Compensation from mining company	
		9. Other, specify:	
3.	Has the village received any forestry-related external support (technical assistance, free inputs, etc.) from government, donors, NGOs) over the past 12 months?		*(1-0)*

Note: If any such payment or assistance has been received it should be elaborated in the village narrative.

Annual household survey 1 (A1)

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Identification

1. Identification and location of household.

1.	Household name and code	*(name)	(HID)
2.	Village name and code	*(name)	(VID)
3.	District name and code	*(name)	(DID)
4.	Name and PID (see B. below) of primary respondent	*(name)	(PID)
5.	Name and PID (see B. below) of secondary respondent	*(name)	(PID)
6.	GPS reference point of household (UTM format)		
7.	Distance of the household from the centre of village (in *minutes of walking* and in *km*)	*1.* min	*2.* km

B. Household composition

1. Who are the members of the household?
Note: Recall the definition of households in the Technical Guidelines.

1. Personal Identification number (PID)	* Name of household member	2. Relation to household head[1]	3. Year born[2] *(yyyy)*	4. Sex *(0=male 1=female)*	5. Education *(number of years completed)*	6. Non-formal education *(number of years completed)*	7. Special skills[3]
1		Household head = code 0					
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

1) Codes: 1=spouse (legally married or cohabiting); 2=son/daughter; 3=son/daughter in law; 4=grandchild;
5=mother/father; 6=mother/father in law; 7=brother or sister; 8=brother/sister in law; 9=uncle/aunt; 10=nephew/niece;
11=step/foster child; 12=other family; 13=not related (e.g., servant).
2) One may ask about age, and the calculate 'year born' when entering data.
3) Codes: 1=shop/trade; 2=agric. processing; 3=handicraft; 4=carpentry; 5=other forest based; 6=other skilled labour;
7=transport (car, boat,…); 8=lodging/restaurant; 9=brewing; 10=brick making; 11=landlord/real estate;
12=herbalist/traditional healer/witch doctor; 13=quarrying; 19=other, specify:

2. We would like to ask some questions regarding the head of this household.

1.	What is the marital status of household head? *Codes: 1=married and living together; 2=married but spouse working away; 3=widow/widower; 4=divorced;; 5=never married; 9=other, specify:*	
2.	How long ago was this household formed (see definition of household)	*years*
3.	Was the household head born in this village? *If 'yes', go to 5.*	*(1-0)*
4.	**If 'no':** how long has the household head lived in the village?	*years*
5.	Does the household head belong to the largest ethnic group/caste in the village?	*(1-0)*

C. Land

1. Please indicate the amount of land (in hectares) that you currently own and have rented in/out.
Note: See definitions of land categories in the Technical Guidelines.

Category	1. Area *(ha)*	2. Ownership *(code-tenure)*	Main products grown/harvested in the past 12 months Max 3 *(code-product)*		
			3. Rank1	4. Rank2	5. Rank3
Forest:					
1. Natural forest					
2. Managed forests					
3. Plantations					
Agricultural land:					
4. Cropland					
5. Pasture (natural or planted)					
6. Agroforestry					
7. Silvipasture					
8. Fallow					
9. Other vegetation types/land uses (residential, bush, grassland, wetland, etc.)					
10. Total land owned (1+2+3+…+9)					
11. Land rented out (**included** in 1-9)					
12. Land rented in (**not included** in 1-9)					

D. Assets and savings

1. Please indicate the type of house you have?

1. Do you have your own house? [1]	
2. What is the type of material of (most of) the walls? [2]	
3. What is the type of material of (most of) the roof? [3]	
4. How many m^2 approx. is the house?	*m^2*

1) Codes: 0=no; 1=own the house on their own; 2=own the house together with other household(s); 3=renting the house alone; 4=renting the house with other household(s); 9=other, specify:
2) Codes: 1=mud/soil; 2=wooden (boards, trunks); 3=iron (or other metal) sheets; 4=bricks or concrete; 5=reeds/straw/grass/fibers; 9=other, specify:
3) Codes: 1=thatch; 2=wooden (boards); 3=iron or other metal sheets; 4=tiles; 9=other, specify:

2. Please indicate the number and value of implements and other large household items that are owned by the household.
Note: see latest version of "PEN codes list" for a complete list of items and codes.

	1. No. of units owned	2. Total value (current sales value of all units, not purchasing price)
1. Car/truck		
2. Tractor		

3.	Motorcycle		
4.	Bicycle		
5.	Handphone/phone		
6.	TV		
7.	Radio		
8.	Cassette/CD/ VHS/VCD/DVD/ player		
9.	Stove for cooking (gas or electric only)		
10.	Refrigerator/freezer		
11.	Fishing boat and boat engine		
12.	Chainsaw		
13.	Plough		
14.	Scotch cart		
15.	Shotgun/rifle		
16.	Wooden cart or wheelbarrow		
17.	Furniture		
18.	Water pump		
19.	Solar panel		
20.	Timber trees outside forests		
99.	Others (worth more than approx. 50 USD purchasing price)		

3. Please indicate the savings and debt the household has.

1.	How much does the household have in savings in banks, credit associations or savings clubs?	Lc$
2.	How much does the household have in savings in non-productive assets such as gold and jewelry?	Lc$
3.	How much does the household have in outstanding debt?	Lc$

E. Forest resource base

1.	How far is it from the house/homestead to the edge of the nearest natural or managed forest that you have access to and can use?	1. … measured in terms of distance (straight line)?	km
		2. … measured in terms of time (in minutes of walking)?	min
2.	Does your household collect firewood? *If 'no', go to 8.*		(1-0)
3.	**If 'yes'**: how many hours per week do the members of your household spend on collecting firewood for family use? (adult time should be reported; child time = 50 % of adult time)		(hours)
4.	Does your household now spend more or less time on getting firewood than you did 5 years ago? *Codes: 1=more; 2=about the same; 3=less*		
5.	How has availability of firewood changed over the past 5 years? *Codes: 1=declined; 2=about the same; 3=increased* *If code '2' or' 3', go to 7.*		
6.	**If declined** (code '1' on the question above), how has the household responded to the decline in the availability of firewood? *Please rank the most important responses, max 3.*	**Response**	**Rank 1-3**
		1. Increased collection time (e.g., from further away from house)	
		2. Planting of trees on private land	
		3. Increased use of agricultural residues as fuel	
		4. Buying (more) fuelwood and/or charcoal	
		5. Buying (more) commercial fuels (kerosene, gas or electricity)	
		6. Reduced the need for use of fuels, such as using improved stove	
		7. More conservative use of fuelwood for cooking and heating	
		8. Reduced number of cooked meals	
		10. Use of improved technology	

	11. Increased use of non-wood wild products (ex. reeds)	
	12. Restricting access/use to own forest	
	13. Conserving standing trees for future	
	14. Making charcoal	
	9. Other, specify:	

7.	Has your household planted any woodlots or trees on farm over the past 5 years? *If 'no', go to next section.*		*(1-0)*

		Purpose	**Rank 1-3**
8.	**If yes:** what are the main purpose(s) of the trees planted? *Please rank the most important purposes, max 3.*	1. Firewood for domestic use	
		2. Firewood for sale	
		3. Fodder for own use	
		4. Fodder for sale	
		5. Timber/poles for own use	
		6. Timber/poles for sale	
		7. Other domestic uses	
		8. Other products for sale	
		9. Carbon sequestration	
		10. Other environmental services	
		11. Land demarcation	
		19. Other, specify:	

F. Forest User Groups (FUG)

Note: The enumerator should first explain what is meant by a FUG, cf. the Technical Guidelines.

1.	Are you or any member of your household a member of a Forest User Group (FUG)? *If 'no', go to 11.*	*(1-0)*
2.	Does someone in your household normally/regularly attend the FUG meetings? *If 'no', go to 5.*	*(1-0)*
3.	**If 'yes':** in your household, who normally attends FUG meetings and participates in other FUG activities? *Codes: 1=only the wife; 2=both, but mainly the wife; 3=both participate about equally; 4=both, but mainly the husband; 5=only the husband; 6=mainly son(s); 7=mainly daughter(s); 8=mainly husband & son(s); 10=mainly wife & daughter(s); 9=other arrangements not described above.*	
4.	How many person days (= full working days) did the household members spend in total on FUG activities (meetings, policing, joint work, etc) over the past 12 months?	*days*
5.	Does your household make any cash payments/contributions to the FUG? *If 'no', go to 7.*	*(1-0)*
6.	**If 'yes':** how much did you pay in the past 12 months? *(Lc$)*	
7.	Did your household receive any cash payments from the FUG (e.g., share of sales) in the past 12 months? *If 'no', go to 9.*	*(1-0)*
8.	**If 'yes':** how much did you receive in the past 12 months? *(Lc$)*	

		Reason	**Rank 1-3**
9.	What are your reasons for joining the FUG? *Please rank the most important reasons, max 3.*	1. Increased access to forest products	
		2. Better forest management and more benefits in future	
		3. Access to other benefits, e.g., government support or donor programmes	
		4. My duty to protect the forest for the community and the future	
		5. Being respected and regarded as a responsible person in village	
		6. Social aspect (meeting people, working together, fear of exclusion, etc.)|	
		7. Forced by Government/chiefs/neighbours	
		8. Higher price for forest product	
		10. Better quality of forest product	
		9. Other, specify:	

10.	Overall, how would you say the existence of the FUG has affected the benefits that the household gets from the forest?	

Codes: 1=large negative effect; 2=small negative effect; 3=no effect; 4=small positive effect; 5=large positive effect.		
11. **If you don't participate in FUG,** why? *Please rank the most important reasons, max 3*	**Reason**	**Rank 1-3**
	1. No FUG exists in the village	
	2. I'm new in the village	
	3. FUG members generally belong to other group(s) (ethnic, political party, religion, age, etc.) than I do	
	4. Cannot afford to contribute the time	
	5. Cannot afford to contribute the required cash payment	
	6. FUG membership will restrict my use of the forest, and I want to use the forest as I need it	
	7. I don't believe FUG is very effective in managing the forest	
	8. Lack of forest products	
	10. Not interested in the activities undertaken by existing FUGs	
	11. Corruption in FUG	
	12. Interested in joining but needs more information	
	13. FUG exists in village, but household is unaware of its presence	
	14. Forest authorities	
	15. Would like to but not allowed by FUG	
	9. Other, specify:	

Annual household survey 2 (A2)

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Identification

1. Identification of the household.

1.	Household name and code	*(name)	(HID)
2.	Village name and code	*(name)	(VID)
3.	District name and code	*(name)	(DID)
4.	Name and PID of primary respondent	*(name)	(PID)
5.	Name and PID of secondary respondent	*(name)	(PID)

B. Crisis and unexpected expenditures

1. Has the household faced any major income shortfalls or unexpectedly large expenditures during the past 12 months?

Event	1. How severe?[1]	How did you cope with the income loss or costs? Rank max. 3[2]		
		2. Rank1	3. Rank2	4. Rank3
1. Serious crop failure				
2. Serious illness in family (productive age-group adult unable to work for more than one month during past 12 months, due to illness, or to taking care of ill person; or high medical costs)				
3. Death of productive age-group adult				
4. Land loss (expropriation, etc.)				
5. Major livestock loss (theft, drought, etc.)				
6. Other major asset loss (fire, theft, flood, etc.)				
7. Lost wage employment				
8. Wedding or other costly social events				
9. Other, specify:				

1) Codes severity: 0=no crisis; 1=yes, moderate crisis; 2=yes, severe crisis. See Technical Guidelines for definitions.
2) Codes coping:
   1. Harvest more forest products
   2. Harvest more wild products not in the forest
   3. Harvest more agricultural products
   4. Spend cash savings
   5. Sell assets (land, livestock, etc.)
   6. Do extra casual labour work
   7. Assistance from friends and relatives
   8. Assistance from NGO, community org., religious org. or similar
   9. Get loan from money lender, credit association, bank etc.
   10. Tried to reduce household spending
   11. Did nothing in particular
   19. Other, specify:

C. Forest services

1. Has the household over the past 12 months received any cash or in kind payments related to the following forest services?

Principal purpose	1. Have received?	2. If yes, amounts (values) received (Lc$)

	(1-0)	*(if nothing, put '0')*
1. Tourism		
2. Carbon projects		
3. Water catchments projects		
4. Biodiversity conservation		
5. Compensation from timber company		
6. Compensation from mining company		
7. Others, specify:		

D. Forest clearing

1. Did the household clear any forest during the past 12 months? *If 'no', go to 9.*					*(1-0)*
If YES:	2. How much forest was cleared?				*ha*
	3. What was the cleared forest (land) used for? *Codes: 1=cropping; 2=tree plantation; 3=pasture; 4=non-agric uses (Rank max 3)*	1.Rank1	2.Rank2	3.Rank3	
	4. If used for crops (code '1' in question above), which principal crop was grown? *(code-product) Rank max 3*	1.Rank1	2.Rank2	3.Rank3	
	5. What type of forest did you clear? *(code-forest)*				
	6. If secondary forest, what was the age of the forest?				*years*
	7. What was the ownership status of the forest cleared? *(code tenure)*				
	8. How far from the house was the forest cleared located?				*km*
9. Has the household over the last *5* years cleared forest? *If 'no', go to 11.*					*1-0*
10. **If 'yes':** how much forest (approx.) has been cleared over the last 5 years? *Note: This should include the area reported in question 2.*					*ha*
11. How much land used by the household has over the last 5 years been abandoned (left to convert to natural re-vegetation)?					*ha*

E. Welfare perceptions and social capital

1.	All things considered, how satisfied are you with your life over the past 12 months? *Codes: 1=very unsatisfied; 2=unsatisfied; 3=neither unsatisfied or satisfied; 4=satisfied; 5=very satisfied*		
2.	Has the household's food production and income over the past 12 months been sufficient to cover what you consider to be the needs of the household? *Codes: 1=no; 2=reasonable (just about sufficient); 3=yes*		
3.	Compared with other households in the village (or community), how well-off is your household? *Codes: 1=worse-off; 2=about average; 3=better-off*		
4.	How well-off is your household today compared with the situation **5 years ago?** *Codes: 1=less well-off now; 2=about the same; 3=better off now* *If 1 or 3, go to 5. If 2, go to 6.*		
5.	**If worse-** *or* **better-off:** what is the main reason for the change? *Please rank the most important responses, max 3.*	**Reason: Change in …**	**Rank 1-3**
		1. off farm employment	
		2. land holding (e.g., bought/sold land)	
		3. forest resources	
		4. output prices (forest, agric,…)	
		5. outside support (govt., NGO...)	
		6. remittances	
		7. cost of living (e.g., high inflation)	

	8. war, civil strife, unrest	
	9. conflicts in village (non-violent)	
	10. change in family situation (e.g. loss of family member/a major bread-winner)	
	11. illness	
	12. access (e.g. new road…)	
	19. other (specify):	
6.	Do you consider your village (community) to be a good place to live? *Codes: 1=no; 2=partly; 3=yes*	
7.	Do you **in general** trust people in the village (community)? *Codes: 1=no; 2=partly, trust some and not others; 3=yes*	
8.	Can you get help from other people in the village (community) if you are in need, for example, if you need extra money because someone in your family is sick? *Codes: 1=no; 2= can sometimes get help, but not always; 3=yes*	

F. Enumerator/researcher assessment of the household

*Note: This is to be completed by the enumerator and/or the PEN partner. If the enumerator doing the A2 (and Q4) is **not** the one who has been doing previous quarterly surveys, those who have had the most exposure to the household should fill in questions 2-5.*

1.	During the last interview, did the respondent smile or laugh? *Codes: (1) neither laughed nor smiled (somber); (2) only smiled; (3) smiled and laughed; (4) laughed openly and frequently.*	
2.	Based on your impression and what you have seen (house, assets, etc.), how well-off do you consider this household to be compared with other households in the village? *Codes: 1=worse-off; 2=about average; 3=better-off*	
3.	How reliable is the information **generally** provided by this household? *Codes: 1=poor; 2=reasonably reliable; 3=very reliable*	
4.	How reliable is the information on **forest collection/use** provided by this household? *Codes: 1=poor; 2=reasonably reliable; 3=very reliable*	
5.	If the forest information is not so reliable (code 1 above), do you think the information provided overestimate or underestimate the actual forest use? *Codes: 1=underestimate; 2=overestimate; 3= no systematic over- or underestimation; 4=don't know.*	

Quarterly household surveys (Q1-Q4)

Note: All incomes are asked for the past month (past 30 days), except for the last sections on crops, livestock and other income sources where the recall period is 3 months.
Note: The researcher should list the most common products in the various tables, based on RRAs and pre-testing of the questionnaire. After asking about these pre-listed products, the enumerator should ask if there are any other products not mentioned that the household has harvested/collected over the past 1 (3) month(s).

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Identification

1. Identification of the household.

1.	Household name and code	*(name)*	(HID)
2.	Village name and code	*(name)*	(VID)
3.	District name and code	*(name)*	(DID)
4.	Name and PID of primary respondent	*(name)*	(PID)
5.	Name and PID of secondary respondent	*(name)*	(PID)

B. Direct forest income (income from unprocessed forest products)

1. What are the quantities and values of raw-material forest products the members of your household collected for both own use and sale over **the past month**?
Note: Income from plantations is defined as forest income, while agroforestry income is categorized as agric. income (H).
Note: The quantities of unprocessed forest products used as inputs in making processed forest products should only be reported in section C, table 2, and not in the table below.

1. Forest product *(code-product)*	2. Collected by whom? [1]	Collected where?		5. Quantity collected (7+8)	6. Unit	7. Own use (incl. gifts)	8. Sold (incl. barter)	9. Price per unit	10. Type of market *(code-market)*	11. Gross value (5*9)	12. Transport/ marketing costs (total)	13. Purch. inputs & hired labour	14. Net income (11-12-13)
		3. Land type *(code-land)*	4. Owne rship *(code-tenure)*										

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.
Note: Answers in columns 3 and 4 should be consistent with land categories reported in village questionnaire (V1D01) and in the annual household questionnaire (A1C).

2. What are the quantities and values of raw-material forest products the members of your household collected for both own use and sale over **the past three months**?

Note: Income from significant sources of income that are likely to be missed using one month recall period. Use pre-defined product list from RRA and A1.
Note: Income from plantations is defined as forest income, while agroforestry income is categorized as agric. income (H).
Note: The quantities of unprocessed forest products used as inputs in making processed forest products should only be reported in section C, table 2, and not in the table below.
Note: a given product should be included in either B0 or B1 (not in both tables).

| 1. Forest product *(code-product)* | 2. Collected by whom? [1] | Collected where? | | 5. Quantity collected (7+8) | 6. Unit | 7. Own use (incl. gifts) | 8. Sold (incl. barter) | 9. Price per unit | 10. Type of market *(code-market)* | 11. Gross value (5*9) | 12. Transport/marketing costs (total) | 13. Purch. inputs & hired labour | 14. Net income (11-12-13) |
		3. Land type *(code-land)*	4. Ownership *(code-tenure)*										

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.
Note: Answers in columns 3 and 4 should be consistent with land categories reported in village questionnaire (V1D01) and in the annual household questionnaire (A1C).

C. Forest-derived income (income from processed forest products)

1. What are the quantities and values of processed forest products that the members of your household produced during **the past month?**

1. Product *(code-product)*	2. Who in the household did the work?[1]	3. Quantity produced (5+6)	4. Unit	5. Own use (incl. gifts)	6. Sold (incl. barter)	7. Price per unit	8. Type of market *(code-market*	9. Gross value (3*7)	10. Purchased inputs & hired labour	11. Transport/marketing costs	12. Net income excl. costs of forest inputs (9-10-11)

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.

2. What are the quantities and values of *unprocessed* forest products used as inputs (raw material) to produce the *processed* forest products in the table above?
*Note: Avoid double counting with section B: only products used an inputs are recorded in the table below, and these quantities should **not** be included in what is recorded in section B.*

1.	2. Unpro-	3.	4. Unit	5.	6.	Collected where?	9.	10. Price	11.

Processed (final) products *(code-product)*	cessed forest product used as input *(code-product)*	Quantity used (5+6)		Quantity purchased	Quantity collected by household	7. Land type *(code-land)*	8. Owner-ship *(code-tenure)*	Who in the house-hold collected the forest product?[1]	per unit	Value (3*10)

1) Codes as in the table above.
Note: The products in column 1 should be exactly the same as those in column 1 in the table above.
Note: Columns 7,8,9 should be left blank if no collection by household. Column 10 (price) should be asked even if only from collection, but if not available, see the Technical Guidelines on valuation.
Note: Answers in columns 7 and 8 should be consistent with land categories reported in village questionnaire (V1D01) and in the annual household questionnaire (A1C).

D. Fishing and aquaculture

1. How much fish did your household catch **exclusively from the wild** (rivers, lake, sea) during **the past month**?

1.Type of fish (list local names)*	Collected where?		4. Total catch (kg) (5+6)	5. Own use (incl. gifts)	6. Sold (incl. barter)	7. Price per kg	8. Gross value (4*7)	9. Costs (inputs, hired labour, marketing)	10. Net income (8-9)
	2. Land type *(code-land)*	3. Owner-ship *(code-tenure)*							

Note: Answers in columns 2 and 3 should be consistent with land categories reported in the village questionnaire (V1D01) and in the annual household questionnaire (A1C).

2. How much fish did your household catch **from ponds (aquaculture)** in **the past month**?

1. Type of fish (list local names)*	2. From where? [1]	3. Total catch (kg) (4+5)	4. Own use (incl. gifts)	5. Sold (incl. barter)	6. Price per kg	7. Gross value (3*6)	8. Costs (inputs, hired labour, marketing, etc.)	9. Net income (7-8)

1) Codes: 1=Pond owned by households; 2=Pond owned by group of which household is a member; 3=Pond owned by community/village; 4=Pond owned by others and persons can buy fishing rights (include costs in column 7); 9=Other, specify:

E. Non-forest environmental income

1. In addition to forest products and fish included in the previous tables, how much of **other wild products** (e.g., from grasslands, fallows, etc.) did your household collect **in the past month**?

1. Type	Collected where?	4.	5. Unit	6. Own	7. Sold	8. Price	9. Gross	10. Costs	11. Net

of product *(code-product)*	2. Land type *(code-land)*	3. Owner-ship *(code-tenure)*	Quantity collected (6+7)		use (incl. gifts)	(incl. barter)	per unit	value (4*8)	(inputs, hired labour, marketing, etc.)	income (9-10)

Note: Answers in columns 2 and 3 should be consistent with land categories reported in the village questionnaire (V1D01) and in the annual household questionnaire (A1C).

2. In addition to forest products and fish included in the previous tables, how much of **other wild products** (i.e. non-cultivated products from grasslands, fallows, etc.) did your household collect **in the past three months**?
Note: Income from significant sources of income that are likely to be missed using one month recall period. Use pre-defined product list from RRA and A1.
Note: a given product should be recorded in either E0 or E1 (not in both tables)

1. Type of product *(code-product)*	Collected where?		4. Quantity collected (6+7)	5. Unit	6. Own use (incl. gifts)	7. Sold (incl. barter)	8. Price per unit	9. Gross value (4*8)	10. Costs (inputs, hired labour, marketing, etc.)	11. Net income (9-10)
	2. Land type *(code-land)*	3. Owner-ship *(code-tenure)*								

Note: Answers in columns 2 and 3 should be consistent with land categories reported in the village questionnaire (V1D01) and in the annual household questionnaire (A1C).

F. Wage income

1. Has any member of the household had paid work over **the past three months**?
Note: One person can be listed more than once for different jobs.
*Note: If a person has worked but not yet received payment, the **expected** income is recorded in column 5 while the **actually received** income is recorded in column 6. In cases of pre-payment and/or late payment for work, the actual days worked, the negotiated daily wage rate and the actual amount received are recorded in columns 3, 4 and 6, respectively.*

1. Household member (PID)	2. Type of work *(code-work)*	3. Days worked past 3 months	4. Daily wage rate	5. Total (expected) wage income (3*4)	6. Total wage income actually received

G. Income from own business (not forest or agriculture)

1. Are you involved in any types of business, and if so, what are the gross income and costs related to that business over **the past month?**
Note: If the household is involved in several different types of business, you should fill in one column for each business.

	1. Business 1	2. Business 2	3. Business 3
1. What is your type of business?[1]			
2. Gross income (sales)			
Costs:			
3. Purchased inputs			
4. Own non-labour inputs (equivalent market value)			
5. Hired labour			
6. Transport and marketing cost			
7. Capital costs (repair, maintenance, etc.)			
8. Other costs			
9. Net income (2 - items 3-8)			
10. Current value of capital stock			

1) Codes: 1=shop/trade; 2=agric. processing; 3=handicraft; 4=carpentry; 5=other forest based; 6=other skilled labour;
7=transport (car, boat,…); 8=lodging/restaurant; 9=brewing; 10=brick making; 11=landlord/real estate;
12=herbalist/traditional healer/witch doctor; 13=quarrying; 19=other, specify:

H. Income from agriculture – crops

1. What are the quantities, uses and values of crops that household **has harvested** during **the past 3 months**?
Note: only include crops that were harvested during the past three months. Use of stored crops is booked in table 1a.
Note: remember to probe for and include small quantities of crops that are continuously harvested for subsistence uses.

1. Crops (code-product)	2. Area of production (m^2)	3. Total production (5+6+9)	4. Unit (for production)	5.Own use (incl. gifts)	6. Sold (incl. barter)	7. Price per unit	8.Total value ((5+6)*7)	9. To stock

1a. What are the quantities and values of **stored** crops that household **has used** (consumed or sold) during **the past 3 months**?

1. Crops (code-product)	2. Unit (for storage)	3. Opening stock (3 months ago)	4.Own use (incl. gifts)	5. Sold (incl. barter)	6. Price per unit	7.Total value ((4+5)*6)	8. To stock (from H1/9)	9. Stock now (3-4-5+8)

2. What are the quantities and values of inputs used in crop production over **the past 3 months** (this refers to agricultural cash expenditures)?
Note: Take into account all the crops in the previous table.
Note: See codes-list (section 3.2) for additional codes.

1. Inputs	2. Quantity	3. Unit	4. Price per unit	5. Total costs (2*4)
1. Seeds				
2. Fertilizers				
3. Pesticides/herbicides				
4. Manure				
5. Draught power				
6. Hired labour				
7. Hired machinery				
8. Transport/marketing				
19. Other, specify:				

20. Payment for land rental					

I. Income from livestock

1. What is the number of ADULT larger animals your household has now, and how many have you sold, bought, slaughtered or lost during **the past 3 months**?
Note: Only include larger valuable animals; smaller animals are included in table 1a.
Note: See codes-list (section 3.3) for additional codes.

1. Livestock	2. Beginning number (3 months ago)	3.Sold (incl. barter), live or slaught-ered	4.Slaught-ered for own use (or gift given)	5. Lost (theft, died,…)	6. Bought or gift received	7. New from own stock	8. End number (now) (2-3-4-5+6+7)	9. Price per adult animal	10. Total end value (8*9)
1. Cattle									
2. Buffalos									
3. Goats									
4. Sheep									
5. Pigs									
6. Donkeys									
9. Horses									
10. Turkey									
19. Other, specify:									

1a. What is the number of ADULT smaller animals your household has sold or consumed during **the past month**?
Note: See codes-list (section 3.3) for additional codes.

1. Livestock	2.Sold (incl. barter), live or slaughtered	3.Slaught-ered for own use (or gift given)	4. Price per adult animal	5. Total value ((2+3)*5)
7. Ducks				
8. Chicken				
10. Guinea pigs				
11. Rabbit				
13. Guinea fowl				
19. Other, specify:				

2. What are the quantities and values of animal products and services that you have produced during **the past 3 months**?

1. Product/service	2. Production (4+5)	3. Unit	4. Own use (incl. gifts)	5. Sold (incl. barter)	6. Price per unit	7. Total value (2*6)
1. Meat [1]						
2. Milk [2]						
3. Butter						
4. Cheese						
5. Ghee						
6. Eggs						
7. Hides and skin						

8. Wool					
9. Manure					
10. Draught power					
11. Bee hives					
12. Honey					
13. Curdled milk					
14. Soap					
19. Other, specify					

1) Make sure this corresponds with the above table on sale and consumption of animals.
2) Only milk consumed or sold should be included. If used for making, for example, cheese it should not be reported (only the amount and value of cheese).

3. What are the quantities and values of inputs used in livestock production during **the past 3 months** (cash expenditures)?
Note: The key is to get total costs, rather than input units.

1. Inputs	**2. Unit**	**3. Quantity**	**4. Price per unit**	**5. Total costs (3*4)**
1. Feed/fodder				
2. Rental of grazing land				
3. Medicines, vaccination and other veterinary services				
4. Costs of maintaining barns, enclosures, pens, etc.				
5. Hired labour				
6. Inputs from own farm				
9. Other, specify:				

4. Please indicate approx. share of fodder, either grazed by your animals or brought to the farm by household members.

Type of grazing land or source of fodder		**3. Approx. share** (%)
1. Land type *(code-land)*	**2. Ownership** *(code-tenure)*	
Total		100%

J. Other income sources

1. Please list any other income that the household has received during **the past 3 months**.

1. Type of income	**2. Total amount received past 3 months**
1. Remittances	
2. Support from government, NGO, organization or similar	
3. Gifts/support from friends and relatives	
4. Pension	
5. Payment for forest services	
6. Payment for renting out land (if in kind, state the equivalent in cash)	
7. Compensation from logging or mining company (or similar)	
8. Payments from FUG	
9. Other, specify:	

Attrition (drop out) and temporary absence survey (ATA)

Control information

Task	Date(s)	By whom?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Identification

1. Identification and location of household.

8. Household name and code	*(name)*	(HID)
9. Village name and code	*(name)*	*(VID)*
10. District name and code	*(name)*	*(DID)*
4. Who did you interview[1]		
5. Has the household left the PEN survey temporary (one quarterly survey only) or permanently (remaining surveys)?		*(1=temporary; 2=permanently; 3=don't know yet)[2]*

1) Codes: 1 = member(s) of the household; 2 = neighbours; 3 = relatives; 4 = village headman/leader/officials; 9=others, specify: _____

2) Code 3 should only be used temporary; use 1 or 2 in final dataset.

B. Reasons for dropping out

1. What is the reason for the household to drop out of the PEN survey this quarter?	**Reason**	**0-1 (quest. 1) or code**
	1. Moved/migrated permanently	
	2. Temporarily away from village (work, visit, …)	
	3. Divorce	
	4. (Re) married	
	5. Death	
	6. Illness	
	7. Child birth	
	8. Refuse because too busy	
	9. Refuse because don't want to reveal household information	
	10. Refuse because tired of answering the questionnaire	
	11. Could not locate the household	
	19. Other	
2. If moved/migrated (response 1), to where? *Codes: 1=within village; 2=neighbouring village; 3=to village further away (another rural area); 4=to nearest town; 5=to major town further away; 9=other:_____*		
3. If moved/migrated from village, what was the reason for leaving? *Codes: 1=work or look for work; 2= (government) service, incl. army; 3=study; 4=follow or move (closer) to spouse/family; 5=marriage; 6=separation/divorce; 7= utilize inheritance; 8= seek medical treatment; 9=conflicts in present village; 19=other, _____*		
4. If the respondent died (response 5), give PID number:		
5. If the respondent died, what was the reason? *Codes: 1=illness; 2=old age; 3=accident; 4=violence; 5=suicide; 9=other:_____*		

The above questionnaire was administered in 2008. The 2009 questionnaire is the same except for the below two tables.

J. Other income sources

1. Please list any other income that the household has received during **the past 3 months**.

Income type	Total Amount from past 3 month
1. Amount sent from members outside the village/country	
2. Received from GOs, NGOs or other equivalent organizations (including old age payment)	
3. Received from friend or relatives	
4. Salary	
5. Received from Forest services	
6. Received from Land on rent (if given in no rent, local rate of rent)[Equivalent amount for the food grains received from ... also to be included]	
7. Compensation amount received from forest logging and mine industry.	
8. Interest	
9. Others- Specify	
10. House Rent	
11. Dhukuti	
12. Shop	
13. Religious works	
14. Selling of Land	
15. Write-up	

Details on household expenditure

Expenditure Heading	Duration	Amount
1. Food [bought]	1 month	
2. Clothes	3 month	
3. Loan Instalment	3 month	
4. Tea[shop and home]	1 week	
5. Beetle nut, cigarette, tobacco, etc.	1 week	
6. Social Work	3 month	
7. Bus Fare	1 month	
8. Plane fare	3 month	
9. Guest Hospitality	1 month	
10. Kerosene	3 month	
11. LP Gas	3 month	
12. School Fee	3 month	
13. Medicine	3 month	
14. Electricity bills	1 month	
15. Telephone	1 month	
19. Candle	3 month	
20. Water Bill	3 month	

21. Candle	1 month	
22. House Renovation	3 month	
23. Books and Copies	1 month	
24. Meat	1 month	
25. School Tiffin	1 month	
26. Cable Connection	1 month	
27. House Rent	1 month	
28. Others – Specify	1 month	
31. Petrol	1 month	
33. Bulb	1 month	
37. Others - Specify	3 month	

Appendix B3 Survey instrument 2012

<u>Danida-PEN Prototype Questionnaire</u>

*The prototype questionnaire was developed to gather the information required in the common data bank (CDB) of PEN. Minor revisions have been made in this 2012 version to suit the collection of panel data and enhance data quality. The questionnaire **must** be used together with the PEN Technical Guidelines, which define key concepts, elaborate and explain the questions, and specify common codes to be used (those in the "code-xxx" format in the questionnaire). Additions to the prototype questionnaire are marked with <mark>yellow</mark>.*

Technical notes:
- The numbers of the questions and lines and columns in the tables will be used to give each data cell a unique digital code, and should not be changed.
- A star (*) indicates that cell information may not be entered into the database, but is used for ease of recording.
- The following generic codes shall be used, although not being specified for each question:
  - **– 8 (minus eight)** is to be used to indicate that the question "does not apply" to the circumstances of the respondent(s).
  - **– 9 (minus nine)** is to be used for the alternative "I don't now" or '"The respondent doesn't know". Naturally, one should aim to minimize use of this response, but in some cases it's unavoidable.
- Each PEN survey shall make its own list of appropriate local units (weight and volume), with codes to be used in the survey. See the Technical Guidelines for details.
- The PEN Code List contains all the codes to be used, and must be used together with the questionnaire. The exception is the codes that apply only to single questions – these are included in the questionnaire itself.
- Several tables in the quarterly survey are "empty", which means you should fill in the locally most relevant products and use as many rows as needed (see instructions in section 5.1 of the guidelines).

Country and Survey Information (C1)

Note: One form should be filled out for each long-term site.

2. Please provide the following information about the timing of the surveys.

Survey	Date *(yyyymmdd)*
1. Start of surveys	
2. Completion of all surveys	
3. Start of V1	
4. Start of V2	
5. Start of A1	
6. Start of A2	
7. Start of Q1	
8. Start of Q2	
9. Start of Q3	
10. Start of Q4	
11. Site	

Village Survey 1 (V1)

Note: See the Technical Guidelines for the appropriate source of information and respondents for the various questions in the village surveys.

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Meeting with officials			
Village/focus group meetings			
Other interviews			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A2. General changes

1. Please describe what have been main changes since 2008 or 2009 (last survey) in relation to:

a. Infrastructure	
b. Forest management (e.g. amounts and types of products harvested)	
c. General price trend (rice, sugar, tea, other locally mentioned)	
d. Livelihood opportunities	
e. Development projects	

B1. Changes in demographics

	Number		Unit
2. What is the current population of the village?			*Persons*
3. How many households live currently in this village?			*households*
4. How many persons (approx.) living here now have moved to the village in the past 2 years (in-migration)?			*persons*
5. How many persons (approx.) have left the village over the past 2 years (out-migration)?			*persons*
6. List different ethnic groups, castes and tribes live in the village	**Name:**	**New:**	

C. Changes in Infrastructure

	Number		Unit
1. How many households (approx.) in the village have access to electricity (from public or private suppliers)?			*households*
2. How many households (approx.) in the village have access to (= use) piped tap water?			*Households*
2a. How many households (approx.) in the village have access to ground water?			*Households*
3. How many households (approx.) have access to formal credit (government or private bank operating in the village)?			*Households*
4. Are *informal* credit institutions such as savings clubs and money lenders present in the village?			*(1-0)*
5. Is there any health centre in the village?			*(1-0)*
6. Does the village have at least one road useable by cars during all seasons? *If 'yes', go to 8.*			*(1-0)*
7. **If 'no':** what is the distance in kilometers to the nearest road usable during all seasons?			*Km*
8. Is there a river within the village boundaries that is navigable during all seasons? *If 'yes', go to 10.*			*(1-0)*
9. **If 'no':** what is the distance to the nearest river that is navigable during all seasons?			*Km*

10. What is the distance from the village centre to the nearest … (in *km* and in *minutes* by *most common means of transport*)		**1. km**	**2. min**	**3. code-transport**
	1. district market			
	2. market for major consumption goods			
	3. market where agric. Products are sold			
	4. market where forest products are sold			

D. Forest and land cover/use

1. Land categories in the village (approx. area in hectares).

Note: See the Technical Guidelines for definition of land and ownership categories.

1. Land category (code-land)	2. Total area (ha)	Ownership and access today (ha)					
		3. State	3a. open access (state)	4. Community	4a. Open access (community)	5. Private	5a. Open access (private)
Forest:							
1. Natural forest							
2. Managed forests							
3. Plantations							
Agricultural land:							
4. Cropland							
5. Pasture (natural or planted)							
6. Agro forestry							
7. Silvipasture							
8. Fallow							
Other land categories:							
9. Shrubs							
10. Grassland							
11. Residential areas, infrastructure							
12. Wetland							
13. Other, specify:							
14. Total land							

2. What are the main forest types, users and products in the village?

Note: The purpose is to link forest types, users and products. See the Technical Guidelines for further elaboration.
Note: The total forest area should be the same as in the above table.

1.Type of forest (code- forest)	2.Ownership (code-tenure)	3.Approx. area (ha)	Main users[1] (max. 3)			Main products (max. 3) (code-product)		
			4.Rank 1	5.Rank2	6.Rank3	7.Rank1	8.Rank2	9.Rank3

[1]   By "main users" is meant those who have acquired the highest value of forest products (subsistence and cash) from a given forest type in the past 12 months.

Codes: Choose the most appropriate among the following groups (as some do overlap):
  1 = villagers that are members of FUG;
  2 = villagers not members of FUG;
  3 = subsistence oriented users in the village;
  4 = small-scale commercial users in the village;
  5 = large-scale commercial users in the village;
  6 = subsistence oriented users from outside the village;
  7 = small-scale commercial users from outside the village;
  8 = large-scale commercial users from outside the village;
  9 = other, specify:

3. Does the village practice any form of active and deliberate forest and tree management? (***Code[1]***)

Type of management	In CF	In non-CF forest
1. Planting of trees		
2. Cutting down undesired (competing) trees		

3. Protecting certain desired (patches of) trees in the forest to promote the natural regeneration of these species		
4. Protecting areas of forest for particular environmental services, like water catchment or erosion prevention/control		
5. Establishing clear use rights for a limited number of people to particular forest products (e.g., honey trees)		
9. Other, specify:		

1) Codes: 0=no, not at all; 1=yes, but only to a limited extent; 2=yes, they are common.

E. Forest resource base

Note: The questions should be asked in a village meeting or focus group for each of the categories in turn (i.e. column by column, and not row by row).

	1. Fire-wood or charcoal	2. Timber or other wood	3. Food from the forest	4. Medicine from the forest	5. Forage from the forest	6. Other[1]
1a. What is the most important product (MIP) for the livelihood of the people in the village (in this category)? [2] *(name)*						
1b. Where is the MIP harvested? *(% of total harvest)*						
a. The study CF (in Mustang CA)						
b. Other CFs (not in Gorkha, In Mustanf CA)						
c. National forest						
d. Private trees						
e. other, provide place and %						

	1.	2.	3.	4.	5.	6.
2. *(code-product)*						
3. How has availability of the MIP changed over the past 3 years? *Codes: 1=declined; 2=about the same; 3=increased*						
a. The study CF (in Mustang CA)						
b. Other CFs (not in Gorkha, In Mustanf CA)						
c. National forest						
d. Private trees						
e. other, provide place and %						
f. overall						

4. If the availability of the MIP in this category has **declined**, what are the reasons? *Please rank the most important reasons, max. 3 (leave rest blank).*	**Reason**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**
	1. Reduced forest area due to small-scale clearing for agriculture						
	2. Reduced forest area due to large-scale projects (plantations, new settlements, etc.)						
	3. Reduced forest area due to people from outside buying land and restricting access						
	4. Increased use of MIP due to more local (village) people collecting more						
	5. Increased use of MIP due to more people from other villages collecting more						

	Reason	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3
	6. Restrictions on use by central or state government (e.g., for forest conservation)						
	7. Local restrictions on forest use (e.g., community rules)						
	8. Climatic changes, e.g., drought and less rainfall						
	9. Other, specify:						
5. If the availability of the MIP in this category has **increased**, what are the reasons? *Please rank the most important reasons, max. 3.*	**Reason**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**
	1. Less clearing of forests for agriculture (incl. pastoralism)						
	2. Fewer local (village) people collecting less						
	3. Fewer people from other villages collecting less						
	4. Reduced use from large-scale commercial users/projects						
	5. Changes in management of forests						
	6. Climatic changes, e.g., more rainfall						
	9. Other, specify:						
6. What would be most important to increase the benefits (use or income) from the MIP? *Please rank the most important reasons, max. 3.*	**Action**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**	**Rank 1-3**
	1. Better access to the forest/MIP, i.e., more use rights to village						
	2. Better protection of forest/MIP (avoid overuse)						
	3. Better skills and knowledge on how to collect/use it						
	4. Better access to credit/capital and equipment/technology						
	5. Better access to markets and reduced price risk						
	9. Other, specify:						

1) Select the most important product for the village that does not fall into any of the other five categories.

2) "Most important" is defined as the most important for the wellbeing of the village, whether it be through direct use in the home, or through sale for cash, or both. MIP can range from a product group (such as firewood) to a single species (such as a very important species used for firewood).

G. Community Forest User Groups (CFUG) (Only Gorkha)

1. Existence of forest user groups (CFUG).
Note: See the Technical Guidelines for a definition.

1. How many new forest user groups (FUG) have been established in the village during the last 3 years?	

2. Information about each CFUG (use one column per CFUG).

	1. CFUG1	*2. CFUG2*	*3. CFUG3*
1. When was the group formed? *(yyyy)*			
2. How was the group formed? *Codes: 1=local initiative; 2=initiative from NGO; 3=initiative from government, e.g., Forest Department; 4=other, specify:*			

3.	Is the CFUG's main purpose related to the management of a particular forest area or of particular forest product(s)? *Codes: 1=area; 2=product(s); 3=both*			
4.	If for a product (code 2 or 3 above), what is the (main) product? *(code-product)*			
5.	How many members are there in the group?			
6.	Does the CFUG hold an annual General Assembly?			
7.	How many times per year does the CFUG have meetings, in addition to the GA?			
8.	Does the group have a written management plan?	*(1-0)*	*(1-0)*	*(1-0)*
9. What are the main tasks of the CFUG? *Select as many as appropriate: 1-0 code*	1. Setting rules for use	*(1-0)*	*(1-0)*	*(1-0)*
	2. Monitoring and policing	*(1-0)*	*(1-0)*	*(1-0)*
	3. Silviculture & management	*(1-0)*	*(1-0)*	*(1-0)*
	4. Harvesting forest products	*(1-0)*	*(1-0)*	*(1-0)*
	5. Selling forest products	*(1-0)*	*(1-0)*	*(1-0)*
	9. Other, specify:	*(1-0)*	*(1-0)*	*(1-0)*
10.	Has any development project been implemented in the village over the past 3 years using proceeds from the CFUG?	*(1-0)*	*(1-0)*	*(1-0)*
11.	Overall, on a scale from 1-5, how effective would you say that the CFUG is in ensuring sustainable forest use (1 is worst, 5 is best)?			
12.	Overall, on a scale from 1-5, how effective would you say that the CFUG is in ensuring equitable forest use (1 is worst, 5 is best)?			

Note: Any CFUGs in the village should be further discussed in the village narrative.

H Land sale *(maybe only possible to extract trend in land sales)*

1. How much land was sold in the village in the past?

	Land unit	Sold 2006-2011	Sold 2000-2005	Sold 1994-1999
a. Irrigated				
b. Non-irrigated				

2. How has the development in land prices been – provide price as Rs. for one unit of land?

	Land unit	Price 2006-2011	Price 2000-2005	Price 1994-1999
a. Irrigated				
b. Non-irrigated				

Village survey 2 (V2)

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Meeting with officials			
Village/focus group meetings			
Other interviews			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

B1. Risk

		1. Crises	2. Yes/No	3. Year	4. Nature of crisis, how many people/how large area affected
1.	Has the village faced any of the following crises over the past 7 years? *Codes: 0=no; 1=yes, moderate crisis; 2=yes, severe crisis*	1. Flood and/or excess rain			
		2. Drought			
		3. Wild fire (in crops/ forest/grasslands etc)			
		4. Widespread crop pest/disease and/or animal disease			
		5. Human epidemics (disease)			
		6. Political/civil unrest			

	7. Macro-economic crisis			
	8. Refugee or migration infusion			
	9. Other, specify:			

C. Wages and prices

			Male	**Female**
1. What was the typical daily wage rate for unskilled agricultural/casual adult **male/female** labour during the **peak/slack** season in this village over the past 12 months? *(rs/day)*		**Peak**	1.	2.
		Slack	3.	4.
2. What is the main staple food in the village? *(code-product)*				
3. What was the price of a kg of the main staple food during the past 12 months **before** and **after** the main agricultural harvest? *(rs/kg)*			**1. Before harvest**	**2. After harvest**

D1. Services

1. Has the village (as a community or individuals in the village) received any direct benefits (in kin or in cash) over the past 12 months? *Codes: 0=no; 1=yes, directly to households; 2=yes, directly to village (e.g., development project); 3=yes, both to household and village*			
2. If the village has received payment related to **forest services** (code 2 or 3 above for forest-related services only), please indicate the amount the village has received.	**Payments related to:**	**Amount**	
	1. Tourism		
	2. Carbon sequestration		
	3. Water catchment		
	4. Biodiversity conservation		
	5. Compensation from timber company		
	6. Compensation from mining company		
	9. Other, specify:		
3. Has the village (as a community or individuals in the village) received any external support (technical assistance, free inputs, etc.) from government, donors, NGOs) over the past 12 months?		*(1-0)*	
4. What type of input has the village received?			
5. What is the value of input described under 4.?		Rs.	

Note: If any such payment or assistance has been received it should be elaborated in the village narrative.

Annual household survey 1 (A1)

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Identification (bring pre-printed information, verify)

1. Identification and location of household.

1.	Household name and code	*(name)	(HID)
2.	Village name and code	*(name)	(VID)
3.	District name and code	*(name)	(DID)
4.	Name and PID (see B. below) of primary respondent	*(name)	(PID)
5.	Name and PID (see B. below) of secondary respondent	*(name)	(PID)
6.	GPS reference point of household (UTM format)		
7.	Distance of the household from the centre of village (in *minutes of walking* and in *km*)	1. min	2. Km

B. Household composition (pre-printed information, add new members, note deceased members)

1. Who are the members of the household?
Note: Recall the definition of households in the Technical Guidelines.

1. Personal Identification number (PID)	* Name of household member	2. Relation to household head[1]	3. Year born[2] *(yyyy)*	4. Sex *(0=male 1=female)*	5. Education *(number of years completed)*	6. Non-formal education *(number of years completed)*	7. Special skills[3]	8. Deceased *(mark by *)*
1		Household head = code 0						
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								

1) Codes: 1=spouse (legally married or cohabiting); 2=son/daughter; 3=son/daughter in law; 4=grandchild;
5=mother/father; 6=mother/father in law; 7=brother or sister; 8=brother/sister in law; 9=uncle/aunt; 10=nephew/niece;
11=step/foster child; 12=other family; 13=not related (e.g., servant).
2) One may ask about age, and the calculate 'year born' when entering data.
3) Codes: 1=shop/trade; 2=agric. processing; 3=handicraft; 4=carpentry; 5=other forest based; 6=other skilled labour;
7=transport (car, boat,...); 8=lodging/restaurant; 9=brewing; 10=brick making; 11=landlord/real estate;

12=herbalist/traditional healer/witch doctor; 13=quarrying; 14. Tailoring, 15. Mason, 19=other, specify:

2. We would like to ask some questions regarding the head of this household. *(Pre-printed information, verify)*

1.	What is the marital status of household head? *Codes: 1=married and living together; 2=married but spouse working away; 3=widow/widower; 4=divorced;; 5=never married; 9=other, specify:*	
2.	How long ago was this household formed (see definition of household)	*Years*
3.	Was the household head born in this village? If 'yes', go to 5.	*(1-0)*
4.	**If 'no':** how long has the household head lived in the village?	*Years*
5.	Does the household head belong to the largest ethnic group/caste in the village?	*(1-0)*
6.	What is the ethnic group/caste of the household?	
7.	What is the religion of the household?	

C. Land

1. Please indicate the amount of land that you currently own and have rented in/out.
Note: See definitions of land categories in the Technical Guidelines.

Category	1. Area	1 A. Unit of Area	2. Ownership *(code-tenure)*
Forest:			
1. Natural forest			
2. Managed forests			
3. Plantations			
Agricultural land:			
4. Cropland (Irrigated)			
5. Cropland (Non - Irrigated)			
6. Pasture (natural or planted)			
7. Agroforestry			
8. Silvipasture			
9. Fallow			
10. Other vegetation types/land uses (residential, bush, grassland, wetland, etc.)			
11. Total land owned (1+2+3+…+9)			
12. Land rented out (**included** in 1-9)			
13. Land rented in (**not included** in 1-9)			

D. Assets and savings

1. Please indicate the type of house you have?

	Fill in changes No change = 0	Pre-printed information
1. Do you have your own house? [1]		
2. What is the type of material of (most of) the walls? [2]		
3. What is the type of material of (most of) the roof? [3]		
4. How many m[2] approx. is the main house (excluding outer areas)?	*m[2]*	*m[2]*
5. What is the value of the house in its current state of repair?	*Rs.*	*Rs.*

1) Codes: 0=no; 1=own the house on their own; 2=own the house together with other household(s); 3=renting the house alone; 4=renting the house with other household(s); 9=other, specify:
2) Codes: 1=mud/soil; 2=wooden (boards, trunks); 3=iron (or other metal) sheets; 4=bricks or concrete; 5=reeds/straw/grass/fibers; 9=other, specify:
3) Codes: 1=thatch; 2=wooden (boards); 3=iron or other metal sheets; 4=tiles; 9=other, specify:

2. Please indicate the number and value of implements and other large household items that are owned by the household.
Note: see latest version of "PEN codes list" for a complete list of items and codes.

	1. No. of units owned	2. Total value (current sales value of all units, not purchasing price)
1. Car/truck		
2. Tractor		
3. Motorcycle		
4. Bicycle		
5. Handphone/phone		
6. TV		
7. Radio		
8. Cassette/CD/ VHS/VCD/DVD/ player		
9. Stove for cooking (gas or electric only)		
10. Refrigerator/freezer		
11. Fishing boat and boat engine		
12. Chainsaw		
13. Plough		
14. Scotch cart		
15. Shotgun/rifle		
16. Wooden cart or wheelbarrow		
17. Furniture		
18. Water pump		
19. Timber trees outside forests		
20. Fruit trees outside forest		
21. Fodder trees outside forest		
22. Bamboo clumps outside forest		
23. Biogas		
24. Copper vessels		
25. Solar panel		
26. Improved Chimney		
99. Others (worth more than approx. 50 USD purchasing price)		

3. Please indicate the savings and debt the household has.

1.	How much does the household have in savings in banks, credit associations or savings clubs?	*Rs.*
2.	How much does the household have in savings in non-productive assets such as gold and jewelry?	*Rs.*
3.	How much does the household have in outstanding debt?	*Rs.*
4.	How much cash does the household generally keep as a buffer?	*Rs.*

E. Forest resource base

1.	How far is it from the house/homestead to the edge of the nearest natural or managed forest that you use?	1. … measured in terms of distance (straight line)?	*Km*
		2. … measured in terms of time (in minutes of walking)?	*Min*
		3. Are you living in the same location as 3 years ago?	*(1-0)*
2.	Does your household collect firewood? *If 'no', go to 7.*		*(1-0)*
3.	**If 'yes'**: how many hours per week do the members of your household spend on collecting firewood for family use? (adult time should be reported; child time = 50 % of adult time)		*(hours)*
4.	Does your household now spend more or less time on getting firewood than you did 3 years ago? *Codes: 1=more; 2=about the same; 3=less*		
5.	How has availability of firewood changed over the past 3 years? *Codes: 1=declined; 2=about the same; 3=increased*		

If code '2' or '3', go to 7.		

6. **If declined** (code '1' on the question above), how has the household responded to the decline in the availability of firewood? *Please rank the most important responses, max 3.*	**Response**	**Rank 1-3**
	1. Increased collection time (e.g., from further away from house)	
	2. Planting of trees on private land	
	3. Increased use of agricultural residues as fuel	
	4. Buying (more) fuelwood and/or charcoal	
	5. Buying (more) commercial fuels (kerosene, gas or electricity)	
	6. Reduced the need for use of fuels, such as using improved stove	
	7. More conservative use of fuelwood for cooking and heating	
	8. Reduced number of cooked meals	
	10. Use of improved technology	
	11. Increased use of non-wood wild products (ex. reeds)	
	12. Restricting access/use to own forest	
	13. Conserving standing trees for future	
	14. Making charcoal	
	9. Other, specify:	

7. Has your household planted any woodlots or trees on farm over the past 3 years? *If 'no', go to next section.*		*(1-0)*

8. **If yes:** what are the main purpose(s) of the trees planted? *Please rank the most important purposes, max 3.*	**Purpose**	**Rank 1-3**
	1. Firewood for domestic use	
	2. Firewood for sale	
	3. Fodder for own use	
	4. Fodder for sale	
	5. Timber/poles for own use	
	6. Timber/poles for sale	
	7. Other domestic uses	
	8. Other products for sale	
	9. Carbon sequestration	
	10. Other environmental services	
	11. Land demarcation	
	19. Other, specify:	

9. Where do you harvest the following forest products? *(0-1)*	1. Study CF	2. Other CF	3. National forest	4. Private land	5. Other, specify
1. Firewood					
2. Timber or other wood					
3. Food from the forest					
4. Medicine from the forest					
5. Forage from the forest					
6. Other, specify					

F. Forest User Groups (FUG)

Note: The enumerator should first explain what is meant by a FUG, cf. the Technical Guidelines.

1. How many Forest User Groups (FUGs) are this household, via any of its members, members of ? *If 'zero', go to 14..*	
2. How many FUG committees are the household members of, if any?	
3. Does someone in your household normally/regularly attend general FUG meetings where all members may participate? *If 'no', go to 5.*	*(1-0)*
4. Who, in your household, normally attends general FUG meetings? *Codes: 1=only the wife; 2=both, but mainly the wife; 3=both husband and wife participate about equally; 4=both, but mainly the husband; 5=only the husband; 6=mainly son(s); 7=mainly daughter(s); 8=mainly husband & son(s); 10=mainly wife & daughter(s); 9=other arrangements not described above.*	
5. Does someone in your household normally/regularly participate in other than general FUG-meeting	*(1-0)*

	activities such as silvicultural work, fire line preparation/maintenance, patrolling, etc. *If 'no', go to 7.*		
6.	Who, in your household, normally participates in other than general FUG-meeting activities such as silvicultural work, fire line preparation/maintenance, patrolling, etc.? *Codes: 1=only the wife; 2=both, but mainly the wife; 3=both husband and wife participate about equally; 4=both, but mainly the husband; 5=only the husband; 6=mainly son(s); 7=mainly daughter(s); 8=mainly husband & son(s); 10=mainly wife & daughter(s); 9=other arrangements not described above.*		
7.	How many person days (= full working days) did the household members spend in total on FUG activities (meetings, policing/patrolling, joint work, etc) over the past 12 months?		*Days*
8.	Does your household make any cash payments/contributions to the FUG/FUGs? *If 'no', go to 10.*		*(1-0)*
9.	**If 'yes':** how much did you pay in total over the past 12 months? *(Rs)*		
10.	Did your household receive any cash payments from the FUG/FUGs (e.g., share of sales) in the past 12 months? *If 'no', go to 12.*		*(1-0)*
11.	**If 'yes':** how much did you receive in the past 12 months? *(Rs)*		

12. What are your reasons for joining the CFUG/FUGs? *Please rank the most important reasons, max 3.*	**Reason**	**Rank 1-3**
	1. Increased access to forest products	
	2. Better forest management and more benefits in future	
	3. Access to other benefits, e.g., government support or donor programmes	
	4. My duty to protect the forest for the community and the future	
	5. Being respected and regarded as a responsible person in village	
	6. Social aspect (meeting people, working together, fear of exclusion, etc.)|	
	7. Forced by Government/leaders/neighbours	
	8. Higher price for forest product	
	10. Better quality of forest product	
	9. Other, specify:	

13.	Overall, how would you say the existence of the *general* FUG has affected the benefits that your household gets from the forest? *Codes: 1=large negative net effect; 2=small negative net effect; 3=no net effect; 4=small positive net effect; 5=large positive net effect.*	

14. If your household doesn't participate in any FUG, why? *Please rank the most important reasons, max 3*	**Reason**	**Rank 1-3**
	1. No FUG exists in the village	
	2. I'm new in the village	
	3. FUG members generally belong to other group(s) (ethnic, political party, religion, age, etc.) than I do	
	4. Cannot afford to contribute the time	
	5. Cannot afford to contribute the required cash payment	
	6. FUG membership will restrict my use of the forest, and I want to use the forest as I need it	
	7. I don't believe FUGs are very effective in managing the forest	
	8. Lack of forest products available in CF/CFs	
	10. Not interested in the activities undertaken by existing FUGs	
	11. Corruption in FUG	
	12. Interested in joining but needs more information	
	13. FUG exists in village, but household is unaware of its presence	
	14. Forest authorities	
	15. Would like to but not allowed by FUG	
	9. Other, specify:	

G. Crisis and unexpected expenditures

1. When did the household face major income shortfalls or unexpectedly large expenditures since its establishment?

Event	Years of occurrence *(circle years with severe crises)*	How did you cope with the income loss or costs?[2]		
		Last 5 years	**From 6 to 10 years ago**	**From 11 to 15 years ago**
1. Serious crop failure				
2. Serious illness in family (productive age-group adult unable to work for more than one month during past 12 months, due to illness, or to taking care of ill person; or high medical costs)				
3. Death of productive age-group adult				
4. Land loss (expropriation, etc.)				
5. Major livestock loss (theft, drought, etc.)				
6. Other major asset loss (fire, theft, flood, etc.)				
7. Lost wage employment				
8. Wedding or other costly social events				
9. Other, specify:				
10. For the most severe crises, explain what happened, what were consequences for the household and what did you do to maintain/uphold your livelihood?	Coping activities (more than one code may apply)			

2) Codes coping:

1. Harvest more forest products
2. Harvest more wild products not in the forest
3. Harvest more agricultural products
4. Spend cash savings
5. Sell assets (land, livestock, etc.)
6. Do extra casual labour work
7. Assistance from friends and relatives
8. Assistance from NGO, community org., religious org. or similar
9. Get loan from money lender, credit association, bank etc.
10. Tried to reduce household spending
11. Did nothing in particular
12. Spent savings/retirement money
13. Reduced number of meals taken
14. Borrowed against future earnings
15. Sold food that would otherwise have been used for household consumption
16. rented out land
17. started a new business
18. changed to different type of livestock
19. Other, specify:
20. Harvested premature crops
21. changed cropping patterns or types of crops planted

H. Forest services not from the CFUG fund

1. Has the household received any cash or in kind payments related to the following forest services since survey started (2006 in Tibrekot, Mustang, Kankali or 2008 in Gorkha)?

Principal purpose	1. Years received	2. If yes, amounts (values) received when (rs/year) (if nothing, put '0')
1. Tourism		
2. Carbon projects		
3. Water catchments projects		
4. Biodiversity conservation		
5. Compensation from timber company		
6. Compensation from mining company		
7. Others, specify:		

I. Periodical activities

1. How often does the household:

Activity	Frequency of instances[1]	Duration of activity (one instance)
1. Maintain terraces on agricultural land		days
2. Maintain irrigation system		days
3. Maintain house		days
4. Maintain livestock barns, enclosures, pens, etc.		days
5. Provide vaccines for livestock		days
6.		days
7.		days

[1] Codes frequency: 1 = yearly, 2 = twice a year, 3 = trice a year, 4 = quarterly, 19 = other, specify

Annual household survey 2 (A2)

Task	Date(s)	By who?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Identification

1. Identification of the household.

1.	Household name and code	*(name)*	*(HID)*
2.	Village name and code	*(name)*	*(VID)*
3.	District name and code	*(name)*	*(DID)*
4.	Name and PID of primary respondent	*(name)*	*(PID)*
5.	Name and PID of secondary respondent	*(name)*	*(PID)*

B. Crisis and unexpected expenditures

1 Has the household faced any major income shortfalls or unexpectedly large expenditures during the past 9 months?

Event	1. How severe?[1]	How did you cope with the income loss or costs? *Rank max. 3[2]*		
		2. Rank1	**3. Rank2**	**4. Rank3**
1. Serious crop failure				
2. Serious illness in family (productive age-group adult unable to work for more than one month during past 12 months, due to illness, or to taking care of ill person; or high medical costs)				
3. Death of productive age-group adult				
4. Land loss (expropriation, etc.)				
5. Major livestock loss (theft, drought, etc.)				
6. Other major asset loss (fire, theft, flood, etc.)				
7. Lost wage employment				
8. Wedding or other costly social events				
9. Other, specify:				
10. For most severe crises, explain what happened, what were consequences for the household and what did you do to maintain your livelihood? *(text)*				

1) Codes severity: 0=no crisis; 1=yes, moderate crisis; 2=yes, severe crisis. See Technical Guidelines for definitions.
2) Codes coping:

1. *Harvest more forest products*
2. *Harvest more wild products not in the forest*
3. *Harvest more agricultural products*
4. *Spend cash savings*
5. *Sell assets (land, livestock, etc.)*
6. *Do extra casual labour work*
7. *Assistance from friends and relatives*
8. *Assistance from NGO, community org., religious org. or similar*
9. *Get loan from money lender, credit association, bank etc.*
10. *Tried to reduce household spending*
11. *Did nothing in particular*
12. *Spent savings/retirement money*
13. *Reduced number of meals taken*
14. *Borrowed against future earnings*
15. *Sold food that would otherwise have been used for household consumption*

16. rented out land
17. started a new business
18. changed to different type of livestock
20. Harvested premature crops

21. changed cropping patterns or types of crops planted
19 0ther, specify:

C. Forest services not from the CFUG fund

1. Has the household over the past 9 months (since first visit of this year's survey) received any cash or in kind payments related to the following forest services?

Principal purpose	1. Have received? *(1-0)*	2. If yes, amounts (values) received (R*s)* *(if nothing, put '0')*
1. Tourism		
2. Carbon projects		
3. Water catchments projects		
4. Biodiversity conservation		
5. Compensation from timber company		
6. Compensation from mining company		
7. Others, specify:		

D. Forest clearing

1. Did the household clear any forest during the past 12 months? *If 'no', go to 9.*					*(1-0)*
If YES:	2. How much forest was cleared?				*ha*
	3. What was the cleared forest (land) used for? *Codes: 1=cropping; 2=tree plantation; 3=pasture; 4=non-agric uses (Rank max 3)*	1.Rank1	2.Rank2	3.Rank3	
	4. If used for crops (code '1' in question above), which principal crop was grown? *(code-product) Rank max 3*	1.Rank1	2.Rank2	3.Rank3	
	5. What type of forest did you clear? *(code-forest)*				
	6. If secondary forest, what was the age of the forest?				*years*
	7. What was the ownership status of the forest cleared? *(code tenure)*				
	8. How far from the house was the forest cleared located?				*km*
9. Has the household over the last *3* years cleared forest? *If 'no', go to 11.*					*1-0*
10. **If 'yes':** how much forest (approx.) has been cleared over the last 3 years? *Note: This should include the area reported in question 2.*					*ha*
11. How much land used by the household has over the last 3 years been abandoned (left to convert to natural re-vegetation)?					*ha*

E. Welfare perceptions and social capital

1. All things considered, how satisfied are you with your life over the past 12 months? *Codes: 1=very unsatisfied; 2=unsatisfied; 3=neither unsatisfied or satisfied; 4=satisfied; 5=very satisfied*	
2. Has the household's food production and income over the past 12 months been sufficient to cover what you consider to be the needs of the household? *Codes: 1=no; 2=reasonable (just about sufficient); 3=yes*	
3. Compared with other households in the village (or community), how well-off is your household? *Codes: 1=worse-off; 2=about average; 3=better-off*	

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4.	How well-off is your household today compared with the situation **3 years ago?** *Codes: 1=less well-off now; 2=about the same; 3=better off now* *If 1 or 3, go to 5. If 2, go to 6.*		
5.	**If worse-** *or* **better-off:** what is the main reason for the change? *Put as open question, enumerator identifies ranksPlease rank the most important responses, max 3.*	**Reason: Change in …**	**Rank 1-3**
		1. Of farm employment	
		2. Land holding (e.g., bought/sold land)	
		3. Forest resources	
		4. output prices (forest, agric,…)	
		5. outside support (govt., NGO...)	
		6. remittances	
		7. cost of living (e.g., high inflation)	
		8. war, civil strife, unrest	
		9. conflicts in village (non-violent)	
		10. change in family situation (e.g. loss of family member/a major bread-winner)	
		11. illness	
		12. access (e.g. new road…)	
		13.Increase of Decrease in Productive land 9(For agriculture)	
		14.Awareness in Religion/ Culture (Change in Religion)	
		15.Starting of New business/ business not running properly/ Failure of business	
		16.Increase or Decrease in Livestock	
		17. Make or lose Infrastructure like house	
		18.Addition of New rules and regulation	
		20. Increase in Knowledge or Education	
		21. Active involvement in Business	
		22. Political stability	
		23. Destruction in agricultural crop, Decrease in production by grazing	
		24. Change in alcohol drinking habit (Left or start)	
		25. Change or diversification in Natural resources	
		26. Started to work freely	
		27. Separate more time for work, hard labor	
		28.Involvement in Co-operate	
		29. Migration due to family work	
		30. Destruction by fire	
		31. Change in current employement	
		19. other (specify):	
6.	Do you consider your village (community) to be a good place to live? *Codes: 1=no; 2=partly; 3=yes*		
7.	Do you **in general** trust people in the village (community)? *Codes: 1=no; 2=partly, trust some and not others; 3=yes*		
8.	Can you get help from other people in the village (community) if you are in need, for example, if you need extra money because someone in your family is sick? *Codes: 1=no; 2= can sometimes get help, but not always; 3=yes*		

F. Enumerator/researcher assessment of the household

*Note: This is to be completed by the enumerator and/or the PEN partner. If the enumerator doing the A2 (and Q4) is **not** the one who has been doing previous quarterly surveys, those who have had the most exposure to the household should fill in questions 2-5.*

1.	During the last interview, did the respondent smile or laugh? *Codes: (1) neither laughed nor smiled (somber); (2) only smiled; (3) smiled and laughed; (4) laughed openly and frequently.*	
2.	Based on your impression and what you have seen (house, assets, etc.), how well-off do you consider this household to be compared with other households in the village? *Codes: 1=worse-off; 2=about average; 3=better-off*	

3. How reliable is the information **generally** provided by this household? *Codes: 1=poor; 2=reasonably reliable; 3=very reliable*	
4. How reliable is the information on **forest collection/use** provided by this household? *Codes: 1=poor; 2=reasonably reliable; 3=very reliable*	
5. If the forest information is not so reliable (code 1 above), do you think the information provided overestimate or underestimate the actual forest use? *Codes: 1=underestimate; 2=overestimate; 3= no systematic over- or underestimation; 4=don't know.*	

Quarterly household surveys (Q1-Q4)

Note: All incomes are asked for the past month (past 30 days), except for the last sections on crops, livestock and other income sources where the recall period is 3 months.
Note: The researcher should list the most common products in the various tables, based on RRAs and pre-testing of the questionnaire. After asking about these pre-listed products, the enumerator should ask if there are any other products not mentioned that the household has harvested/collected over the past 1 (3) month(s).

Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Identification

1. Identification of the household.

1.	Household name and code	*(name)	(HID)
2.	Village name and code	*(name)	(VID)
3.	District name and code	*(name)	(DID)
4.	Name and PID of primary respondent	*(name)	(PID)
5.	Name and PID of secondary respondent	*(name)	(PID)

B. Direct forest income (income from unprocessed forest products)

1. What are the quantities and values of raw-material forest products the members of your household collected for both own use and sale over **the past month**?
Note: Income from plantations is defined as forest income, while agroforestry income is categorized as agric. income (H).
Note: The quantities of unprocessed forest products used as inputs in making processed forest products should only be reported in section C, table 2, and not in the table below.

1. Forest product *(code-product)*	2. Collected by whom? [1]	Collected where?		5. Quantity collected (7+8)	6. Unit	7. Own use (incl. gifts given and received)	8. Sold (incl. barter)	9. Price per unit Rs.	10. Type of market *(code-market)*	11. Gross value (5*9), Rs.	12. Transport/ marketing costs (total), Rs.	13. Purch. inputs & hired labour, Rs.	14. Net income, Rs. (11-12-13)
		3. Land type *(code-land)*	4. Ownership *(code-tenure)*										

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.
Note: Answers in columns 3 and 4 should be consistent with land categories reported in village questionnaire (V1D01) and in the annual household questionnaire (A1C).

2. What are the quantities and values of raw-material forest products the members of your household collected for both own use and sale over **the past three months**?

Note: Income from significant sources of income that are likely to be missed using one month recall period. Use pre-defined product list from RRA and A1.
Note: Income from plantations is defined as forest income, while agroforestry income is categorized as agric. income (H).
Note: The quantities of unprocessed forest products used as inputs in making processed forest products should only be reported in section C, table 2, and not in the table below.
Note: a given product should be included in either B0 or B1 (not in both tables).

1. Forest product *(code-product)*	2. Collected by whom? [1]	Collected where?		5. Quantity collected (7+8)	6. Unit	7. Own use (incl. gifts given and received)	8. Sold (incl. barter)	9. Price per unit	10. Type of market *(code-market)*	11. Gross value (5*9)	12. Transport/ marketing costs (total)	13. Purch. inputs & hired labour	14. Net income (11-12-13)
		3. Land type *(code-land)*	4. Ownership *(code-tenure)*										

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.
Note: Answers in columns 3 and 4 should be consistent with land categories reported in village questionnaire (V1D01) and in the annual household questionnaire (A1C).

C. Forest-derived income (income from processed forest products)

1. What are the quantities and values of processed forest products that the members of your household produced during **the past month?**

1. Product *(code-product)*	2. Who in the household did the work? [1]	3. Quantity produced (5+6)	4. Unit	5. Own use (incl. gifts)	6. Sold (incl. barter)	7. Price per unit	8. Type of market *(code-market)*	9. Gross value (3*7)	10. Purchased inputs & hired labour	11. Transport/ marketing costs	12. Net income excl. costs of forest inputs (9-10-11)

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.

2. What are the quantities and values of *unprocessed* forest products used as inputs (raw material) to produce the *processed* forest products in the table above?
*Note: Avoid double counting with section B: only products used an inputs are recorded in the table below, and these quantities should **not** be included in what is recorded in section B.*

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1. Processed (final) products *(code-product)*	2. Unprocessed forest product used as input *(code-product)*	3. Quantity used (5+6)	4. Unit	5. Quantity purchased	6. Quantity collected by household	Collected where?		9. Who in the household collected the forest product?[1])	10. Price per unit	11. Value (3*10)
						7. Land type *(code-land)*	8. Owner-ship *(code-tenure)*			

1) Codes as in the table above.
Note: The products in column 1 should be exactly the same as those in column 1 in the table above.
Note: Columns 7,8,9 should be left blank if no collection by household. Column 10 (price) should be asked even if only from collection, but if not available, see the Technical Guidelines on valuation.
Note: Answers in columns 7 and 8 should be consistent with land categories reported in village questionnaire (V1D01) and in the annual household questionnaire (A1C).

D. Fishing and aquaculture

1. How much fish did your household catch **exclusively from the wild** (rivers, lake, sea) during **the past month**?

1.Type of fish (list local names)*	Collected where?		4. Total catch (kg) (5+6)	5. Own use (incl. gifts)	6. Sold (incl. barter)	7. Price per kg	8. Gross value (4*7)	9. Costs (inputs, hired labour, marketing)	10. Net income (8-9)
	2. Land type *(code-land)*	3. Owner-ship *(code-tenure)*							

Note: Answers in columns 2 and 3 should be consistent with land categories reported in the village questionnaire (V1D01) and in the annual household questionnaire (A1C).

2. How much fish did your household catch **from ponds (aquaculture)** in **the past month**?

1. Type of fish (list local names)*	2. From where? [1])	3. Total catch (kg) (4+5)	4. Own use (incl. gifts)	5. Sold (incl. barter)	6. Price per kg	7. Gross value (3*6)	8. Costs (inputs, hired labour, marketing, etc.)	9. Net income (7-8)

1) Codes: 1=Pond owned by households; 2=Pond owned by group of which household is a member; 3=Pond owned by community/village; 4=Pond owned by others and persons can buy fishing rights (include costs in column 7); 9=Other, specify:

E. Non-forest environmental income

1. In addition to forest products and fish included in the previous tables, how much of **other wild products** (e.g., from grasslands, fallows, etc.) did your household collect **in the past month**?

1. Type of product *(code-product)*	2. Collected by whom?[1]	Collected where?		5. Quantity collected (7+8)	6. Unit	7. Own use (incl. gifts)	8. Sold (incl. barter)	9. Price per unit	10. Type of market *(code-market)*	11. Gross value (5*9)	12. Transport/ marketing costs (total)	13. Purch. Inputs, hired laboour	14. Net income (11-12-13)
		3. Land type *(code-land)*	4. Owner ship *(code-tenure)*										

Note: Answers in columns 2 and 3 should be consistent with land categories reported in the village questionnaire (V1D01) and in the annual household questionnaire (A1C).

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.

2. In addition to forest products and fish included in the previous tables, how much of **other wild products** (i.e. non-cultivated products from grasslands, fallows, etc.) did your household collect **in the past three months**?
Note: Income from significant sources of income that are likely to be missed using one month recall period. Use pre-defined product list from RRA and A1.
Note: a given product should be recorded in either E0 or E1 (not in both tables)

1. Type of product *(code-product)*	2. Collected by whom?[1]	Collected where?		5. Quantity collected (7+8)	6. Unit	7. Own use (incl. gifts)	8. Sold (incl. barter)	9. Price per unit	10. Type of market *(code-market)*	11. Gross value (5*9)	12. Transport/ marketing costs (total)	13. Purch. inputs & hired labour	14. Net income (11-12-13)
		3. Land type *(code-land)*	4. Owner ship *(code-tenure)*										

Note: Answers in columns 2 and 3 should be consistent with land categories reported in the village questionnaire (V1D01) and in the annual household questionnaire (A1C).

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.

F. Wage income

1. Has any member of the household had paid work over **the past three months**?

Note: One person can be listed more than once for different jobs.

*Note: If a person has worked but not yet received payment, the **expected** income is recorded in column 5 while the **actually received** income is recorded in column 6. In cases of pre-payment and/or late payment for work, the actual days worked, the negotiated daily wage rate and the actual amount received are recorded in columns 3, 4 and 6, respectively.*

1. Household member (PID)	2. Type of work *(code-work)*	3. Days worked past 3 months	4. Daily wage rate	5. Total (expected) wage income (3*4)	6. Total wage income actually received

G. Income from own business (not forest or agriculture)

1. Are you involved in any types of business, and if so, what are the gross income and costs related to that business over **the past 3 months?**

Note: If the household is involved in several different types of business, you should fill in one column for each business.

	1. Business 1	2. Business 2	3. Business 3
1. What is your type of business?[1]			
2. Gross income (sales)			
Costs:			
3. Purchased inputs			
4. Own non-labour inputs (equivalent market value)			
5. Hired labour			
6. Transport and marketing cost			
7. Other costs			
8. Net income (2 - items 3-7)			
9. Capital costs (investment, repair, maintenance, etc.)			
10. Current value of total capital stock			

1) Codes: 1=shop/trade; 2=agric. processing; 3=handicraft; 4=carpentry; 5=other forest based; 6=other skilled labour; 7=transport (car, boat,…); 8=lodging/restaurant; 9=brewing; 10=brick making; 11=landlord/real estate; 12=herbalist/traditional healer/witch doctor; 13=quarrying; 14= tailoring; 15= mason; 19=other, specify:

H. Income from agriculture – crops

1. What are the quantities, uses and values of crops that household **has harvested** during **the past 3 months**?

Note: only include crops that were harvested during the past three months. Use of stored crops is booked in table 1a.

Note: remember to probe for and include small quantities of crops that are continuously harvested for subsistence uses.

1. Crops *(code-product)* *(Pre-print crop types for site)*	2a. Area unit	2. Area of production *(no. of area units)*	3. Total production (5+6+9)	4. Unit (for production)	5.Own use (incl. gifts received and given)	6. Sold (incl. barter)	7. Price per unit	8.Total value ((5+6)*7)	9. To stock

1a. What are the quantities and values of **stored** crops that household **has used** (consumed or sold) during **the past 3 months**?

1. Crops (code-product)	2. Unit (for storage)	3. Opening stock (3 months ago)	4.Own use (incl. gifts)	5. Sold (incl. barter)	6. Price per unit	7.Total value ((4+5)*6)	8. To stock (from H1/9)	9. Stock now (3-4-5+8)

2. What are the quantities and values of inputs used in crop production over **the past 3 months** (this refers to agricultural cash expenditures)?

Note: Take into account all the crops in the previous table.

Note: See codes-list (section 3.2) for additional codes.

1. Inputs	2. Quantity	3. Unit (can be e.g. bottle, pack)	4. Price per unit	5. Total costs (2*4)
1. Seeds				
2. Fertilizers				
3. Pesticides/herbicides				
4. Manure				
5. Draught power				
6. Hired labour				
7. Hired machinery				
8. Transport/marketing				
10.Payment for land rental_____				
9. Other, specify:_____				

I. Income from livestock

1. What is the number of ADULT larger animals your household has now, and how many have you sold, bought, slaughtered or lost during **the past 3 months**?

Note: Only include larger valuable animals; smaller animals are included in table 1a.

Note: See codes-list (section 3.3) for additional codes.

1. Livestock	2. Beginning number (3 months ago)	3.Sold (incl. barter), live or slaught-ered	4.Slaught-ered for own use (or gift given)	5. Lost (theft, died,…)	6. Bought or gift received	7. New from own stock	8. End number (now) (2-3-4-5+6+7) *(bring this figure next quarter)*	9. Total value of livestock type (all animals)
1. Cow								
2. Ox								
3. She-Buffalo								
4. He-buffalo								
5. He-Goat								
6. She-Goat								
7. Sheep								
8. Pig								
9. Swine								
10. Donkey								
11. Mule								
17. Horse								
20. Wild bore								
21. Beehive								
19Others,								

Specfy									

1a. What is the number of ADULT smaller animals your household has **sold or consumed** during **the past month**?
Note: See codes-list (section 3.3) for additional codes.

1. Livestock	2.Sold (incl. barter), live or slaughtered	3.Slaught-ered for own use (or gift given)	4. Total price of sold animals	5. Total value of consumed animals
7. Ducks				
8. Chicken				
10. Guinea pigs				
11. Rabbit				
12. Turkey				
13. Guinea Fowl				
19. Other, specify:				

2. What are the quantities and values of animal products and services that you have produced during **the past 3 months**?

1. Product/service	2. Production (4+5)	3. Unit	4. Own use (incl. gifts)	5. Sold (incl. barter)	6. Price per unit	7. Total value (2*6)
1. Meat [1]						
2. Milk [2]						
3. Butter						
4. Cheese						
5. Ghee						
6. Eggs						
7. Hides and skin						
8. Wool						
9. Manure						
10. Draught power						
11. Bee hives						
12. Honey						
13. Curdled milk						
14. Soap						
15. Whole animal: _____						
16. Whole animal: _____						
17. Whole animal: _____						
19. Other, specify						

1) Make sure this corresponds with the above table on sale and consumption of animals.
2) Only milk consumed or sold should be included. If used for making, for example, cheese it should not be reported (only the amount and value of cheese).

3. What are the quantities and values of inputs used in livestock production during **the past 3 months** (cash expenditures)?
Note: The key is to get total costs, rather than input units.

1. Inputs	2. Unit	3. Quantity	4. Price per unit	5. Total costs (3*4)
1. Feed/fodder				
2. Rental of grazing land				
3. Medicines, vaccination and other veterinary services				
4. Costs of maintaining barns, enclosures, pens, etc.				
5. Hired labour				
6. Inputs from own farm				
9. Other, specify:				

Sources of fodder *(sums to 100%)*				Type of feeding (sums to 100%)	
1. Agriculture	2. Forest	3. Grass land	4. Other land	5. Browse and graze	6. Stall feeding
%	%	%	%	%	%

J. Other income sources

1. Please list any other income that the household has received during **the past 3 months**.

1. Type of income	2. Total amount received past 3 months
1. Remittances	
2. Support from government, NGO, organization or similar	
3. Gifts/support from friends and relatives (large quantities)	
4. Pension	
5. Payment for forest services	
6. Payment for renting out land (if in kind, state the equivalent in cash)	
7. Compensation from logging or mining company (or similar)	
8. Payments from FUG	
9. Monthly salary	
10. Other, specify:	

K. Expenditures

1. Please list household cash expenditures during the past month for the following types of frequent expenditures (that are not reported to questions above)	2. Total amount spent past 1 month
1. Food items	
2. Fuels (oil, kerosene, cylinder gas)	
3. Clothes and personal care (toothpaste, soap, etc.)	
4. Transport	
5. Modern medicines	
6. Traditional medicines	
7. Entertainment	
8. Firewood	
9. Timber	
10. Sand	
11. Stones	
12. Soil (leveling land)	
13. Electricity, water, telephone	
14. Cell phone	
15. Cigarettes, pan etc.	
16. Tea, snacks, alcohol	
17.	
18. Other, specify:	
2. Please list household cash expenditures during the past 3 months for the following types of infrequent expenditures (that are not reported to questions above)	4. Total amount spent past 3 months
19. Taxes	
20. School fees	
21. Legal expenses and insurance	
22. Home improvement	
23. social work (festival)	
24. Loan installment	
25.	
26.	
27.	

Attrition (drop out) and temporary absence survey (ATA)

Control information

Task	Date(s)	By whom?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

A. Identification

1. Identification and location of household.

1. Household name and code	*(name)*	(HID)
2. Village name and code	*(name)*	*(VID)*
3. District name and code	*(name)*	*(DID)*
4. Who did you interview[1]		
5. Has the household left the PEN survey temporarily (one quarterly survey only) or permanently (remaining surveys)?		*(1=temporary; 2=permanently; 3=don't know yet)[2]*
6. For households that have left the village permanently, contact information (location, telephone, other)		

1) Codes: 1 = member(s) of the household; 2 = neighbours; 3 = relatives; 4 = village headman/leader/officials; 9=others, specify: _____
2) Code 3 should only be used temporary; use 1 or 2 in final dataset.

B. Reasons for dropping out

1. What is the reason for the household to drop out of the PEN survey this quarter?	Reason	0-1 (quest. 1) or code
	1. Moved/migrated permanently	
	2. Temporarily away from village (work, visit, …)	
	3. Divorce	
	4. (Re) married	
	5. Death	
	6. Illness	
	7. Child birth	
	8. Refuse because too busy	
	9. Refuse because don't want to reveal household information	
	10. Refuse because tired of answering the questionnaire	
	11. Could not locate the household	
	19. Other	
2. If moved/migrated (response 1), to where? *Codes: 1=within village; 2=neighbouring village; 3=to village further away (another rural area); 4=to nearest town; 5=to major town further away; 9=other:_____*		
3. If moved/migrated from village, what was the reason for leaving? *Codes: 1=work or look for work; 2= (government) service, incl. army; 3=study; 4=follow or move (closer) to spouse/family; 5=marriage; 6=separation/divorce; 7= utilize inheritance; 8= seek medical treatment; 9=conflicts in present village; 19=other, _____*		
4. If the respondent died (response 5), give PID number:		
5. If the respondent died, what was the reason? *Codes: 1=illness; 2=old age; 3=accident; 4=violence; 5=suicide; 9=other:_____*		

Appendix B4 List of codes

This document contains the codes used in the Microsoft Access databases containing the total household accounts, including environmental income, from the four research sites in Nepal (Mustang, Kaski, Gorkha, Chitwan) and the three survey rounds (2006, 2008/9, 2012). The document is based on the PEN code list and includes the PEN categorization of codes, the relevant PEN codes and additional codes added only in Nepal. **Non-PEN codes are marked with *italics***. The PEN codebook is much more comprehensive than what is presented here; many specific product codes of no relevance to the Nepalese data are omitted whereas some categories not relevant for Nepal are included so as to provide the general idea of the coding system. Some codes are specified in the questionnaires, these are not included here.

1   General introduction to the coding system

Several questions are *1-0* questions, where **1 = yes** and **0 = no**

Some questions may not apply or the respondent simply cannot answer. The following codes are used for that:
- 8 = **does not apply**
- 9 = the respondent (or I) **does not know**
Note the **minus (-)** to be put in front. This is done to clearly distinguish between these answers (-8, -9) and any regular answer.

Where sexes are distinguished female = 1 and male = 0.

All years are written with 4 digits, i.e., **yyyy**. All dates should be written in the year-month-date format, i.e.: **yyyymmdd**

The code **999** can also be used for "other" in all the code lists below, although one would like to keep this to an absolute minimum. Instead, new codes should be suggested.

2   Common codes used in prototype questionnaire

2.1   Products (code-product)

This code list covers all products for which data are being collected. Thus it includes forest products (raw and processed), agricultural products, and products collected from non-forest areas (labelled "non-forest environmental income" in the questionnaire).

One important distinction is made between unprocessed (raw-material) forest products and processed forest products. "Processed" means a significant modification or change of the product, e.g., turning wood into charcoal or a chair, or turning clay into a pot. Minor modifications, for example, cutting rattan canes or bark into smaller pieces, or washing and drying the product would not qualify, and the products should still be classified as unprocessed.

Note that codes from the agricultural products code list (201-) can be used for products collected from the forest. For example, a wild fruit can be classified under the general code for wild fruits (21) or as that particular fruit, e.g., durian (315).

Overview of product codes (*the additional Nepal codes may not follow this system*):

1. Harvested products from the wild (incl. forests) – in the raw	**1-100, ++**
i. Wooden perennials and wooden-based products	1-20, **651-750, 901-1000, 1151-1200,1401-1500**
ii. Non-wooden plants and plant-based products	21-50, **551-599, 751-900;1351-1400**
iii. Animals and animal-based products	51-70, **601-650, 1001-1100**
iv. Minerals and others	71-100
2. Processed products from the wild (incl. forests)	**101-200**
i. Wooden-based products	101-130, **1301-1350**
ii. Non-wooden based products	131-200
3. Agricultural crops	**201-550**
Cereals	201-220
Roots and tubers	221-240
Legumes	241-270
Vegetables	271-310, **1101-1150**
Fruits	311-350, **501-550, 1201-1250**
Beverages	351-360
Spices	361-380
Other food crops	381-400
Non-food crops or non-food parts of crops	401-420, **1251-1300**
Miscellaneous & unclassified	421-500

Product	Code	Comment
1. Harvested products from the wild (incl. forests) – in the raw	**(1-100)**	
i. Wooden perennials and wooden-based products	**(1-20)**	
Timber	1	Including trees cut for charcoal production
Poles	2	
Fuelwood/firewood	3	
Tree barks	4	
Tree leaves	5	
Tree roots	6	
Lianas and vines	7	
Rattan	8	
Bamboo	9	
Frond	10	Leaves of palms, This code is given to "Wooden stick" in the reference table of 2006 and 2009 dataset
Tree branches	11	This code is assigned to "rope" in the reference table of 2006 and 2009 dataset.
Logs	12	Can also be classified in the broader category of timber ("logs" often refer to short pieces of timber)
Tree seedlings	13	
Fence posts	14	
Brooms	15	Unprocessed
Leaf for food	16	
Leaf for medicinal purpose	17	
Root for medicinal purpose	18	
Bark for medicinal purpose	19	
Timba/ Lumber	*1401*	
Green fuelwood	*1402*	Used to distinguish from dry fuelwood
Fuelwood twigs	*1403*	
Nigalo	*1404*	Very thin small sized bamboo, wild or planted
Bhatta	*1405*	Thin /small rafter
Syaula	*1406*	Tree leaves used for thatching
Ghochha	*1407*	Thick /big rafter
Sottar	*1408*	Forest litter
ii. Non-wooden plants and plant-based products	**(21-50, 1351-1355)**	
Wild fruits	21	
Nuts	22	
Mushroom	23	
Roots and tubers	24	Tree roots are included above (code 6)
Wild vegetables	25	This code is given to product type "grass" in the reference table of 2006 and 2009 dataset.
Seeds	26	
Medicinal plants	27	All (parts of) plants used for medicinal purposes

Product	Code	Comment
		should be put here, e.g., a tree root or mushroom used for medicinal purposes (don't use categories above).
Ornamental/aesthetic/fashion	28	
Latex and resin	29	
Oils	30	
Dyes	31	
Non-animal manure/compost from liter	32	
Fodder grass/livestock browse	33	
Thatching grass	34	
Other grasses	35	E.g., for basket making
Reeds	36	
Spices	37	
Stalks	38	E.g., from millet
Banana fibres	39	
Banana leaves	40	
Wild yam	41	
Wild coffee	42	
Wild coffee seedlings	43	
"Cabbage palm"	44	
Brazil nut	45	
Rubber	46	
Natural straw	47	
Roasting sticks	48	
Mate	49	
Allanblackia paviflora	1351	
Elephant mushroom	1352	
Gaira Kasta	1353	NTFPs other than MAPs
Niuro	1354	Edible fern
Flowers	1355	General term
iii. Animals and animal-based products	**(51-70)**	
Game meat – mammals	51	
Game meet-reptiles	52	
Game meat-reptiles	53	
Game meat-insects and worms	54	
Birds nests	55	
Fish	56	
Animal skin	57	
Animal based medicine	58	
Honey	59	
Game meat-amphibian	60	
Animal manure	61	
Wild animals	62	
Jerky	64	
iv. Minerals and others	**(71-100)**	
Gold	71	

Product	Code	Comment
Diamonds	72	
Quarry stones	73	
Clay/mud	74	
Slate	75	
Sand	76	
Tooth cleaning twigs	77	
Stones	78	
Potash	79	
Salt	80	
2. Processed products from the wild (incl. forests)	**(101-200)**	
i. Wooden-based products	**(101-130, 1301-**1303)	
Sawnwood	101	
Charcoal	102	
Wooden furniture	103	
Other wooden tools/utensils	104	
Woodcraft	105	
Rattan furniture	106	
Other rattan products	107	
Bamboo furniture	108	
Other bamboo products	109	
Canoe	110	
Drums	111	
Other musical instruments	112	
Walking sticks	113	
Offcuts	114	
Rubber Shoes	115	
Shingles	116	
Thurong	117	
Kharang	118	
Lai	119	
Toloi	120	
Kula	121	
Dala	122	
Chaloin	123	
Birdcage	124	
Process wild vegetables (dried/fermented)	130	
Mortar	1301	
Pestle	1302	
Halo	1303	A plough set
ii. Non-wooden based products	**(131-200, 571, 572, 1304)**	
Woven products	131	
Juice and oils from forest products	132	

Product	Code	Comment
Alcoholic beverages	133	
Pottery	134	
Bricks	135	
136	Roasted cashew	
137	Fly swatter	
138	Fishing trap/net	
139	Catapult	
Broom	140	
Basket	141	
Roof of house	142	
Floor of house	143	
House	144	
Storage shed	145	
Veranda of house	146	
Wall of house	147	
Clothes	148	
Babassu kernels	149	
Babassu charcoal	150	
Babassu husks	151	
Babassu starch	152	
Babassu oil	153	
Babassu milk	154	
Amapá milk	155	
Açaí wine	156	
Miriti wine	157	
Miriti stems	158	
Toys made with miriti	159	
Fishing trap	160	
Ungurahuy, majo milk	164	
Açaí milk	165	
Açaí (canned)	168	
Bacaba wine	169	
Cupuaçu pulp	170	
Mauritia scraped fruit	171	
Andiroba seeds	172	
Red horse eye bean	173	
Caxinguba bark	174	
Veronica bark	175	
Succuba bark	176	
Andiroba bark	177	
Mauritia sticks	178	
Mauritia crafts (except toys)	179	
Sororoca stem	180	
Chitro	182	Bamboo woven mat (roofing purpose)
Bhakari/Mandro	183	Storage bin made by bamboo strips
Thumse	184	Conical basket finely woven by bamboo strips
Doko	185	Conical basket woven of bamboo strips
Tapari	186	Leaf plate

Product	Code	Comment
Ghum (Syakhu)	187	Traditional umbrella made up of cane, leaf and bamboo
Damlo/Namlo	188	Fibre rope used for carrying load
Andiroba oil	571	
Copaíba oil	572	
Leaf plates	1304	
3. Agricultural crops	**(201-)**	
Cereals	**(201-220)**	
Rice	201	
Maize	202	
Wheat	203	
Barley	204	
Millet	205	
Sorghum	206	
Simsim	207	
Teff	208	
Buck wheat	209	
Naked barley	210	
Amaranthus	211	
Fresh maize	212	
Dry maize	213	
Oat	214	
Rice (lowland)	215	
Roots and tubers	**(221-240)**	
Cassava/manioc (fresh)	221	
Potato	222	
Sweet potato	223	
Yam	224	
Cocoyam/taro	225	
Cassava/manioc (dried	226	
Cassava/manioc (flour)	227	
Angel's wing	228	
Wild taro (?)	229	
Malanga	230	
Tapioca	231	
Curcuma	232	
Turmeric	233	
Souchet	234	
Legumes	**(241-270)**	
Soybean	241	
Mung bean	242	
Stink bean	243	
Pigeon pea	244	
Cow pea	245	
Grams	246	
Groundnut (peanut)	247	
Bean (Mustang)	248	
String bean	249	

Product	Code	Comment
Red bean	250	
Field beans (fresh)	251	
Field beans (dried)	252	
Sesame	253	
Beans	254	
Enkole	255	
Legumes (general code)	256	
Fava bean, broad-bean	257	
Pueraria groundcover	258	
Bambara groundnut	259	
Peas	260	
Leaves of green beans	261	
Mung	262	
Chick Pea	263	
Vegetables	**(271-310, 1101-1150**	
Cabbage	271	
Carrot	272	
Cauliflower	273	
Chilli	274	
Cucumber	275	
Eggplant	276	
Garlic	277	
Ginger	278	
Lettuce	279	
Onion	280	
Paprika	281	
Pepper	282	
Pumpkin	283	
Spinach	284	
Squash	285	
Tomato	286	
Radish	287	This code is given to products "Radish" and "Turnip" in the reference tables of 2006 and 2009 dataset.
Turnip	289	This code is given to product "Esquaih" in the reference tables of 2006 and 2009 dataset
Gourd (bitter/spiny)	290	
Tree tomato (Tamarillo)	291	
Okra (Lady's finger)	292	
Callaloo	293	
Bitter solum	294	
Nakati	295	
Bitter Eggplant	296	
Sweet leaf	297	
Luffa	298	
Chayote	299	
Water spinach	300	
Green onion	301	

Product	Code	Comment
Chicory	302	
West Indian gherkin, burr cucumber	303	
Collard greens	304	
Parsley	305	
Arugula	306	
Jambú	307	
Eru	308	
Unspecified vegetables	309	
Beet	310	
Corriander leaf	1101	Leafy vegetable
Marfa	1102	Squash kind veg
Kachu	1103	
Mati aloo	1104	Tuber
Kakrol	1105	Veg
Korolla, bitter gourd	1106	Bitter melon
Jhinga	1107	Veg
Chichinga	1108	Veg
Borboti bean	1109	Long bean
Watercress	1110	
Greenleaf vegetables	1111	
Tindora	1112	
Tinda	1113	
Fruits	**(311-350, 502, 1214)**	
Avocado	311	
Banana	312	
Carambola/Star fruit	313	
Coconut	314	
Durain	315	
Guava	316	
Jack fruit	317	
Lemon	318	
Lime	319	
Lichee	320	
Mango	321	
Mangosteen	322	
Orange	323	
Papaya	324	
Passion fruit	325	
Pineapple	326	
Plantain	327	
Rambutan	328	
Soursop	329	
Watermelon	330	
Apple	331	Also given code 337
Peach	332	
Plum	333	
Apricot	334	

Product	Code	Comment
Cantelope	335	
Almond	336	
Apple	337	
Pond-apple	338	
Custard apple	339	
Grapefruit	340	
Cashew fruit	341	
Cashew seed/nut	342	
Craboo	343	
Plum	344	
Banana – cooking (Plantain)	345	
Banana - brewing	346	
Banana - roasting	347	
Banana - sweet (small)	348	
Banana - sweet (large)	349	
Tangerines	350	
Citrus fruit	502	
Several other fuits General code for fruits	1214	
Beverages	**(351-360)**	
Cocoa	351	
Coffee	352	
Tea	353	
Fresh coffee	354	
Dry coffee	355	
Cocoa seeds	356	
Spices	**(361-380)**	
Cardamom	361	
Cinnamon	362	
Clove	363	
Curry	364	
Ginger	365	
Mint	366	
Pepper	367	
Vanilla	368	
Xantohxylum	369	
Red pepper	370	This code is given to product type "Tumeric" in the references tables of 2006 and 2009 dataset
Coriander	371	
Oregano	372	
Lemongrass	373	
Turmeric	374	
Tucupi	375	
Achiote	376	
African basil	378	
Green leafy vegetables	380	

Product	Code	Comment
Other food crops	**(381-400)**	
Palm oil	381	
Sugar cane (and juice)	382	
Sunflower	383	
Mustard	384	
Sweets made from cultivated fruits	385	
Aloe vera	386	
Urucú	387	
Unrefined sugar	388	
Beverage	389	
Miscellaneous & unclassified	**(421-500)**	
Cotton	401	
Jute	402	
Sisal	403	
Rubber	404	
Tobacco	405	
Coca leaves	406	
Eucalyptus	407	
Palm stem (or heart?)	408	
Palm petiole	409	
Roselle flowers	410	
Roselle leaves	411	
Millet stem	412	
Acacia spp.	413	
Pinus spp. (pine)	414	
Mahogany	415	
Musizi	416	
Spanish/Mexican cedar	417	
Brazil nut tree	418	
Cannabis	419	
Atimezia	420	
Grass for domestic animals	421	
Legumes for domestic animals	422	
Leaves of cultivated crops	423	
Crop residues	424	
Brachiaria grass	425	
Elephant Grass, Napier Grass or Uganda Grass	426	
Kikuyo grass	427	
Kudzu	428	
Green manure	429	
Guinea grass, Tanganyika grass, buffalograss	430	
Thatching grass	431	
Bluestem grass	432	
Khosela	433	
Paral	434	Straw
Dhod	435	

Product	Code	Comment
khoya	436	
Nal	437	
Mad fruit	501	
Breadfruit	503	
Cupuacu fruit	504	
Barbados cherry	505	
Guaraná fruit	506	
Inga fruit	507	
Peach Palm Fruit	508	
Ebidodoima	509	
Açai Palm Fruit	510	

Note: For unclassified codes/products check the references tables of the dataset .

2.2 Forest markets (code-market)

A major distinction is made between: (i) when the household sell the product within the village, and (ii) when the household itself (or in cooperation with other households) transport the produce outside the village and sell it there. Note that the relevant question is: *To whom does the household sell the product?* Thus it refers to the first step in the marketing chain, not where the product is being processed or consumed.

Some borderline cases will still exist. For example, your neighbour may take your product to the market in a neighbouring village and sell it there to consumers. If this is part of an arrangement where neighbours take turns and go to the market, and then are paid whatever price is obtained, code 21 would be the appropriate. If the neighbour buys it like a regular agent or trader, then code 12 should be used.

To whom	Code	Comments
1. Sold within the village	**(10-19)**	
Friends and relatives	10	
Directly to consumers	11	E.g., taking the produce to the market and selling directly to consumers, or selling along roadsides.
Private wholesale buyer	12	Agent, trader, middleman, or similar
Processing factory	13	
Producer organization	14	
Government agency	15	
Other	19	
2. Sold outside the village	**(20-29)**	
Friends and relatives	20	
Directly to consumers	21	E.g., taking the produce to the market and selling directly to consumers, or selling along roadsides.
Private wholesale buyer	22	Agent, trader, middleman, or similar
Processing factory	23	
Producer organization	24	
Government agency	25	
Other	29	

2.3 Land categories (code-land)

These categories correspond with table V1D1 (section D in Village survey 1). See also the definitions given in the Technical Guidelines.

Category	Codes used in the 2006 and 2009 dataset	Codes used in the 2012 dataset	Code
Forests:			
Natural forest	1	11,12	10
Managed forests	2	21,22	20
Plantations	3	31,32	30
Agricultural land:			
Cropland	4	40	40
Pasture (natural or planted)	5	50	50
Agroforestry	6	60	60
Silvipasture	7	-	70
Fallow, < 15 years since cultivation, see guidelines	8	80	80
Other land categories:	9	-	
Shrubs	-	90	90
Grassland	-	100	100
Residential areas & infrastructure	-	-	110
Wetland	-	121	120
Other	-	199	199
Rented out	11	110	-
Rented in	12	120	-
Total land	10	1000	-

2.4 Forest categories (code-forest)

The forest categories follow the same three forest categories in the land classification above (see also PEN guidelines on definitions). In addition, each forest category is split between open and closed forest, the dividing line being 40 % canopy cover. To the extent possible, the researchers should use the open/closed categories, that is, use codes: 11, 12, 21, 22, 31, 32. In some cases, however, it may be very hard to make this distinction and the aggregate categories can be used, that is, codes: 10, 20, 30.

Category	Code	Comments
Natural forest	10	
Natural forest – closed	11	Canopy cover > 40 %
Natural forest – closed (seasonally-inundated)	111	
Natural forest – closed (dominated by palms)	112	
Natural forest – open	12	Canopy cover < 40 %
Managed forests	20	
Managed forests – closed	21	Canopy cover > 40 %
Managed forests – closed (seasonally-inundated)	211	
Managed forests - open	22	Canopy cover < 40 %
Managed forests – open (seasonally-inundated)	221	
Plantations	30	
Plantations – closed	31	Canopy cover > 40 %
Plantations – open	32	Canopy cover < 40 %

2.5 Tenure regime (code-tenure)

The actual land tenure regimes consist of several dimensions, which should be reflected in the coding system used. We have used a lexicographic classification that consists of three dimensions or levels, where each dimension is represented by one digit in the three digit code used:

1. The formal or legal (*de jure*) owner of the land, which is the entity with the *transfer* rights (rights to sell, lease or rent out the land). We distinguish between three such entities: (1) the state at national or regional level; (2) communities or more generally: groups of people; (3) private entities (individuals or companies).
2. The actual or *de facto* owners of the land, that is, those that use it and have the *de facto* use rights (but normally not the transfer rights, neither *de facto* nor *de jure*). One problem in classifying land tenure is the overlapping use rights on the same piece of land, for example, some use rights can be held by individual households (e.g., using land for agriculture), while others are held by the community (e.g., collecting dead firewood or wild fruits). To capture this, we introduce a mixed category for community and individual *de facto* land rights, covering the situation used in the example. Thus we operate with seven categories: (1) state, (2) community, (3) private, (4) state-community, (5) state-private, (6) community-private, and (7) state-community-private.
3. The degree of enforcement of rules, which regulates access (who are the users), permissible uses, and possibly also the management of the land and its resources. Three categories are distinguished: (1) high, (2) moderate/low, and (3) no enforcement of rules. Note that the rules might be set by the *de facto* and/or the *de jure* owners, and may have the backing by either the state or customary institutions.

Note that *open access* is rarely a separate land category at the *de jure* level, in the sense that land almost always has a *de jure* owner (and the state often being the default owner). But *de facto* open access can appear within all categories of *de jure* owners, in situations with *no enforcement* of rules, or rules do not exist.

A distinction should be made between community and private *de facto* use rights. Private use rights refer to situations where only *one* individual, household or lineage has the rights to use the resource, while community rights refer to situations where a more or less well-defined *group* of people have the rights.

In the 3 digit tenure code the first digit refers to *de jure* owner, the second to the *de facto* user, and the third digit to the degree of rules enforcement. Only codes which specify all the three dimensions should be used, i.e., only the codes in **bold** in the table**.**

In short, land tenure should be categorized by asking three questions:
1. Who are the formal (*de jure*) owners: state, community or private? (1-3)
2. Who are the actual users: state, community, private, or some combination? (1-7)
3. To what extent do rules of access and use exist, and if they do, how well are they enforced? (1-3)

This generates a total of 3 x 7 x 3 = 63 combinations, shown in the table below. But, some of the codes will probably never be used as they are unlikely combinations.

Tenure regime	Code	Comments/examples
State *de jure* owner	1	
State *de facto* user	11	
High enforcement of rules	**111**	E.g., a well-protected national park
Medium/low enforcement of rules	**112**	
No enforcement of rules (open access)	**113**	
Community *de facto* user	12	
High enforcement of rules	**121**	E.g., a community forest management system, where the state is the legal owner, but the forest is managed and used by the community with strong enforcement of the rules set.
Medium/low enforcement of rules	**122**	
No enforcement of rules (open access)	**123**	A typical open access case: forest owned *de jure* by the state, but used by villagers and few/no rules exist or are enforced.
Private *de facto* user	13	E.g., squatters on public (state) land which use it for agriculture.
High enforcement of rules	**131**	
Medium/low enforcement of rules	**132**	
No enforcement of rules (open access)	**133**	
State-community *de facto* user	14	
High enforcement of rules	**141**	
Medium/low enforcement of rules	**142**	E.g., a forest reserve owned *de jure* by the state, but with weak enforcement and some (illegal) local use
No enforcement of rules (open access)	**143**	
State-private *de facto* user	15	

Tenure regime	Code	Comments/examples
High enforcement of rules	**151**	
Medium/low enforcement of rules	**152**	
No enforcement of rules (open access)	**153**	
Community-private *de facto* user	16	E.g., shifting cultivators in *de jure* state forest, with individual use rights based on regular forest clearing and cultivation, and collection by community of NTFPs.
High enforcement of rules	**161**	
Medium/low enforcement of rules	**162**	
No enforcement of rules (open access)	**163**	
State-community-private *de facto* user	17	
High enforcement of rules	**171**	
Medium/low enforcement of rules	**172**	
No enforcement of rules (open access)	**173**	
Community *de jure* owner	2	
State *de facto* user	21	These categories seem unlikely.
High enforcement of rules	**211**	
Medium/low enforcement of rules	**212**	
No enforcement of rules (open access)	**213**	
Community *de facto* user	22	Similar to 12, but the community fully owns the forest.
High enforcement of rules	**221**	
Medium/low enforcement of rules	**222**	
No enforcement of rules (open access)	**223**	
Private *de facto* user	23	
High enforcement of rules	**231**	
Medium/low enforcement of rules	**232**	
No enforcement of rules (open access)	**233**	
State-community *de facto* user	24	
High enforcement of rules	**241**	
Medium/low enforcement of rules	**242**	
No enforcement of rules (open access)	**243**	
State-private *de facto* user	25	
High enforcement of rules	**251**	
Medium/low enforcement of rules	**252**	
No enforcement of rules (open access)	**253**	
Community-private *de facto* user	26	E.g., a community owned forest with community use but also some agricultural encroachment by farmers.
High enforcement of rules	**261**	
Medium/low enforcement of rules	**262**	
No enforcement of rules (open access)	**263**	
State-community-private *de facto* user	27	
High enforcement of rules	**271**	
Medium/low enforcement of rules	**272**	
No enforcement of rules (open access)	**273**	

Tenure regime	Code	Comments/examples
Private *de jure* owner	3	
State *de facto* user	31	These categories seem unlikely.
High enforcement of rules	**311**	
Medium/low enforcement of rules	**312**	
No enforcement of rules (open access)	**313**	
Community *de facto* user	32	
High enforcement of rules	**321**	
Medium/low enforcement of rules	**322**	
No enforcement of rules (open access)	**323**	
Private *de facto* user	33	
High enforcement of rules	**331**	The 'classical' private property case. May also include land rented in/out in this category
Medium/low enforcement of rules	**332**	
No enforcement of rules (open access)	**333**	
State-community *de facto* user	34	
High enforcement of rules	**341**	
Medium/low enforcement of rules	**342**	
No enforcement of rules (open access)	**343**	
State-private *de facto* user	35	
High enforcement of rules	**351**	
Medium/low enforcement of rules	**352**	
No enforcement of rules (open access)	**353**	
Community-private *de facto* user	36	E.g., NTFP harvested by villagers from a *de jure* private forest, but neither logging nor agriculture accepted.
High enforcement of rules	**361**	
Medium/low enforcement of rules	**362**	
No enforcement of rules (open access)	**363**	
State-community-private *de facto* user	37	
High enforcement of rules	**371**	
Medium/low enforcement of rules	**372**	
No enforcement of rules (open access)	**373**	

2.6 Mode of transport (code-transport)

Mode of transportation	Code	Comments
Foot	1	
Bike	2	
Motorbike	3	
Donkey/horse/ox cart	4	Include directly carrying the load on their back
Tractor	5	Refers to the conventional tractors with 2 (or more) large driving wheels, and 2 (or 1) steering wheels. Does *not* include the small, two-wheel engine-powered devices (sometimes called hand-tractors).
Car/van	6	
Truck/lorry	7	

Mode of transportation	Code	Comments
Bus	8	
Non-motorized boat/raft	9	
Motorized boat/raft	10	
Rickshaw/3 wheel van	11	
Jeep/ chander gari	12	
Baby Taxi/ 3 wheeler auto	13	
Motocar, trimobile	14	
Other	19	

2.7 Type of wage work (code-work)

This code refers to table F on *wage income* in the quarterly survey. Note that only *wage* work is included here, business is covered elsewhere in the questionnaire.

Type of work (sector)	Code	Comments
Small-scale agriculture	1	E.g., casual labour during harvesting
Large-scale (commercial)	2	E.g., working on plantations
Agricultural processing	3	E.g., beer making
Forestry – logging	4	
Forestry – processing	5	E.g., wage work in sawmills and other forms of processing
Forestry – transport	6	
Forestry – other	7	
Fishing	8	
Transport/porter	9	Not forestry-related transport (see 6 above)
Trade and marketing	10	
Carpentry	11	
Construction	12	
Mechanical	13	E.g., working in a garage and similar
Mining	14	
Local cottage industry (not included elsewhere)	15	"Cottage industry" refers to small scale producers working from their homes, typically part time. (And has nothing to do with making cottages ….). Some cottage industries might fall in other categories (e.g., carpentry), and should be classified there (code 11)
Manufacturing industry	16	
Service industry	17	E.g., restaurant, hotel, store
Government employee	18	E.g., a teacher
Community employee	19	E.g. forest watcher, secretary of FUG
Tailor, shoe maker, or similar	20	This code is given only for work type "tailor" in the reference tables of 2006 and 2009 dataset
Blacksmith/goldsmith	21	
Domestic work	22	E.g., cook, servant, babysitter, … in another home, This code is assigned to "Shoe maker/cobbler" in the reference tables of 2006 and 2009 dataset.
Field/research assistant/guide	23	This code is assigned to "household works" in the reference tables of 2006 and 2009 dataset.
Forest guard/ranger	24	This code is assigned to "teachning/HH survey" in the

Type of work (sector)	Code	Comments
		reference tables of the 2006 and 2009 dataset.
Quarrying	25	This code is assigned to "painting" in the reference tables of 2006 and 2009 dataset
Guard (non-forest related)	26	This code is assigned to "miscellaneous" in the reference tables of 2006 and 2009 dataset.
Painter	27	This code is assigned to "cooking" in the 2006 and 2009 dataset.
Aquatic products processing	28	This code is assigned to "beehive farming" in the reference tbales of 2006 and 2009 dataset
Cook	29	This code is assigned to "worship" in the reference tables of 2006 and 2009 dataset.
Road construction/maintenance	30	
NGO worker	31	
Business managerial position	32	
Electrician	33	
Musician	34	
Midwife	35	
Shaman	36	
Craftsman	37	
Fishfarm worker	38	
NTFP worker (harvest & management)	39	
Teacher (private lessons)	40	
Boat repair shop employee	41	
Processing plant employee	42	
Oil company reforestation crew	43	
Driver	44	
Wage work grazing	45	
Other	99	
Non government employee	181	Code used in 2006 and 2009
Skilled labour	182	Code used in 2006 and 2009

2.8   Units of measurement (unit-code)

Local units of measurement can be used, both when filling out the questionnaire, and when entering the data into the databank. If local units are used, the conversion factor to metric units must be reported. The table below will be supplemented to include the local units used in the various PEN studies. The units will be location-specific, e.g. one bag of rice in Vietnam may not have the same weight (kg) as one bag of rice in Bolivia.

Unit of measurement	Code	Metric equivalent (1 unit =x metric units)	Metric unit	Comments
Weight and volume	**(1-100, 301-400)**			
Grams	1	0,001	Kg	
Kg	2	1	Kg	
Tonnes	3	1 000	Kg	
Pound (lb)	4	0.454	Kg	
Litres	5	1	Litre	
Imperial Gallon	6	3.79	Litre	
US gallon (fluids)	7	4.55	Litre	
Bag/sack	8			
Bucket	9			
Bale	10			
Bundle	11			
Cord	12			
Cob	13			
Cup	14			
Headload	15			
Scotch cart	16			
Wheelbarrow	17			
Mana	18			Weight (Nepal)
Pathi	19			Weight (Nepal)
Muri	20			Weight (Nepal)
Quart (liquids)	21			
Krokis sack (50 lb bag)	22			
Krokis sack (100 lb bag)	23			
Bucket (5 lb bucket)	24			
Bucket (1 lb bucket)	25			
Bunch	26			
Ounce	27			
Tin/Debe	28			
Basket	29			This code is given to a unit "dalo" in the reference tbales of 2006 and 2009 dataset
Basin/Bucket	30			

Unit of measurement	Code	Metric equivalent (1 unit =x metric units)	Metric unit	Comments
Bunch	31			Same as 26
Heaps	32			
Number (pieces)	33			Use if simple counting, e.g. number of machete
Stick	34			
Trays	35			
Handful	36			
Cajas	37			
Latas	38			
Cm	39			
cm^2	40			
cm^3	41			
M	42			
m^2	43			Has a code of 218 too according to the reference tables of the dataset.
m^3	44			
Leaves	45			
Boards	46			
Square Beams	46			
Dose (*vaccine*)	47			
Ball of fencing	48			
Jerrycan (5 litre)	49			
Jerrycan (20 litre)	50			
Polythene bag	51			
Saucepan/plate	52			
Bottle	53			
Lorry (truck load)	54			
Spoon	55			
Rope	56			
Box	57			
Tablet	58			
Kettle	59			
Bowl	60			
Packet	61			
Block	62			
ml (millilitres)	63			
People/worker	64			See also code 203
Months	65			
Barrica	66			
Jug	67			
Arroba	68			
Ear of corn	69			
Fence	70			

Unit of measurement	Code	Metric equivalent (1 unit =x metric units)	Metric unit	Comments
Stable/Corral	71			
Veterinarian visit	72			
Package of vitamins	73			
Heads (of cattle)	74			
Fine ($)	75			
Pole	76			
Inch	78	2.54 cm		
Plate Yoruba	80			
Small plastic bag	81			Used in West Africa
50 kg rice bag	82			
100 kg rice bag	83			
Leaves woven together	84			
Roll	87			
Feet	91			
Square feet	92			
Cubic feet	93			
Granary	96			
Canari	97			
Pesticide can	98			
Seed can	99			
Tomato can	100			
Thurong	308			for fuelwood
Cubic feet	309			for timber
Napo	310			Length of the rope used for measuring the fixed circumference of a bundle of thatch grass
Bhari	311			
Hal	312			
Timba	313			
Doko	314			
Number	315			
Glass bottle	317			
Area	**(101-200)**			
Hectares	101	10 000	m^2	
Acres	102	4 047	m^2	
Hal (plough)	103, 312			Nepal
Ropani	104, 316	500	m^2	Mountain region
Aana	318	0.0625	Ropani	Mountain region
Kattha	321	338	m^2	Lowlands
Others	(201-)			

Unit of measurement	Code	Metric equivalent (1 unit =x metric units)	Metric unit	Comments
Piece/Number	201			One unit of the products. This is used for, for example, fruits (one coconut), animals, eggs
Dozen	202			Used for selling, for example, eggs.
One person-day	203			See also code 64
One animal-day	204			
Hour	205			Has a code of 995 according to the reference table of the 2009 data set
One trip	206			
One hundred units	207			
One thousand units	208			
Quarter of a hectare	209			
Donkey load	210			
Bhari	211			
Tractor hour	212			
Tractor load	213			
Seed kit	214			
Plough (Hal)	215, 103			
Support trees	216			
Bigha	217			
Sq. meter	218, 43			
Sq. feet	220			
Hal (plough)	221, 103, 215, 312			
Sq. hands	225			
Aana	226			
Paisa	227			
Plant/tree	228			
Inch	229			
Leaf plates	230			
Tree	231			
Buta	232			
Hand	233			
Dam	234			
Katha	235			
Dhur	236			

Unit of measurement	Code	Metric equivalent (1 unit =x metric units)	Metric unit	Comments
Ghari	238			
Jhyal	239			
Gaj	240			
LS	250			
Aali	251			
Congo 7	301			
Congo 14	302			
Livestock water trough	303			
Livestock feeding trough	304			
Hen house	305			
Arbol (tree)	306			
Maito	307			
Cubic feet	309			
Napo	310			
Bhari	311			
Timba	313			
Doko	314			
Number	315			
Trailor/tractor	991			
Cf.t.	317			
Mutha (handful bundle of vegetable)	319			
Chatta (5ft*5ft*20ft, volume)	320			
Trip/times	992			
cft	994			
Hour	995			
Chatta	996			
Doko	997			
Timba	998			
Bhari	999			

3 Codes used in specific tables in questionnaire

Note: these are listed in the questionnaire, but new codes may be added below without the prototype questionnaire being updated.

3.1 A1D2: Household assets

Code	Asset	Comments
1.	Car/truck	
2.	Tractor	
3.	Motorcycle	
4.	Bicycle	
5.	Handphone/phone	
6.	TV	
7.	Radio	
8.	Cassette/Gramophone /Radiogram/VHS/CD /VCD/DVD/ player	
9.	Stove for cooking (gas or electric only)	
10.	Refrigerator/freezer	
11.	Fishing boat and boat engine	
12.	Chainsaw	
13.	Plough	
14.	Scotch cart	
15.	Shotgun/rifle	
16.	Wooden cart or wheelbarrow	
17.	Furniture	
18.	Water pump	
19.	Solar panel	
20.	Sewing machine	
21.	Electric appliance	
22.	Saddle	
23.	House in town	
24.	Battery	
25.	Parabolic antenna (satellite dish)	All asset items below this (including) are not part of the asset items listed in the reference table in the 2006 and 2009 dataset. This is not the case for the 2012 dataset
26.	Generator	
27.	Sink	
28.	Drill	
29.	Propane tank	
30.	Motor for farina	
31.	Planting machine	
32.	Fishing net	
33.	Mattress	
34.	Water tank	
35.	Air compressor	

Code	Asset	Comments
36.	Canoe	
37.	Milling machine	
38.	Machinery for workshop	
39.	Carpentry tools	
40.	Handsaw, cross-cut saw	
41.	Pots/Cooking drums/Brewing drums	
42.	Construction materials (ex. barbed wire/timber/bricks)	
43.	Weigh scale	
44.	Camera	
45.	Lamp/pressure lamp	
46.	Clock	
47.	Backpack sprayer	
48.	Trishaw	
49.	Types of "grass cutters"	
50.	Large roaster (farinha, coffee)	
51.	Machine Boak Srove	Used to separate distinguishing rice from stems after rice harvest
53.	Rice mill	
54.	Oven (iron, tin, copper)	
55.	Flail mower	
56.	Boat engine	
57.	Washing machine	
58.	Karaoke machine	
59.	Gold sifter	
60	Machine to process assai	
61	Water reservoir	
62	Metal drums for storage	
63.	Fan	
64.	Shrimp trap	
65.	Computer	
66.	Impresora	
67	Hand Grinder	This code is given to "Tree outside the forest (timber)" in the reference table of 2012 dataset
68	Pipe	This code is given to "Fruit tree outside the forest" in the reference table of 2012 dataset
69	Fodder tree outside the forest	
70	Bamboo clump outside the forest	
99.	Others	
162	Biogas	
163	Improved stove	

3.2 QH2: Agricultural inputs

Code	Inputs	Comments
1.	Seeds	Can use more detailed codes: 60+
2.	Fertilizers (inorganic)	
3.	Pesticides/herbicides	
4.	Manure	
5.	Draught power	
6.	Hired labour	Can use more detailed codes: 40+
7.	Hired machinery	
8.	Transport/marketing	
9.	Machete	All the codes belw this (including) does not match with the codes we have in the 2006 and 2009 dataset except code 20 which is given to "payment for land rentals" This is not a problem with the reference table of the 2012 dataset
10.	Chainsaw (incl. chains)	
11.	Gasoline, oil	
12.	Rasp (sharpener) for blades, machete etc.	
13.	Tool that a grim reaper holds	
14.	Sacks	
15.	Ax	
16.	Large hoe	
17.	*Boca de lobo*	
18.	Shovel	
19.	Other, specify:	
20.	Payment for land rental	
21.	Planting machine	
22.	Sickle	
23.	Plastic sheets	Used to dry for example rice or beans
24	Rake	
25	Basket	
26	Crop cover or greenhouse	
27	Pallette	
28	Garden fence	
29	Nails	
30	Sprocket	
31	Spark plugs	
32	Work boots	
33	Tools in general	
34	Trellis	Used for growing squash, luffa, or chayote
35	Plough	
More detailed codes for hired labor:		
40.	Cutting down the small trees using a machete	

Code	Inputs	Comments
41.	Cutting down the big trees using a chainsaw or ax	
42.	Planting	
43.	Maintenance	
44.	Harvest	
45.	Caretaker	
46.	Food for hired labor	
47.	Transportation for hired labor	
More detailed codes for seeds/seedlings:		
60.	Banana	
61.	Cabbage	
62.	Corn	
63.	Cucumber	
64.	Grape fruit	
65.	Lettuce	
66.	Onion	
67.	Orange	
68.	Pepper	
69.	Rice	
70.	Seedlings	
71.	Tomato	
72.	Okra	
73	West Indian gherkin, burr cucumber	

3.3 QI1: Livestock

Code	Animal	Comments
1.	Cattle	Code given to ox in 2006 and 2009 dataset
2.	Buffalos	Code given to cow in 2006 and 2009 dataset
3.	Goats	Code given to buffalo in 2006 and 2009 dataset
4.	Sheep	
5.	Pigs	
6.	Donkeys	
7.	Ducks	
8.	Chicken (see also code 24)	
9.	Horses	
10.	Guinea pigs	
11.	Rabbit	
12.	Turkey	
13.	Guinea fowl	
14.	Bull/ox (adult, > 3 yrs)	
15.	Cow (adult, >3 yrs)	

Code	Animal	Comments
16.	Steer (young bull/ox) or heifer (young cow) (1-3 years)	
17.	Calf (< 1 year)	
18.	Juvenile chicken	
19.	Other, specify:	
20.	Doves	
21.	Dog	
22.	Goose	
23.	Piglets	
24.	Bees (bee hives)	Can use bee hives as the unit
25.	Goru	Ox (Nepal)
26.	Ranga	Male buffalo
27.	Parewa	Pegion
28.	Mules	
29.	Helmeted Guineafowl	(*Numida meleagris*)
30.	Goat kid (young goat)	

3.4 QI2: Livestock products

Code	Product	Comments
1.	Meat	
2.	Milk	
3.	Butter	
4.	Cheese	
5.	Ghee	
6.	Eggs	
7.	Hides and skin	
8.	Wool	
9.	Manure	
10.	Draught power	
11.	Bee hives	This code is given to "mule carrier" in the 2006 and 2009 dataset.
12.	Honey	This code is given to "horse riding" in the 2006 and 2009 dataset
13.	Curdled milk	This code is given to "honey" in the 2006 and 2009 dataset
14.	Soap	
15.	Quail eggs	
19.	Other, specify:	
20	Individual animal	
21.	Curd	
111.	Mutton (meat)	
112.	Chicken (meat)	
113.	Pork	
114.	Goat	
115.	Animal breeding	
116.	Buffalo selling	
117.	Animal selling	

3.5 QI3: Livestock inputs

Code	Input
1.	Feed/fodder
2.	Rental of grazing land
3.	Medicines, vaccination and other veterinary services
4.	Costs of maintaining barns, enclosures, pens, etc.
5.	Hired labour
6.	Inputs from own farm
7.	Salt (This code is give to input/cost type "tax" in the 2006 and 2009 dataset)
8.	Transport to market
9.	Other, specify:
12	Bought buffalo/animal
13	Bought Namlo
14	Maize
15	Egg
16	Ghee
17	Milk
18	Salt (in 2006 and 2009 datasets)
19	Bamboo
20	Damlo
21	Water
22	Transportation

3.6 QJ1: Other income sources

Code	Type of income
1.	Remittances
2.	Support from government, NGO, organization or similar *NOTE: can use more detailed codes from 10 onwards*
3.	Gifts/support from friends and relatives
4.	Pension
5.	Payment for forest services
6.	Payment for renting out land (if in kind, state the equivalent in cash)
7.	Compensation from logging or mining company (or similar)
9.	Other, specify:
10.	Maternity leave (All the codes below this (including) does not match with the codes with have in the reference table of 2006 and 2009 dataset)
11.	Support for sickness or disease
12.	Educational fund
13.	NGO food donation
14.	Seeds (usually for annual crops)
15.	Seedlings (usually for perennial crops)
16.	Tools (sale, renting out)
17.	Payment to agricultural producers
18.	Rubber tapper retirement
19.	House rental
20.	Sale of standing trees
21.	Research/NGO assistance (e.g., lump sum payments from researchers/NGOs for general assistance). Note: if regular wage work, use section F of quarterly questionnaire. If not linked to particular services, use code 2 (or 13) above.

Code	Type of income
22.	Widower's payment (or other death in family)
23.	Land sales
24.	Dowry
25.	Work in political campaigns
26.	Watchman
27.	Fishermen insurance
28.	Government social programs (eg: Bolsa família – Brazil)
29.	Rural credit
30.	Business of buying and selling of agriculture and extarctive products, This code is given to "monthly salary" in the 2012 dataset reference table.
31.	Business related to fishing
32.	Transportation of passengers

Appendix C1 Traditional medicine and medicinal plant consumption 1

Background
The basic idea is to collect health related data to enable quantitative analysis of relationships between subjective health criteria and standard household and village level variables. It is therefore important that the questionnaire does not become too large – ideally it should be possible to complete it within 30 minutes.

The questionnaire will be attached to on-going household level socio-economic investigations, e.g. in connection to QS4 at the permanent sites in Nepal. It will therefore be possible to use already trained enumerators that are familiar with, for instance, extracting barter values.

Objective
Explore the relation between forest dependence and health at household level, specifically:

1. Investigating the relationship between poverty and health at the household level. This should allow us to make inferences about the causal linkages between forest dependence and health.
2. Investigating how households deal with poor health - both in terms of what they do to avoid getting sick and to get better (prevention and treatment) as well as how they cope with consequences (e.g. getting neighbours to help with the harvest).

There is a lot in the literature on this, e.g. in medicinal anthropology – we are presently conducting a review that will be completed later this year.

Hypotheses
1. Higher household income will improve health. [This is very broad and we need to break it down. For instance, are there certain components of wealth associated with improved health? Is access to credit a substitute for higher income as households can borrow in times of illness? Is higher income related to market integration through sale of products or labour? But we can not do this break-down now as the literature review is in progress – however, the on-going socio-economic data collection should provide us with all required variables such as caste, housing, assets, and income]
2. Higher income households are less dependent on reciprocal relationships. [So when households get richer they give and receive less goods and services as they can deal better with shocks such as illnesses]
3. Higher income households are more dependent on allopathic medicine. [They spend more on allopathic medicine though they also continue to consult traditional healers. Another way to formulate this would be: Lower income households are more dependent on traditional treatment]
4. All households, regardless of income, remain dependent on traditional medicine for treatment of a group of diseases.
5. The use of medicinal plants for general health maintenance will not decrease with increased income. [People in many 'traditional' societies have a less clear-cut distinction between food and medicine, and many households will probably continue to use traditional medicine for general health maintenance]

Methods

In order to gain a better understanding of the site specific health context, qualitative methods will be employed before the questionnaire is administered. Group discussion with key informants will be done to acquire understanding of issues such as illness seasonalities and the availability of treatment options. It will also be used to collect missing village level variables.

A closed-ended questionnaire, attached, is distributed to randomly selected households that are already part to socio-economic studies. The questionnaire operates with three measures of subjective illness:

1. number of days hh members were ill during the four weeks before the interview
2. number of days hh members were confined to bed during the four weeks before the interview
3. number of days hh members were confined to bed during the last main harvest season

Pre-testing is required to uncover whether we can use a four week recall period or if we should settle for just two weeks. The advantage of the former is that we get more records – fewer answers that are "zero".

Problems

When using subjective perceptions of health, country comparisons become difficult as health notions change according to culture. We will, however, be able to say something about the relative importance of medicinal plants/traditional medicines at each site.

The questionnaire will estimate the value of each treatment, but will not allow us to valuate the partial contribution of any used medicinal plants in a given treatment.

Annex A - Key informant questions

1. At what time of the year are people usually most sick? (rank 1, 2, 3)
Consider in general, not only this year.

Nepalese months	Rank	Nepalese months	Rank
1.Baisak		7. Kartik	
2. Jestha		8. Mangsir	
3. Ashad		9. Poush	
4. Shrawan		10. Maag	
5. Bhadra		11. Falgun	
6. Aswin		12. Chaitra	

1 is where more people are sick, 3 where less

2. How were the following periods affected by illness?

Period	Typical degree of illness
Last four weeks	
Main harvest/labour season. What month:_____	

Degree of illness: 1-High; 2-Medium; 3-Low

3. What is the distance from the village centre to the nearest functional health post?

_____ km,

_____hours/minutes

4. Which of the following treatment options are used and where are they available (tick):

	Absence/presence of health facilities			Used (yes/no)
	In village	1 day or less travel back and forth	More than 1 days travel back and forth	
Hospital				
General practitioner				
Health post				
Ayurvedic doctor				
Tibetan doctor (amchi)				
Traditional healer				
Jhakri				
Elder people in village with knowledge				
Medical shop				
Other shops selling medicine				
Other: _____				

5. Do people here generally use medicinal plants for illness treatment? – who will prescribe and collect?

6. For which illnesses/injuries is traditional medicine the first option?

7. For which illnesses/injuries is allopathic medicine the first option?

8. Do people regularly or occasionally take preventive medicine or dietary supplement for general well being? (e.g. spices, tonics, medicinal plants, etc.) – what, and for what expected benefits?

9. When people experience illness and have problems with regards to treatment costs or e.g. farm work, what do they do?

Health

1. Do any members of the household take medicine on a regular basis, e.g. for chronic diseases? If yes, please fill in the below.

Name	illness	Is any type of doctor monitoring the illness[1]	Treatment type[2]	Medicinal plants included, y/n	Monthly treatment cost[3]

* The PID corresponding to names need to be inserted before entering into the database.

2. How many hh members were **confined to bed due to illness** during the last four weeks?

Name	No. of days ill	Symptoms/Illness	Who consulted[1] (more than one option possible, put codes in sequence)	Treatment type[2] (more than one option possible, put codes in sequence)	Medicinal plants included y/n	Value of treatment[3]

3. How many hh members were **ill but not in bed** during the last four weeks? (e.g. cough, cold, headache)

Name	No. of days ill	Symptoms/Illness	Who consulted[1] (more than one option possible, put sequence)	Treatment type[2] (more than one option possible, put sequence)	Medicinal plants included y/n	Value of treatment[3]

4. How many hh members were confined to bed due to illness during the last main harvest season?

Name	No. of days ill	Symptoms/Illness	Who consulted[1] (more than one option possible, put codes in sequence)	Treatment type[2] (more than one option possible, put codes in sequence)	Medicinal plants included y/n	Value of treatment[3]

5. Do any hh members regularly or occasionally take any medicine or dietary supplement (can be whole hh) for general well being?

Name	Reason for taking preventive medicine	Prescribed by[1]	Medicine/dietary supplement type[2]	Medicinal plants included y/n	Medicine/dietary supplement price[3] (last four week)

6. When household members fall ill, problems may arise in terms of lost labour and/or need for money to pay for treatment or other complications.

a. Which of the following have you received for persons reported ill above?

Name	Question no. from above	Do nothing, wait till illness is over (tick)	Received cash with no interest			Received labour without paying wage			Resources			
			Amount	From[4]	to pay back (yes/no)	Days	From[4]	To return (yes/no)	Type[5]	From[4]	Price[3]	Gift or borrow

b. Which of the following actions have you taken in consequence of the illness reported above:

Name	Question no. from above	Sold assets[6]		Sold forest/alpine products[7]		Borrowed money from bank, moneylender		Bought wage labour for farming or other work	
		Type	Rs.	Type	Rs.	Amount	Interest	Days	Rs.

7 In addition to illnesses mentioned above, when household members fell ill and were confined to bed or sustained serious injury within the last year, how did you cope with labour and cash/resource problems?

	Adult ill					Child ill				
	Borrow resources[5]		Receive labour (days)	Raise cash (amount)		Borrow resources[5]		Receive labour (days)	Raise cash (amount)	
	type	Price[3]				type	Price[3]			
Borrow resources from relatives										
Borrow resources from neighbours										
				type	amount				type	amount
Collect and sell forest/alpine products[7]										
Sell own assets[6]										
Borrow money from money lender, bank, etc.										
Receive cash from relatives										
Borrow cash from relatives										
Borrow cash from neighbours										
Receive labour from relatives										
Borrow labour from relatives										
Receive labour from neighbours										
Borrow labour from neighbours										
Other:										

8. Has the household provided resources or labour to other households in times of their illness/injury during the last year?

	Relatives			Neighbours			Others		
Given cash as a gift to (amount)									
	amount		Interest rate	amount		Interest rate	amount		Interest rate
Lend cash to (amount)									
	type	Quantity	Rs.[3]	type	Quantity	Rs.	type	Quantity	Rs.
Given resources[5] to									
Lend resources[5] to									
Given labour to (days)									
Lend labour to (days)									
Other									

List of codes

1. Who consulted/Prescribed by:

Actor	Code	Definition
Hospital	1	Public or private place for treating illnesses staffed with trained medical doctors and nurses, and with facilities for patients staying over night for treatment
General practitioner	2	Trained medical doctor with own consultation
Health post	3	Official post for distributing medicine and providing vaccinations, staffed with person having received basic training
Ayurvedic doctor	4	With formal training
Tibetan doctor (amchi)	5	With formal training
Village traditional healer providing mainly plant based treatment	6	Traditional non-spiritual healer not falling into any of the above categories
Jhakri	7	Mainly spiritual healer, may use some medicinal plants
Elder people in village with knowledge on illnesses and treatment	8	
Medical shop	9	Licensed shop where private owner has received some medical training
Other shops	10	
Mother	11	
Other family or relatives	12	Relatives are understood to be family members not part of the household
Self	13	
None	14	
Midwifes	15	
Other	19	

2. Treatment type:

Type	Code	Definition
Allopathic	21	Based on western standardised medicine, regardless of who prescribes
Ayurvedic	22	Based on ayurvedic principles, will only be prescribed by ayurvedic doctor. According to Arun, in the midhills many of the traditional healers base their practice on ayurveda to some extent, but respondents may not be aware of that
Tibetan medicine	23	Based on Tibetan medicine principles, will only be prescribed by Amchi
Other traditional healer, plant based	24	Treatment prescribed by traditional healer not covered by the above types and based on plants
Spiritual – jhakri	25	Healing with mainly spiritual elements, may include plants
Own collection of medicinal plants/other	26	Collection of plants or other not prescribed by any of the traditional healer types above (i.e. prescribed by family, self or elderly knowledgeable people)
Common sense	27	Actions such as putting on a scarf, drinking a cup of hot tea, etc.
None	28	Do nothing, wait till illness is over
Other	29	

3. Value of treatment:
Barter value, equivalent in rice or other for which price is known. The price in rs. must be specified.

4. From whom received labour/resources:

Type	Code	Comment
Relatives	41	Relatives are family not members of the household
Neighbours	42	Living close to the household (if interest is charged on money borrowed by neighbours these are considered money lenders – 5b)
saving clubs/groups	43	
Others	49	

5. Resources received

Type	Code	Definition
Agricultural produce	51	Products derived from cultivation, i.e. requiring intensive management, e.g. a meal
Livestock products	52	Products derived from domestic animals, e.g. meat for a meal
Forest products	53	Products collected in the forest, e.g. a basket of fodder

Other	59	

6. Assets sold

Type	Code	Comments
Livestock	61	Domestic animals
Agricultural produce	62	Products derived from cultivation, i.e. requiring intensive management
Land	63	
Jewellery	64	
Other	69	

7. Forest/alpine products sold

Type	Code	Comments
Firewood	71	Dead or green wood collected in the forest
Timber	72	Large or small size wood used for producing e.g. house, plough
Medicinal plants	73	Plants with medicinal value
Other	79	

Appendix C2 Traditional medicine and medicinal plant consumption 2

The following is to be read to the respondents:

The topics of the following questions are illness and treatment in your household. Your answers will be used to investigate how your household has responded to illnesses experienced within the last month or the last time anyone was ill but also some more general questions relating to treatment will be included.

All information given will be treated with confidentiality and will only be used for research purposes. You are therefore encouraged to speak as freely and honest as possible, as there are no right or wrong answers. All illnesses experienced are of equal importance, no matter if an illness was serious or not and no matter if treatment was carried out or not. Illness is anything where the person is no longer feeling completely healthy, therefore also include e.g. headaches, fever etc. It is therefore greatly appreciated if you try to be as detailed as possible in your answers.

ALL treatments, whether carried out at home or outside the household, are of equal importance, so we kindly ask you to include ALL the different actions that were taken to try to cure the illness.

You can withdraw from this research at any time during this session of filling in the questionnaire. Only a verbal statement from you, that you do no longer wish to participate is required.

I therefore wish to ask you to give a consent that you wish to participate and have understood the research purpose and your role in it?

Date	Site	Household code no	Household head name	Enumerators name

Part 1:

1) Which household members have been <u>ill but NOT confined to bed</u> and still able to work/play during the last month? (mild illness)

- If a household member has experienced more than one mild illness (e.g. cough, cold, headache etc.) in the last month, please fill out one row for each illness episode.

Illness episode id number	1.A Name	1.B Year born	1.C Sex *0: male 1: female*	1.D Education *(number of years completed)*	1.E What illness did he/she suffer from? *Write down symptoms of illness and only write down name of illness if the respondents provide this themselves.*	1.F How many days was he/she feeling unwell? *(number of days)*	1.G Where was advice sought about this illness episode before making decisions about treatment?[1] *More than one option possible. Please list each option in a separate row.*	1.H Did you follow their advice? *(yes/no)* *Please state answer in row matching options listed in question 2.G.*	1.I Has anyone in the household experienced the same illness before? *(yes/no)*	1.J Did someone have to stay home to take care of the ill person? *(yes/no)* *If yes – who[2]?*
2.1							First:			
							Second:			
							Third:			
2.2							First:			
							Second:			
							Third:			
2.3							First:			
							Second:			
							Third:			

2) Which household members have been <u>confined to bed</u> and/or not able to work/play due to illness during the last month? (severe illness)

- If a household member has experienced more than one such illness in the last month, please fill out one row for each illness episode.

Illness episode id number	2.A	2.B	2.C	2.D	2.E	2.F	2.G	2.H	2.I	2.J
	Name	Year born	Sex *0: male 1: female*	Education *(number of years completed)*	What illness did he/she suffer from? *Write down <u>symptoms</u> of illness and only write down name of illness if the respondents provide this themselves.*	How many days was he/she confined to bed? *(number of days)*	Where was advice sought about this illness episode before making decisions about treatment?[1] *More than one option possible. Please list each option in a separate row.*	Did you follow their advice? *(yes/no)* *Please state answer in row matching options listed in question 1.G.*	Has anyone in the household experienced the same illness before? *(yes/no)*	Did someone have to stay home to take care of the ill person? *(yes/no)* *If yes – who[2]?*
1.1							First:			
							Second:			
							Third:			
1.2							First:			
							Second:			
							Third:			
1.3							First:			
							Second:			
							Third:			

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3) Does anyone in the household suffer from a <u>chronic illness</u>?

- If a household member is experiencing more than one chronic illness, please fill out one row for each illness. A chronic illness is long-lasting (more than 3 months).

Illness episode id number	3.A	3.B	3.C	3.D	3.E	3.F	3.G	3.H	3.I	3.J
	Name	Year born	Sex *0: male* *1: female*	Education *(number of years completed)*	What illness does he/she suffer from? *Write down symptoms of illness and only write down name of illness if the respondents provide this themselves.*	What year did the illness start?	Where was advice sought about this illness before making decisions about treatment?[1] *More than one option possible. Please list each option in a separate row.*	Did you follow their advice? *(yes/no)* *Please state answer in row matching options listed in question 3.G.*	Is he/she still able to work/play? *(yes/no)*	Does someone have to stay home to take care of the ill person? *(yes/no)* *If yes – who[2]?*
3.1							First: Second: Third:			
3.2							First: Second: Third:			
3.3							First: Second: Third:			

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A. If no one was ill during the last month, how many months ago was last illness in your household? …………..months
(According to seriousness of illness episode please put it in table 1 or 2 and go to table 4.)

Part 2:

Please provide details about one illness episode at a time:
- *In this part of the questionnaire fill out 3 consecutive pages for each illness episode listed in tables above.*
- *Make sure to note the illness episode id number on top of the first page of a new illness episode.*
- *Make sure to fill out part two for each illness episode listed in part 1 before continuing to part 3*

Illness episode ID:_____

4) What actions were taken to cure the illness?
- *Make sure to remind respondents to include all actions – also those taking place only within the home.*
- *Actions include both self-treatment as well as visits at any type of health care provider. Use codes from code list [3] and [6].*
- *First list all action (fill out row). Then note the time each action were initiated and ended.*
- *If no treatment at all was initiated write a 0 in the first action column. Still fill in illness episode id number.*

Action[3,6]									
Time action was initiated (days after first symptoms experienced)									
Time action ended (days after first symptoms experienced)									

Note: The next two tables will be used to provide details about the actions taken in this table. Therefore make sure that the answers from the respondents matches answers given above.

5) *Please answer all questions in the table below the illness episode*

  - Answers to 5.C-5.H must be given for all answers given to 5.B.
  - Use table 4 to list treatments in 5.B.

5.A	5.B	5.C	5.D	5.E			5.F		5.G	5.H
Has self-treatment been carried out at any time during the illness? *(yes/no)* *If no - continue in 4.*	What type of self-treatment was carried out[3]? *List each treatment in a separate row – in sequence of use corresponding to table 4.*	Was any medicinal plants used for self-treatment? *(yes/no)* If no - go to question 5.G. *Please check that answer matches answers given in 4.*	How did you know which plant to use?[4]	Where did you get the medicinal plants from[5]? *If code = 122: also code place of collection: 1=forest, 2=field, 3=own garden, 9=other (please specify)* *Please list price (NRs). If code = 122 first try to get market price. If no success, try barter value and lastly try willingness to pay.*			How long was travelled to get the medicinal plants? *(minutes)* *Please also list cost of transportation, if any (NRs)*		Has a household member with the same illness previously been cured by this type of self-treatment? *(yes/no)*	How did the illness for which you sought treatment improve after the treatment? *Read the following categories to the respondent:* No improvement at all (0) Slight improvement (1) Almost cured (2) Completely cured (3)
				Code	Place of collection	Price	Minutes	Price		
	First:									
	Second:									
	Third:									

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6) Please list ALL visits to treatment providers during each episode of illness reported above

- If no treatment providers were visited continue with new illness on next page.
- First list all the different visits to treatment providers during the illness episode in column 6.A. Use table 4 to produce the list. Use one row for each visit – this also means one row for each visit at the same provider. Then fill in one complete row of further questions about each visit.

Illness episode id number	6.A Which treatment providers were visited?[6] *List each provider in a separate row – in sequence of use corresponding to table 4.*	6.B What type of treatment did the provider prescribe?[7]	6.C Did you follow the treatment as prescribed by the provider? *(yes/no)*	6.D Where is the treatment provider located?			6.E What were the costs of the treatment? *(NRs)*				6.F Has any member of the household been cured from the same illness from this provider before? *(yes/no)*	6.G Was medicinal plants part of this treatment? *(yes/no)*	6.H How did the illness for which you sought treatment improve after the treatment? *Read the following categories to the respondent:* No improvement at all (0) Slight improvement (1) Almost cured (2) Completely cured (3)
				Place name	Trans-portation time from your house *(minutes)*	Mode of trans-portation used[8]	Provider costs	Transport costs	Medicine costs	Other costs *(please also specify what kind of costs)*			

Part 3:

Note: The following questions are general questions and are not related to any specific illness episode.

7) Have you ever used medicinal plants for curing an illness?	Yes				No	
8) Does anyone <u>in the household</u> hold knowledge about medicinal plants for the treatment of illnesses?[9] *If code 101 or 102 please list name and family position (e.g. mother) of person(s) holding the knowledge. More than one option/person possible – list one code/person in each column.* *If code 109 – go to question 9.*	Person 1:		Person 2:		Person 3:	
9) From where has the knowledge been obtained?[10] *Please state answer for all persons listed in question 6 and in the corresponding column.*	From:		From:		From:	
10) Does anyone in the household <u>collect</u> medicinal plants for the treatment of illnesses? *(no = 0, yes = 1) If 1 please list name of person(s).* *More than one name may be listed.* *If no – go to question 13.*	Person 1:		Person 2:		Person 3:	
11) <u>Where</u> are the medicinal plants collected? *1 = forest* *2 = field* *3 = own garden/close to house* *4 = other – please specify* *More than one option possible – please list in sequence (one code in one column) with the place most often collected first.*	Place 1:	Place 2:		Place 3:		Place 4:
12) <u>How long</u> has your household been collecting medicinal plants for the treatment of illnesses? *1 = always* *2 = never*						

3 = x number of years – please state number of years	
13) How easy is it to find the medicinal plants today compared to 10 ears ago? *0 = the same, 1 = easier 2= harder*	
14) Does your household consume more, less or the same quantity of <u>medicine (of any kind)</u> as 10 years ago? *0 = same quantity, 1 = less medicine, 2 = more medicine*	
15) Does your household consume more, less or the same quantity of <u>medicinal plants</u> as 10 years ago? *0 = same quantity, 1 = less medicinal plants, 2 = more medicinal plants*	
16) Why? (related to question 14) *Write down answer as precise as possible.*	
17) Please list the different types of treatment providers that someone from your household has <u>ever</u> visited when being ill.[6] *<u>Read list of providers to respondent</u>. List codes of each of the providers the household has ever visited. Make sure to separate each code with /.*	

List of codes:

[1] People from whom advice is sought prior to treatment*

Actor	Code	Definition
Household members	21	Other people within the household who the caretaker asked for advice about the illness episode
Other relatives	22	Relatives not belonging to the household
Neighbours	23	People from village area to whom no one in the household are related
Others - please specify	29	

*This question only concerns discussion with non-medical providers who is not paid for advice (if anyone from the list of providers ([5]) is mentioned they should be noted in the table relating to treatments sought outside of home and not here).

[2] Family position of person staying home to take care of ill household member

Family position	Code	Definition
Father	61	
Mother	62	
Grandfather	63	
Grandmother	64	
Brother	65	
Sister	66	
Other – please specify	67	

[3] Type of self-treatment*

Type	Code	Definition
Allopathic medicine	31	Allopathic medicine available in household from previous illness episodes
Ayurvedic medicine	32	Ayurvedic medicine available in household from previous illness episodes
Tibetan medicine	33	Tibetan medicine available in household from previous illness episodes
Traditional medicine	34	Medicine from traditional healers available in household from previous illness episodes
Medicinal plants	36	Medicinal plants collected by household members or purchased from market/seller
Common sense	37	E.g. putting on warm clothes, resting, drinking water or hot tea etc.
Others - please specify	39	

*Note that if buying medicine in a shop for the specific episode of illness it is NOT considered self-treatment and shall not be coded as such but be coded in the table in question 6 relating to treatments sought outside of the home.

[4] Knowledge about medicinal plants obtained

Actor	Code	Definition
Household members	71	Members of the household other than caretaker asked in relation to specific illness episode
Other relatives	72	Relatives not belonging to household asked in relation to specific illness episode
Neighbours	73	People from village area asked in relation to specific illness episode
Own knowledge gained from family members	74	General already held knowledge passed on from other family members
Own knowledge gained from education	75	General already held knowledge obtained from formal course or education
Other - please specify	79	

[5] Medicinal plants gotten from

Place	Code	
Market/seller	121	
Self-collected	122	
Traditional healer/Amchi	125	
Other - please specify	129	

Treatment providers

Actor	Code	Definition
Hospital	41	Public place for treating illnesses based on allopathic (western standardised medicine) staffed with trained medical doctors and nurses and with facilities for patients staying over night for treatment.
Health post	42	Public post for distributing medicine and providing vaccinations, staffed with person having received basic training.
Public ayurvedic health care facility	43	Public health care facility offering treatment based on ayurvedic principles and staffed with persons having received some sort of training within ayurvedic health care
Private allopathic doctor	44	With formal training
Private ayurvedic doctor	45	With formal training
Tibetan/Amchi doctor	46	With formal training in Tibetan medicine
Traditional healer	47	Traditional non-spiritual healer not falling into any of the above categories. Providing mainly plant based treatment
Jhakri	48	Mainly spiritual healer, may use some medicinal plants
Allopathic medical shop	49	Licensed shop selling western standardised medicine and where owner has received some medical training
Ayurvedic medical shop	50	Licensed shop selling ayurvedic medicine and where owner has received some medical training
Other shop	51	
Other - please specify	59	

[7] Treatment type

Type	Code	Definition
Allopathic	81	Based on western standardised medicine, regardless of who prescribes
Ayurvedic	82	Based on ayurvedic principles, will only be prescribed by ayurvedic doctor.
Tibetan medicine	83	Based on Tibetan medicine principles, will only be prescribed by Amchi.
Other traditional healer, plant based	84	Treatment prescribed by traditional healer not covered by the above types and based on plants
Spiritual – jhakri	85	Healing with mainly spiritual elements, may include plants
Medicinal plants	86	Medicinal plants collected by household members or purchased from market/seller
Common sense	87	E.g. putting on warm clothes, resting, drinking water or hot tea etc.
No treatment	88	Provider did not suggest any treatment
Other – please specify	89	

[8] Mode of transportation

Type	Code	Definition
Walk	91	
Bus	92	
Car/truck	93	
Motorbike	94	
Bicycle	95	
Horseback	96	
Other – please specify	99	

[9] Knowledge held about medicinal plants

Type	Code	Definition
Yes – about medicinal plants for treating common illnesses	101	Knows plants that can be used for the treatment of common illnesses such as e.g. cold, headache, cough etc.
Yes – have extensive knowledge about medicinal plants used for both common and also some more rarely experienced illnesses	102	Knows a lot about many medicinal plants used for treating very different types of illnesses
No	109	

[10] Where knowledge has been obtained

Actor	Code	Definition
Family	111	Knowledge passed on from other family members (including diseased family members) – both inside and outside household.
Education	112	Knowledge obtained from formal course or education
Traditional healer	113	Knowledge passed on from traditional healer
Other - please specify	119	

Appendix C3 Law enforcement in community forestry

Objective:

To record the involvement of the sampled households in various illegal forestry activities, value of the product gained illegally, and the types of sanctioned/penalties experienced by them based upon the types of illegal activities.

HH identification	Name:	Address:	HH ID:
Enumerator name:		Interview date:	

1. Is your HH is the member of CFUGs?
   a.   Yes [   ]   b. No [   ]
   If yes, could you please mention the name of FUG(s)?

   a. _____   b._____   c._____
2. Could you please indicate approx. share of the forest product that your HH collect from various forest/land type?

Forest/Land type	**Approx. share** (%)
Community forests	
Community managed but not formally handed over to the community	
Government managed forest	
Total	100

Note: If the HH collects no share of the forest product from CF or community managed forests go to question number 17.

3. Are any members from your household are in forest users committee?
   a.   Yes [   ]   b. No [   ]

4. How do you evaluate the performance of users committee?
   a.   Highly satisfactory [   ]   b. Satisfactory   [   ]   c. Neutral [   ] d. Not satisfied [   ]

5. What is the level of participation of your household in FUG activities?
   a.   Strong participation [   ]   b. Occasional participation [   ] c. Not very often [   ]
   d.   Hardly ever [   ]

6. Do the executive committee members and other general members hear your voice while formulating the rules of CFUG?
   a.   Yes [   ]   b. No [   ]
7. How forest products are distributed?
   a.   Family size/equity [   ]   b. Equality [   ]

8. Are you satisfied with the existing distribution process?
   a.   Yes [   ]   b. No [   ]

   8.1 If no why?...

9. What is the trend of the use of the forest product by your HH at present than before the implementation of CF?
   a.   Increased [   ]   b. Decreased [   ]   c. Same [   ]

10. Could you please state whether or not the existing rules of CFUG impose any kind of restriction on using forest resources:

	Yes =1, No = 0
1. Restriction on the collection of fuelwood	
2. Restriction on the collection of pole or timber	
3. Restriction on the collection of fodder grasses/ground grasses	
4. Restriction on the collection of thatching/bedding grasses	
5. Restriction on the collection of NTFPs/medicinal plants	
6. Restriction on quarrying/mining	
7.Restriction on grazing	
8. Restriction on the collection of agricultural implements like plough	
9. Restriction on the preparation of coal	
10. Any other (specify)	

11. Please state whether or not following stated activities occur in Community Forests or Community Managed Forest in your area.

	Yes =1, No = 0
1. Illegal collection of fuelwood	
2. Illegal collection of pole or timber	
3. Illegal collection of fodder grasses/ground grasses	
4. Illegal collection of thatching/bedding grasses	
5. Illegal collection of NTFPs/medicinal plants	
6. Illegal quarrying/mining activities	
7. Grazing in the restricted part of the forests	
8. Illegal collection of agricultural implements like plough	
9. Preparation of coal illegally	
11. Do not pay the fee as directed by the CFUGC	
10 Any other (specify)	

12. In your opinion, who generally violates the rules? Please rank them based upon the frequency of their involvement.

Stakeholder group	Rank 1	Rank 2	Rank 3
1. CFUG executive committee members			
2. Rich and elite users			
3. Women			
4. Poor and *Dalits*			
5. Outsiders			
6. Any other (Specify)			

13. Please mention the quantity and the value of the forest product that your household collected illegally from community/community managed forests in the last five years.

Illegally collected forest products/activities	Unit	Approx. quantity	Approx. gross value (Rs.)
1. Fuelwood collection			
2. Pole or timber collection			
3. Fodder grasses/ground grasses collection			
4. Thatching/bedding grasses collection			
5. NTFPs/medicinal plants collection			
6. Quarrying/mining activities			
7. Grazing in the restricted part of the forests			
8. Collection of agricultural implements like plough			
9. Preparation of coal			
10. Any other (specify)			

14. Please mention the types of sanctions/penalties that your household experienced and the value paid for that till now while violating the rules of CFUGs.

Illegally collected forest products/activities	Sanction/penalties*	Paid gross value (Rs.)
1. Fuelwood collection		
2. Timber collection /Pole collection		
3. Fodder grasses/ground grasses collection		
4. Thatching/bedding grasses collection		
5. NTFPs/medicinal plants collection		
6. Quarrying/mining activities		
7. Grazing in the restricted part of the forests		
8. Collection of agricultural implements like plough		
9. Preparation of coal		
11. Do not pay the fee as directed by the CFUGC		
12. Encroachment		
13. Poaching		
14. Mis-use of the forest fund		
10.Any other (specify)		

*1. Nothing happens 2. Warn, aware 3. Warn aware and seized collected products 4. Warn, aware and fine 5. Fine and seized collected products 6. Exclusion from the CFUG 7. Reporting to DFO 8. Any other (specify).....................................

15. Could you please rank the major three reasons of harvesting the forest products illegally from community forests?

Reasons of occurrence of illegal activities	Rank 1	Rank 2	Rank 3
1.Rules are biased /Inequitable			
2. Limited resource in their private land			
3. High fee for the forest products			
4.Committee not being accountable towards the users			
5. High entry/permission/membership fee			
6. Forest not opened on the suitable time period of the users			
7. Any other (specify)			

16. Do you think that CFUGC register all sorts of illegal activities occurred in CF?

        a. Yes [   ]   b. No [   ]   c. Don't Know [   ]

Appendix C4 Shocks

Shocks/Risk survey

Objective

To analyse the role of forest in reducing risks/shocks faced by the forest user households.

Research questions/hypothesis
- What are the types of shocks faced by the rural household? How serious are they?
  (Poor households are more vulnerable to idiosyncratic and common shocks).

- How forest support in reducing the income shocks faced by the rural households?
  (Forest resources help in varieties of ways to avoid or mitigate the income shocks by the rural households).

_____

Questionnaire

A. negative shocks

Please think back and tell us about the following during the last five years.

1. In the last five years has your household suffered a substantial (unexpected) shortage/loss of agricultural product?

Year	Types of problem (Code, 0= normal,1= moderate, 2= severe)	Causes of shortage/loss (Code, 1= drought, 2= too much rain and land slides, 3= pest and diseases, 4 = frost and hailstorm, 5= any other (specify)			How do you cope? 1= reduced consumption, 2= sold livestock, 3= sold land and other asset, 4= do extra casual labour work, 5= harvest, use or sell more forest products, 6= get loan from money lender, credit association, bank etc, 7= spend cash savings, 8= assistance from others (friends, relatives NGOs), 9 = any other (specify)		
		Rank 1	Rank 2	Rank 3	Rank 1	Rank 2	Rank 3

2. In the last five years has your household suffered a substantial loss of livestock?

Year	Types of problem (Code, 0= normal,1= moderate,	Causes of loss (Code,1= disabled due to disease/accident, 2= death due to disease, 3= death due to wildlife attack, 4= death due to severe	How do you cope? 1= reduced consumption, 2= sold livestock, 3= sold land and other asset, 4= do extra casual labour work, 5= harvest, use or sell more forest products, 6= get loan from money lender, credit

	2= severe)	weather condition, 5= death due to accident, 6= theft, 7 = any other (specify)			association, bank etc, 7= spend cash savings, 8= assistance from others (friends, relatives NGOs), 9 = any other (specify)		
		Rank 1	Rank 2	Rank 3	Rank 1	Rank 2	Rank 3

3.In the last five years has your household suffered any important loss of labour?

Year	Types of problem (Code, 0= normal,1= moderate, 2= severe)	Causes of loss Code,1=death of HH member, 2= disabling a HH member due to accident/disaster, 3=abduction of household member, 4= daughter leaving due to marriage, 5= son leaving (separate), 6= divorce, 7 = any other (specify)			How do you cope? 1= reduced consumption, 2= sold livestock, 3= sold land and other asset, 4= do extra casual labour work, 5= harvest, use or sell more forest products, 6= get loan from money lender, credit association, bank etc, 7= spend cash savings, 8= assistance from others (friends, relatives NGOs), 9 = any other (specify)		
		Rank 1	Rank 2	Rank 3	Rank 1	Rank 2	Rank 3

4. In the last five years has your household suffered any loss of land or any other assets?

Year	Types of problem (Code, 0= normal,1= moderate, 2= severe)	Causes of loss (Code,1= land slide/flood, 2= fire 3= dispute, 4= transfer to other family members, 5 = expropriation due to political reason, 6 = any other (specify)			How do you cope? 1= reduced consumption, 2= sold livestock, 3= sold land and other asset, 4= do extra casual labour work, 5= harvest, use or sell more forest products, 6= get loan from money lender, credit association, bank etc, 7= spend cash savings, 8= assistance from others (friends, relatives NGOs), 9 = any other (specify)		
		Rank 1	Rank 2	Rank 3	Rank 1	Rank 2	Rank 3

5. In the last five years has your household suffered considerable loss of cash income?

Year	Types of problem (Code, 0= normal,1= moderate, 2= severe)	Causes of loss Code: 1= retired from the job, 2 = low crop price, 3= low wage, 4= lost wage employment, 5= lost due to costly social events (like marriage) 6= any other	How do you cope? 1= reduced consumption, 2= sold livestock, 3= sold land and other asset, 4= do extra casual labour work, 5= harvest, use or sell more forest products, 6= get loan from money lender, credit association, bank etc, 7= spend cash savings, 8= assistance from others (friends,

		Rank 1	Rank 2	Rank 3	Rank 1	Rank 2	Rank 3

6. How much does your received in kind support/help from any other households/relatives or institutions to cope with any of the crises mentioned above?

Year	Kind of help Code, 1= cash (soft loan) 2= labour, 3 material	Help received from Code; 1= relatives/friends 2= neighbour, 3= local CBOs 4= government, 5= any other (specify)	Estimated monetary value of help (Rs.)

B. Positive shocks

1. In the last five years, mention the three best years when your household collected unexpected (larger) income than that of the normal one.

Year	Income from Code, 1 = high crop price, 2= high crop production,3 = high income from livestock, 4=high wage income, 5= remittances,6= new assets (inheritances, gifts) 7= any other (specify)	How did your household use that income? 1= saving, 2= increasing household consumption, 3= selling, 4=investment, 5=any other (specify)	Extent of use of forest products in these good years Code, 1= low, 2= as usual, 3=high

C. Ex ante risks/shocks

1. In general, for how many months do you have enough food for your family from your own   production?
    _____Months

2. What could be the various livelihood strategies you will adopt to cope with the possible ex-ante risk/shocks?

Livelihood sources/strategies	Probable level of adoption		
	High	Medium	Low
Use of forests, agriculture and livestock's			
• Increased use of forest products			
• Increased use of environmental products			
• Intensive use/involve in agricultural work			
• Adopting horticulture			
• Raring improved livestock			
• Any other (specify)			
Wage employment/service/business			
• Increased the number of days of wage labour			
• Adopting skilled labour work			
• Borrow money/material from neighbours			
• Services outside Nepal			
• Services within Nepal			
• Business			
Other sources			
• Involved in political activities			
• Reduce natural calamities through improved terrace, plantation etc.			
• Depends/involve on other donors, I/NGOs			
• Any other (specify			

Thank you for your support

Appendix C5 Climate change, gender & livelihood trajectories

Name of Table on Database

Table 1

HH id *(same as for socio-economic survey)*	Site *(Lete, Kunjo, Henja, Kankali, Gorkha)*	enumerator	Date of interview	Entered by	Entered date	Checked by	Checked date		

INTRODUCTION

When was HH established? (year):_____

Where was HH established? Here __, not here but in this VDC_____, not here but in this district____, in another district_____

If HH established elsewhere, how long has HH lived here?_____

If coming from elsewhere, where?_____

Physical capital
A: ASSETS

	Now	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
1. Physical capital				
1.1 No of houses				
1.2 Is/was primary house: *1. Owned and completely paid for, 2. owned with a mortgage, 3. rented, 4. given in exchange for services, 5. squatter, 6. Other, specify*				
1.3 Type of house (primary house): *1: brick or blocks, 2: wood, 3: mud, 4: Mud and stone, 5.Bamboo and Brushwood,6: others*				
1.4 Type of roof (primary house): *1: tile., 2: tin, 3: stone, 4: wood, 5: thatch, 5: RCC*				
1.5 Mention 3 most valuable assets the HH has/had (excluding house, land, livestock)				
1.6 Water source *(1: tap in house, 2: tap in village, 3: natural spring, 4: well)*				
1.7 Irrigation access *(y/n)*				
Hum_c_s **2. Human capital** *(persons above 17 are adults, above 60 are seniors)*	Now	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
2.1 Adult male HH members, *no.*				
2.2 Adults female HH members, *no.*				
2.3 Male children HH members, *no.*				
2.4 Female children HH members, *no.*				
2.5 Senior non-working HH members, *no.*				
2.6 Skilled HH members *(earning above agricultural wage), no. and skill*				
2.7 Literate adult males, *no.*				
2.8 Literate adult females, *no.*				
2.9 Male children in primary school, *no.*				
2.10 Female children in primary school,				

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	Now	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
no.				
2.11 Male children in Secondary school, *no.*				
2.12 Female children in secondary school, *no.*				
2.13 Male children in higher education, *no.*				
2.14 Female children in higher education, *no.*				
2.15 Males that have finished primary school, *no.*				
2.16 Females that have finished primary school, *no.*				
2.17 Males that have finished secondary school, *no.*				
2.18 Females that have finished secondary school, *no.*				
2.19 Chronically sick HH members *(Requiring continuous medicine/ treatment and/or with reduced working capacity), no.*				
2.20 HH head sex *(M/F)*				
2.21 If HH head is/was female, why: *1: Never married, 2: Divorced, 3: husband is dead, 4: husband migrated, 5: other, specify*				
2.22 Male adults migrated for work, *no.*				
2.23 Female adults migrated for work, *no.*				

Hum_c_ss
2.24 Of HH members living in village, how many are: *Outside employment codes - 1: agricultural wage labour (unskilled) ,2: skilled wage work, like carpentry,3: teacher, 4: job in govt. office, 5: job in business, 6: other*

	No.	code	No.	Code	No.	code	No.	code
a. Men employed outside HH								
b. Women employed outside HH								
c. Boys employed outside HH								
d. Girls employed outside HH								

Natural Capital2 **3. Natural capital**	Now	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
3.1 Land		More/less/same compared to Now		
Khet owned				
Bari owned				
Khet rented in				
Bari rented in				
Khet rented out				
Bari rented out				
Natural Capital1 3.2 Livestock		More/less/same compared to Now		
a. Number of adult cows and buffaloes				
b. Number of adult sheep and goats				
3.3 Months of sufficient food production from own land (including land rented in)				
Financial Capital2 **4 Financial capital**				

Name of Table on Database

	Now	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
4.1 How much savings did you have in the past compared to now: 5: Much more (Double or more), 4: More (up to double), 3: same,2: less (More than half of to days saving), 1: much less (less than half of To days saving), 0: Nothing				
4.2 How much debt did you have in the past compared to now: 5: Much more (Double or more), 4: More (up to double), 3: same,2: less (between same and more than half of Todays debt), 1: much less (less than half of todays debt), 0: Nothing				
financial Capital1 4.2 Taken loan trough formal credit (yes/no)				
4.3 How many savings groups was HH/HH members member of:				
5. Social capital	Now	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
Types of groups:1:Farmers' group, 2:Cooperative, 3: Traders' association/ business group, 4: Professional association, 5 :Trade union, 6: Credit/finance group, 7: Water/waste group, 8 :Neighbourhood/village association , 9: Civic group , 10 :NGO, 11: Religious group, 12 :Cultural association, 13: Political group, 14: Youth group, 15: Women's group, 16: Parent group, 17: School committee, 18: Health committee:, 19: Sports group, 20: Forest groups, 21: Other				
5.1 What groups were HH-members part of? **social capital1**				
5.2What groups were HH males part of Executive bodies? **Social Capital2**				
5.3 What groups were HH females parts of Executive bodies? **Social Capital3**				
Social Capital4 5.4 How would you rate the following (*1: very low, 2: low, 3: average, 4: high, 5: very high*)				
a. the spirit of participation in community affairs in this community?				
b. Community members trustworthiness in general				
g. Community members trustworthiness in related to borrowing and lending money				
d. Community members' willingness to help each other in general in case of shocks, like death of father				
6. Compared to the community in general, is/was your HH rich, medium or poor compared to others in the community at different times? *(tick)*	Rich __ Medium __ Poor __	Rich __ Medium __ Poor __	Rich __ Medium __ Poor __	Rich __ Medium __ Poor __

Name of Table on Database

B: INCOME

	2009, last recording year	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
Income				
1. Income, per year				
compared to reference year: 5: Much more (Double or more), 4: More (up to double), 3: same, 2: less (More than half), 1: much less (less than half), 0: Nothing, N: new, not in reference year, try to estimate amount – remember unit				
1.1 Total crop production				
1.2 Cash income from crop production				
1.3 Crop production consumed or given as gifts				
1.4 Cash income from livestock production				
1.5 Livestock production consumed or given as gifts				
1.6 Cash income from forest products				
1.7 Forest products consumed or given as gifts				
1.8 HH income from wages				
1.9 HH income from salaries				
1.10 HH income from business				
1.11 HH income from forest products				
1.12 Remittances from HH members working outside village in Nepal or India				
1.13 Remittances from HH members working outside village in other country, not India				
2. Livelihood strategies	2009, last recording year	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
2.1 What were the main different crops grown **Livstrategy1**				
Livstrategy2				
2.2 Most important cash income source *(assign to each: 1: very important, 2: important, 3: of little importance, 4: not undertaken)*				
a. Agriculture				
b. Livestock				
c. Forest products				
d. Business				
e. Salary				
f. Wage labour				
g. Remittances				
h. other: _____				
i.				
j				
	2009, last recording year	Year 2001	Year 1990	Year 1980, if possible (depends on when HH

Name of Table on Database

	2009, last recording year		Year 2001		Year 1990		Year 1980, if possible (depends on when HH was established)	
expenditure 3. Expenditures							was established)	
What 3 things does/did the HH spend most money on? 1: food, 2: medicine/hospital, 3: school, 4: other specify								

C: SHOCKS AND COPING STRATEGIES

1. When did the HH experience the following shocks, what caused them, what was done to cope with them and how severe were the shocks?

(1: normal, 2: moderate, 3: severe) Coping codes: 1: spent savings, 2: sold assets, 3: sold forest products, 4: did more wage labour, 5: Reduce consumption, 6: take loan from money lenders, 7: take loan from bank/cooperatives, 8: Take assistance from relatives GoN/CBOs/ NGOs 9: did nothing,

	Now to 2001					Between 2001 and 1990					Before 1990 to year1980, if possible (depends on when HH was established)				
	y/n	cau^1	Severity^3	1st coping^2	2nd coping^2	y/n	cau^1	Severity^3	1st coping^2	2nd coping^2	y/n	cau^1	Severity^3	1st coping^2	2nd coping^2
Shock1 a. Unexpected/unusual shortage or loss in **crop output** ^{1} *Cause codes: 1= drought, 2= too much rain and land slides, 3= pest and diseases, 4 = frost and hailstorm, 5= any other (specify)*															
a. answer															
b. Unexpected/unusual shortage or loss in **livestock output** ^{1} *Cause codes: 1= livestock disabled due to disease/accident, 2= death due to disease, 3= death due to wildlife attack, 4= death due to severe weather condition, 5= death due to accident, 6= theft, 7 = any other (specify)*															
b. answer															
c. Unexpected/unusual shortage in **forest products** collected ^{1} *Cause codes: 1=controlled access to forest, 2= forest has degraded so there are less products, 3= HH has not enough labour to collect forest products, ,4= difficult to pay product charge*															
c. answer															
d. Unexpected/unusual shortage or loss of **HH labour** ^{1} *Cause codes: 1= death of HH member, 2= disabling a HH member due to accident/ disaster, 3= abduction of household member, 4= daughter leaving due to marriage, 5= son leaving (separate), 6= divorce, 7 = any other (specify)*															
d. answer															
e. Having less **cultivable land** than previously ^{1} *Cause codes: 1= land slide/flood, 2= dispute,3= transfer to other family members, 4 = expropriation due to political reason, 5:any other (specify)*															
e. answer															
f. Unexpected/unusual shortage or loss in **cash income** ^{1} *Cause code: 1= retired from the job, 2 = low crop price, 3= low wage, 4= lost wage employment, 5= lost due to costly social events (like marriage) 6= any other (specify)*															
f. answer															
g. Unexpected/unusual damage to or loss of **house** and **capital assets** (plough, bicycle, bus/car/tractor, green house, shop/stall, stable/shed ++ other examples) ^{1} *Cause codes: 1= rain/snow/hail, 2= wind, 3= theft/sabotage, 4= Fire, 5=Landslide/flood*															
g. answer															

	Now to 2001					Between 2001 and 1990					Before 1990 to year1980, if possible (depends on when HH was established)				
	y/n	cau[1]	Severity[3]	1st coping[2]	2nd coping[2]	y/n	cau[1]	Severity[3]	1st coping[2]	2nd coping[2]	y/n	cau[1]	Severity[3]	1st coping[2]	2nd coping[2]
Shock2 h. **Illness** requiring expensive treatment:															
(i) Adult male(s)															
(ii) Adult female(s)															
(iii) Male children,															
(iv) Female children															
(v) Seniors															

2. In addition to the above times of shocks, when did the HH incur large expenditures and how was money raised for these?

	Now to 2001		Between 2001 and 1990		Before 1990 to year 1980, if possible (depends on when HH was established)	
expenssource	y/n	Funds from[4]	y/n	Funds from[4]	y/n	Funds from[4]
a. Wedding						
b. funeral						
c. buying land						
d. building house						
e. starting business						
f. buying livestock						
g. sending HH member abroad to work						
h. education of children						
i. other:						

Incomused	y/n	From[5]	Used for[6]	y/n	From[5]	Used for[6]	y/n	From[5]	Used for[6]
3. Did the HH receive unexpected or sudden incomes in the past? Where did they come from and what were they used for?									

[4]*Funds for large expenditure from: 1: savings, 2: bank loan, 3: savings group loan, 4: inheritance, 5: gift, 6: normal income , 7: other*

[5]*Unexpected cash or kind income from: 1 = high crop price, 2= high crop production, 3 = high income from livestock, 4=high wage income, 5=high remittances, 6= inheritance, 7= gift, 8= any other (specify)*

[6]*: Unexpected income used for: 1= savings, 2: expenses such as those mentioned in C-2, 3: education*

D: FOREST PRODUCT USE

1. Compared to the reference year 2009, how much did you collect in the forest in the past

Forest Product used1	2009, last recording year	Year 2001	Year 1990	Year 1980 , if possible (depends on when HH was established)
compared to2009: 5: Much more (Double or more), 4: More (up to double), 3: same, 2: less (More than half), 1: much less (less than half), 0: Nothing, N: not collected in ref year				
1.1 Timber				

1.2 Firewood				
1.3 Charcoal				
1.4 Poles				
1.5 Tree fodder				
1.6 Ground grass				
1.7 Bamboo				
1.8 Wild foods				
1.9 Medicinal plants				
1.10 Wood for tools (ploughs etc.)				

2. Compared to the reference year 2009, how much income did you get from processed forest products in the past?

Forest Product used2	2009, last recording year	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
compared to 2009 year: 5: Much more (Double or more), 4: More (up to double), 3: same, 2: less (More than half), 1: much less (less than half), 0: Nothing, N: not in ref year				
a. Furniture				
b. Agricultural implements				
c. Other wooden tools				
d. Baskets				
e. other1				
f. other2				

GENDER RELATIONS

gendrela/Agricultural	2009, last recording year	Year 2001	Year 1990	Year 1980, if possible (depends on when HH was established)
1.1 Who primarily decides what crops to cultivate on common HH land? (M/F/both)				
1.2 Who primarily decides where to seek health advice and treatment? (M/F/both)				
1.3 Who primarily decides how to invest the surplus income and savings (M/F/both)?				
1.4 Who **mostly** does the listed tasks (more than on option is possible, for example if men and women do equally): *1: Men, 2: Women, 3: Boys, 4: Girls, 5: Hired labour, 6: other (specify in cell)*				
Agriculture				
a. Preparing seedlings				
b. Preparing land				
c. maintaining irrigation				
d. Sowing/transplanting seedlings				
e. Weeding				
f. Harvesting				
g. Storing seeds				
h. Processing harvest				
i. Marketing harvest				
j. Looking after animals				
k. Selling animal products				
gender/Forest Forest				
a. Firewood collection				
b. Forest fodder collection				
c. Leaf litter (for bedding and manure)				
d. Timber harvest				
f. Bamboo harvest				

g. mushroom collection				
h. medicinal plant collection				
i. wild food collection				
j. Processing forest products				
k. Selling forest products				
gender/Social reproduction **Social reproduction**				
a. Cooking				
b. Cleaning				
c. Washing clothes				
d. Childcare				
e. House maintenance				
f. Attend CFUG meeting				
g. Attend village meeting				
h. Alcohol production				
i.. Fetch water				
j. Buy food				
k. Buy clothes				
Other_____				
Other_____				
gender/business Business				
a. run petty business				
b. run settled business				

Petty business is sale of food or other items without a fixed stall. Settled business …How to explain? The point is to know who do the more remunerative business types.

F: CLIMATE

Climate change/winter rain or snow

1. Winter rain/snow

a) Considering the winter rain/snow now as compared to earlier, do you find that: *(tick)*	b) When did you start to perceive the change? *(year)*	c) What is the impact of this change? *1: crop yield decline* *2: crop yield increase* *3: more landslides* *4. less landslides* *5: more human disease* *6: less human disease* *7: more animal disease* *8: less animal disease* *9: no impact* *10: emotional/psychological impact - specify* *11: other, specify*	d) What do you do in reaction to the change? *1: plant crops earlier* *2: plant crops later* *3: irrigate crops* *4: change crops* *5: use more fertiliser and/or pesticides* *6: shift to other income generating activities* *7: Did nothing* *8:other, specify*	e) What do you think is the reason for the change? *1: normal weather cycle* *2: climate change* *3: pollution by factories* *4: pollution by local peoples' use of pesticides* *5: divine control* *6: other, specify*
	Yes/no/DK			
The amount of winter rain/snow has increased				
The amount of winter rain/snow has decreased				
The winter rain/snow falls at a more inconvenient time				
The winter rain/snow has not changed				
The amount of winter rain/snow is more variable				
Other changes to the winter rains _____				

Name of Table on Database

_ _____ __ _____ _					

Climate change/monsoon

2. Monsoon rain

a) Considering the monsoon rain now as compared to earlier, do you find that: *(tick)*	b) When did you start to perceive the change? *(year)*	c) What is the impact of this change? *1: crop yield decline* *2: crop yield increase* *3: more landslides* *4. less landslides* *5: more human disease* *6: less human disease* *7: more animal disease* *8: less animal disease* *9: no impact* *10:emotional/psychological impact - specify* *11: other, specify*	d) What do you do in reaction to the change? *1: plant crops earlier* *2: plant crops later* *3: irrigate crops* *4: change crops* *5: use more fertiliser and/or pesticides* *6: shift to other income generating activities* *7:Did nothing* *8:other, specify*	e) What do you think is the reason for the change? *1: normal weather cycle* *2: climate change* *3: pollution by factories* *4: pollution by local peoples' use of pesticides* *5: divine control* *6: other, specify*
	Yes/no/DK				
The monsoon rains start earlier					
The monsoon rains start later					
The start of the monsoon rains is unpredictable					
The amount of monsoon rains has increased					
The amount of monsoon rains has decreased					
The amount of monsoon rains is unpredictable					
There has been no change in the monsoon rains					
Other changes to the monsoon rains? _____ _____ _____ _____ _____ _____					

climate change/temperature

3. Temperatures

a) Considering the temperatures now as compared to earlier, do you find that: *(tick)*	b) When did you start to perceive the change? *(year)*	c) What is the impact of this change? *1: crop yield decline* *2: crop yield increase* *3: more landslides* *4. less landslides* *5: more human disease* *6: less human disease* *7: more animal disease* *8: less animal disease* *9: no impact* *10:emotional/psychological impact - specify*	d) What do you do in reaction to the change? *1: plant crops earlier* *2: plant crops later* *3: irrigate crops* *4: change crops* *5: use more fertiliser and/or pesticides* *6: shift to other income generating*	e) What do you think is the reason for the change? *1: normal weather cycle* *2: climate change* *3: pollution by factories* *4: pollution by local peoples' use of pesticides*

Name of Table on Database

	Yes/no/ DK		*11: other, specify* 194	*activities* *7:did nothing* *8:other, specify*	*5: divine control* *6: other, specify*
Summer temperatures generally have increased					
Summer temperature generally have decreased					
The general trend is unchanged but here are greater extremes in summer temperatures					
Winter temperatures generally have increased					
Winter temperatures generally have decreased					
The general trend is unchanged but here are greater extremes in winter temperatures					
There is greater difference between winter and summer temperatures					
The warm weather starts earlier					
The warm weather starts later					
The beginning of the warm weather is unpredictable					
The cold weather starts earlier					
The cold weather starts later					
The beginning of the cold weather is unpredictable					
Other changes to temperatures? _____ _____ _____ _____ _____ _____					

cli_inform

4. Where do you get information about climate and climate change and how to prepare/cope in case of climate variability or extremes?

Information source	Information received *(tick)*	Information used for planning of own work *(yes/no)*
Media		
Education		
Family		
Friends		
Own observations		
Meteorological station		
NGOs		
Outside experts		
Villagers		

Appendix C6 Wellbeing dynamics

SURVEY OF WEALTH DYNAMICS IN RURAL NEPAL

QUESTIONNAIRE INFORMATION:

1. Name of head of household		
2. Household code		
3. Village		CODE:
4. District		CODE:
5. Date of interview (dd/mm/year)		
6. Interviewer's name		CODE:
7. Name and PID of 1st respondent		PID:
8. Name and PID of 2nd respondent		PID:
9. Name and PID of 3rd respondent		PID:
10. Religion of head		
11. Ethnic language used in the household		
12. Was this household formed after 2058? (NO...0 • 14, YES...1)		
13. Which year was the household formed?		
14. Household interviewed by ComForM in:	2063: NO...0, YES...1	2066: NO...0, YES...1

PIC=Personal Identification Code (page 4)

DATA ENTRY AND QUALITY ASSURANCE INFORMATION:

1. Date of questionnaire review* (dd/mm/year)		
2. Name of questionnaire reviewer*		CODE:
3. Questionnaire complete (NO...0, YES...1)		
4. Date of correction (dd/mm/year)		
5. Verification by reviewer (NO...0, YES...1)		
6. Date of data entry (dd/mm/year)		
7. Name of data entry person		CODE:
8. Date of data entry review* (dd/mm/year)		
9. Name of data entry reviewer*		CODE:
10. Data entry complete (NO...0, YES...1)		
11. Date of correction (dd/mm/year)		CODE:
12. Verification by reviewer (NO...0, YES...1)		

*Reviewer (cannot be the interviewer) quality assures the questionnaire and data entry for errors, consistency and missing observations.

Introduction

My name is [INTERVIEWER] and I represent a research project that aim to understand causes for changes in household wealth and why people move in and out of poverty. We do that by asking about your own perception of how (and why) your wealth has changed since 2058, and later by asking more specific questions about your wealth possessions in 2058 (=2001 Western calendar), 2063 (=2006 Western calendar) and 2068 (=2011 Western calendar). With the help of this survey we hope to better understand how policies best can be framed to help reduce poverty. Your help is very important for us.

This project is supported by IOF, Danida, The Danish Ministry of Science, and Copenhagen University. The reason you have been selected is that you have previously been interviewed by the ComForM project regarding income. We are closely cooperating with the ComForM project and they will also benefit from the study we are doing now. However, we are primarily interested in changes in household wealth, not income.

We are going to talk about your wealth status in three periods: 2058, 2063, and 2068. 2058 refers to the year the king was assassinated. 2063 refers to the year when the government and the maoist negotiated a ceasefire (2063 was also the year that households in Kankali, Hemja and Mustang were first interviewed by the ComForM project).

Is it clear to you which years we are referring to or do you need additional clarification?

1a. First question relates to the events that have affected your economic conditions since 2058.

Between 2058 and 2062[*], did your economic condition.... IMPROVE...1 , REMAIN THE SAME...2, BECOME WORSE...3	
Between 2063 and 2068[*], did your economic condition.... IMPROVE...1, REMAIN THE SAME...2, BECOME WORSE...3	

[*] The periods 2058-2062 (= 2058, 2059, 2060, 2061, and 2062); 2063-2068 (= 2063, 2064, 2065, 2066, 2067, and 2068)

IF ECONOMIC CONDITION REMAIN SAME=2 IN 2058-2062 AND 2063-2068 SKIP TABLE 1B.

1b. In [PERIOD], please tell me about the events that occurred and things that your household members did that made conditions IMPROVE/BECOME WORSE.

REASONS	CODES +/- (TABLE 1)	ORDER OF EVENT*	PERIOD	
			2058-2062	2063-2068

*The sequence of events does not have to appear chronologically. ORDER OF EVENTS will clarify sequence.

2. Second question relates to your perception of household wealth

	2068	2063	2058
How would you regard your family's wealth status in [YEAR]: **Poor**, in the sense that you were not able to fulfill basic family needs *(such as food, clothing, etc.)*...............1 **Neither poor nor well-off**, in the sense that the risk of falling into poverty (i.e. not able to fulfill basic family needs) was significant...................................2 **Well-off**, in the sense that income was more or less stable and the risk of falling into poverty was small...............3			

3. Third question is a hypothetical question about essential needs of your family.

	2068	2063	2058
Taking into consideration your families living condition in [YEAR], which expenditure **would** have been **the most essential and very first** one to make if you had experienced a gradual increase in income? [USE THE CODES IN THE TABLE 2] [YOU SHOULD AWAIT THE ANSWER WITHOUT HELPING THE RESPONDENT – FOR HELP LIST THE OPTIONS IN THE CODE TABLE IN THAT ORDER]			

		2068	2063	2058
4. Please rank income types by importance in maintaining/ improving household wealth in [YEAR]. Start with the most important first. [MINIMUM 2 RANKS] [1=MOST IMPORTANT] [INCOMES WITH EQUAL IMPORTANCE ARE GIVEN THE SAME RANK]	**Income type**	**Rank**	**Rank**	**Rank**
	Agriculture			
	Livestock			
	Forest exploitation			
	Environmental exploitation			
	Casual farm wage work			
	Unskilled non-farm wage work, private sector			
	Unskilled non-farm wage work, public sector			
	Skilled wage work, private sector			
	Skilled wage work, public sector			
	Migrant wage employment, India			
	Migrant wage employment, other countries			
	Remittances (from relatives, friends, etc.)			
	Pension			
	Other government (or NGO) assistance			
	Small-scale business			
	Larger-scale business			
	Other, specify:			

MODULE 1: HOUSEHOLD ROOSTER

IDENTIFICATION CODE	1. Names of current household members[1]. [MAKE A COMPLETE LIST OF ALL CONCERNED, THEN FILL IN THE REST OF THE QUESTIONS]	2. Sex MALE....1 FEMALE..2	3. How old is [NAME]? [IF LESS THAN ONE YEAR, WRITE ZERO]	4. Ethnicity [TEXT]	5. Relationship to head[2]. HEAD.........................1 HUSBAND/WIFE.................2 SON/DAUGHTER................3 GRANDCHILD..................4 FATHER/MOTHER...............5 BROTHER/SISTER.............6 NEPHEW/NIECE................7 SON/DAUGHTER-IN-LAW.........8 BROTHER/SISTER-IN-LAW.......9 FATHER/MOTHER-IN-LAW.......10 OTHER FAMILY RELATIVE......11 SERVANT/SERVANT'S RELATIVE.12 TENANT/TENANT'S RELATIVE...13 OTHER PERSON NOT RELATED...14	6. What is the present marital status of [NAME]? MARRIED.........1 DIVORCED/ SEPARATED.......2 WIDOW/WIDOWER...3 NEVER MARRIED...4 NOT MARRIED, LIVE WITH SPOUSE.....5 SINGLE..........6 OTHER, SPECIFY	7a. How many months did [NAME] live here during...? [WRITE 12 IF ALWAYS PRESENT, 0 IF AWAY MORE THAN 11 MONTHS]		
							the past 12 months	2063	2058
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

[1]Household members live under the same roof, eat from the same pot, and share money and/or labour for a minimum of 1 month in a year.
[2]Head of household is the person who makes the financial decisions and dispositions. It is not necessarily the oldest person.

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MODULE 1: HOUSEHOLD ROOSTER

IDENTIFICATION CODE	7b. Where was [NAME] living in the past 12 months/2063/2058? [ASK ONLY IF [NAME] LIVED IN THE HOUSEHOLDS FOR LESS THAN 6 MONTHS IN ANY PERIOD] [ASK ONLY PERSONS ABOVE 15 YEARS]			8. Currently, what is [NAME's] main occupation? [CODES TABLE 3] [ASK ONLY PERSONS ABOVE 15 YEARS]	9. Do [NAME] receive pension? NO.....0 YES....1	10. Have [NAME] received payments from an Employee Provident Investment Fund? NO.....0 YES....1	11. What was [NAME's] main occupation in 2063? [CODES TABLE 3] [ASK ONLY PERSONS ABOVE 15 YEARS]	12. What was [NAME's] main occupation in 2058? [CODES TABLE 3] [ASK ONLY PERSONS ABOVE 15 YEARS]	13. Currently, from what type of school did [NAME] complete their highest class? NEVER ATTENDED.....0 (• NEXT PERSON) PUBLIC SCHOOL.......1 PRIVAT/BOARDING SCHOOL.......2 UNIVERSITY...3	14. Currently, what is the highest class that [NAME] completed? [GRADE]
	COUNTRY/ DISTRICT	12 M..1 2063..2 2058..3	INT...1 URBAN.2 RURAL.3							
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										

MODULE 1: HOUSEHOLD ROOSTER

IDENTIFICATION CODE	15. In 2063, from what type of school did [NAME] complete their highest class? NEVER ATTENDED.....0 (• 19) PUBLIC SCHOOL.......1 PRIVAT/BOARDING SCHOOL.......2 UNIVERSITY...3	16. In 2063, what was the highest class that [NAME] completed? [GRADE]	17. In 2058, from what type of school did [NAME] complete their highest class? NEVER ATTENDED.....0 (• 19) PUBLIC SCHOOL.......1 PRIVAT/BOARDING SCHOOL.......2 UNIVERSITY...3	18. In 2058, what was the highest class that [NAME] completed? [GRADE]	19. Did [NAME] pass SLC examination? NO.........0 (• 21) YES........1	20. When was SLC passed? [YEAR]	21. Have [NAME] ever received freeship for educational expenses? NO..........0 (→ 23) YES, GOV. PROGRAMME...1 YES, BASED ON MERITS.....2 YES, BASED ON WEALTH......3 OTHER, SPECIFY	22. In what period since 2058? [YEARS, E.G 2059-2062]	23. What was the main source of money for covering [NAME's] school costs? FAMILY SAVINGS......1 SELL ASSETS..........2 SUPPORT RELATIVES....3 SUPPORT FRIENDS......4 LOCAL MONEY LENDER...5 CREDIT COOPERATIVE...6 AGRICULTURAL DEV. BANK............7 COMMERCIAL BANK......8 DHUKUTI.............9 NGO.................10 CFUG................11 OTHER CBO...........12 OTHER, SPECIFY
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

MODULE 2: HOUSEHOLD MEMBER MOVEMENTS

IDENTIFICATION CODE	1. Since 2058, have any other persons lived in the household – apart from current household members? [MAKE A COMPLETE LIST OF ALL CONCERNED, THEN FILL IN THE REST OF THE QUESTIONS] [NAMES ARE GIVEN NEW ID CODES]	2. Why is this person not a household member now? DIED...............1 (• 5) HOUSEHOLD SPLIT....2 DIVORCED/ SEPERATED..........3 MOVED FOR WORK.....4 MARRIAGE...........5 MOVED FOR STUDIES..6 OTHER, SPECIFY	3. Where is [NAME] living now?		4. When did this person move or die? [YEAR]	5. How old is [NAME]?	6. What is the marital status of [NAME]? MARRIED.........1 DIVORCED/ SEPARATED.......2 WIDOW/WIDOWER...3 NEVER MARRIED...4 NOT MARRIED, LIVE WITH SPOUSE.....5 SINGLE..........6 OTHER, SPECIFY
			COUNTRY/ DISTRICT	INT....1 URBAN..2 RURAL..3			

IDENTIFICATION CODE	7. Relationship to head. HEAD..........................1 HUSBAND/WIFE..................2 SON/DAUGHTER..................3 GRANDCHILD....................4 FATHER/MOTHER.................5 BROTHER/SISTER...............6 NEPHEW/NIECE..................7 SON/DAUGHTER-IN-LAW..........8 BROTHER/SISTER-IN-LAW........9 FATHER/MOTHER-IN-LAW........10 OTHER FAMILY RELATIVE.......11 SERVANT/SERVANT'S RELATIVE..12 TENANT/TENANT'S RELATIVE....13 OTHER PERSON NOT RELATED....14	8. Ethnicity [TEXT]	9. Sex MALE...1 FEMALE.2	10. What is [NAME's] main current occupation? [SKIP QUESTION IF [NAME]IS DEAD] [CODES TABLE 3] [ASK ONLY PERSONS ABOVE 15 YEARS]	11. What was [NAME's] main occupation in 2063? [SKIP QUESTION IF [NAME]DIED BEFORE 2063] [CODES TABLE 3] [ASK ONLY PERSONS ABOVE 15 YEARS]	12. What was [NAME's] main occupation in 2058? [SKIP QUESTION IF [NAME]DIED BEFORE 2058] [CODES TABLE 3] [ASK ONLY PERSONS ABOVE 15 YEARS]	13. In 2068, from what type of school did [NAME] complete their highest class? NEVER ATTENDED.....0 (• NEXT PERSON) PUBLIC SCHOOL.......1 PRIVAT/BOARDING SCHOOL.......2 UNIVERSITY...3	14. In 2068, what was the highest class that [NAME] completed? [GRADE]

MODULE 2: HOUSEHOLD MEMBER MOVEMENTS

IDENTIFICATION CODE	15. In 2063, from what type of school did [NAME] complete their highest class? NEVER ATTENDED.....0 (• 19) PUBLIC SCHOOL.......1 PRIVAT/BOARDING SCHOOL.......2 UNIVERSITY...3	16. In 2063, what was the highest class that [NAME] completed? [GRADE]	17. In 2058, from what type of school did [NAME] complete their highest class? NEVER ATTENDED......0 (• 19) PUBLIC SCHOOL........1 PRIVAT/BOARDING SCHOOL........2 UNIVERSITY....3	18. In 2058, what was the highest class that [NAME] completed? [GRADE]	19. Did [NAME] pass SLC examination? NO.......0 (• 21) YES......1	20. Year SLC was passed. [YEAR]	21. Have [NAME] ever received freeship for educational expenses? NO..............0 (→ 23) YES, GOV. PROGRAMME.......1 YES, BASED ON MERRITS.........2 YES, BASED ON WEALTH..........3 OTHER, SPECIFY	22. In what period since 2058? [YEARS, E.G 2059-2062]	23. What was the main source of money for covering [NAME's] school costs? FAMILY SAVINGS......1 SELL ASSETS.........2 SUPPORT RELATIVES...3 SUPPORT FRIENDS.....4 LOCAL MONEY LENDER..5 CREDIT COOPERATIVE..6 AGRICULTURAL DEV. BANK...........7 COMMERCIAL BANK.....8 DHUKUTI.............9 NGO................10 CFUG...............11 OTHER CBO..........12 OTHER, SPECIFY

MODULE 3A: REMITTANCES, HOUSEHOLD MEMBERS 2058-2068

ACTIVITY CODE	IDENTIFICATION CODE	1. Since 2058, did any household members [IN MODULES 1 & 2] do wage work that forced them to live outside the household? [CODE TABLE 3] [MAKE A COMPLETE LIST OF WAGE WORK, THEN FILL IN THE REST OF THE QUESTIONS]	2. Where did he/she work? NEPAL, RURAL...1 NEPAL, URBAN...2 INDIA.........3 OTHER COUNTRY..4	3. In what period since 2058? [YEARS, E.G 2059-2062]	4. How many years/months in total?		5. What was the main source of money/help for covering moving and initial living costs? OWN SAVINGS.................1 SELL ASSETS................2 STAY WITH EXTENDED FAMILY..3 SUPPORT RELATIVES..........4 SUPPORT FRIENDS............5 LOCAL MONEY LENDER.........6 CREDIT COOPERATIVE.........7 AGRICULTURAL DEV. BANK.....9 COMMERCIAL BANK...........10 DHUKUTI...................11 NGO.......................12 CFUG......................13 OTHER CBO.................14 OTHER, SPECIFY	6. Did the household receive remittances from the household member NO....0 YES...1
					[YEARS/ MONTHS]	YEARS...1 MONTHS..2		
A								
B								
C								
D								
E								

MODULE 3B: REMITTANCES FROM OTHER SOURCES 2058-2068

1. Since 2058, have the household received remittances from other persons not mentioned in this questionnaire? NO...0 (→ NEXT) YES..1	2. Who was the primary recipient of assistance? [COPY ID] [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]	3. Relationship of the recipient to the donor? FATHER/MOTHER..............1 HUSBAND/WIFE...............2 SON/DAUGHTER...............3 BROTHER/SISTER............4 OTHER RELATIVES ....5 OTHER PERSON NOT RELATED...6	4. Where did he/she work? NEPAL, RURAL...1 NEPAL, URBAN...2 INDIA…..........3 OTHER COUNTRY..4	5. Donors main occupation [CODE TABLE 3]	6. In what period since 2058, did the family receive remittances? [YEARS, E.G 2059-2062]
[LEAVE EMPTY]					

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MODULE 4: LAND OWNERSHIP

LAND PLOT CODE	1. MAKE A LIST OF THE MAIN LAND HOLDINGS THAT THE HOUSEHOLD CURRENTLY OWES, INCLUDING RESIDENTIAL AREA.		2. Type of crops grown? ANNUAL, FOOD......1 ANNUAL, NON-FOOD..2 FRUIT TREES.......3 OTHER PERRINIALS..4 VEGETABLES........5 NONE..............6	3. What type of plot is it? REGULAR IRRIGATED....1 SEASONAL IRRIGATED....2 RAINFED......3 PASTURE......4 RESIDENTIAL..5	4. Do the household have a certificate for the land? NO...0 (→ 6) YES..1	5. When was the certificate obtained? [YEAR]	6. Where is it located?		7. When was the plot acquired? [YEAR]
	AREA	UNIT CODE					DISTRICT	RURAL..1 URBAN..2	
A									
B									
C									
D									
E									
F									
G									
H									
I									
J									
K									
L									
M									
N									
O									

MODULE 4: LAND OWNERSHIP

LAND PLOT CODE	8. How was the land acquired? BOUGHT.......1 MORTGAGED IN..2 INHERIT......3 (→ 11) ALLOCATED LAND........4 (→ 11) DOWRY.......5 (→ 11)	9. What was the main source of money for the land acquisition? FAMILY SAVINGS...........1 SELL ASSETS..............2 SUPPORT RELATIVES........3 SUPPORT FRIENDS..........4 LOCAL MONEY LENDER.......5 CREDIT COOPERATIVE.......6 AGRICULTURAL DEV. BANK...7 COMMERCIAL BANK..........8 DHUKUTI..................9 NGO.....................10 CFUG....................11 OTHER CBO...............12 OTHER, SPECIFY	10. How much did you pay? [RUPEES]	11. What is the current land value? [RUPEES]	12. In 2063, what was the value of the land? [→ NEXT LAND IF IT WAS AQUIRED AFTER 2063] [RUPEES]	13. In 2058, what was the value of the land? [→ NEXT LAND IF IT WAS AQUIRED AFTER 2058] [RUPEES]
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
K						
L						
M						
N						
O						

MODULE 5: LAND SOLD, MORGAGED OUT, GIVEN AWAY, OR LOST

LAND PLOT CODE	1. LIST OF ALL PLOTS THAT THE HOUSEHOLD HAVE SOLD, MORTGAGED OUT, LOST OR GIVEN AWAY SINCE 2058.		2. Type of crops grown? ANNUAL, FOOD......1 ANNUAL, NON-FOOD..2 FRUIT TREES.......3 OTHER PERRINIALS..4 VEGETABLES........5 NONE..............6	3. What type of plot is it? REGULAR IRRIGATED.....1 SEASONAL IRRIGATED.....2 RAINFED.......3 PASTURE.......4 RESIDENTIAL...5	4. Did the household have a certificate for the land? NO...0 YES..1	5. Was the land... SOLD..............1 MORTGAGED OUT.....2 EXPROPRIATED......3 GIVEN AWAY/ DOWRY.............4 LOST..............5 OTHER, SPECIFY	6. Value of land when it was sold, mortgaged out, expropriated, given away, or lost? [RUPEES]	7. What year was it sold, mortgaged out, expropriated, given away, or lost? [YEAR]
	AREA	UNIT CODE						
A								
B								
C								
D								
E								
F								
G								
H								
I								
J								
K								
L								
M								
N								
O								

MODULE 5: LAND SOLD, MORGAGED OUT, GIVEN AWAY, OR LOST

LAND PLOT CODE	8. Where was the land located?		9. When was the plot acquired? [YEAR]	10. How was the land acquired? BOUGHT.........1 MORTGAGED IN...2 INHERIT........3 (→ 13) ALLOCATED LAND..........4 (→ 13) DOWRY.........5 (→ 13)	11. What was the main source of money for the land acquisition? FAMILY SAVINGS...........1 SELL ASSETS..............2 SUPPORT RELATIVES........3 SUPPORT FRIENDS..........4 LOCAL MONEY LENDER.......5 CREDIT COOPERATIVE.......6 AGRICULTURAL DEV. BANK...7 COMMERCIAL BANK..........8 DHUKUTI..................9 NGO.....................10 CFUG....................11 OTHER CBO...............12 OTHER, SPECIFY	12. How much did you pay? [RUPEES] [→NEXT LAND]	13. Land value when it was acquired [RUPEES]
	DISTRICT	RURAL..1 URBAN..2					
A							
B							
C							
D							
E							
F							
G							
H							
I							
J							
K							
L							
M							
N							
O							

MODULE 6: ACCESS TO LOANS

	2068	2063	2058
1. In [YEAR], did any member of your household have access to informal credit? YES...1 NO....0 (→ 4)			
2. In [YEAR], what principal type of informal credit? RELATIVES................1 FRIENDS..................2 LOCAL MONEY LENDER.......3 DHUKUTI..................4 CFUG.....................5 OTHER CBO................6 OTHER, SPECIFY			
3. In [YEAR], list principal reason for having access to informal credit? LAND.........1 REPUTATION................6 BUILDINGS....2 PREVIOUS PAYMENT RECORDS..7 LIVESTOCK....3 FAMILY CONNECTION........8 SAVINGS......4 CBO MEMBERSHIP............9 GOLD/SILVER..5 OTHER, SPECIFY			
4. In [YEAR], did any member of your household have access to formal credit? YES=1 NO=0 (→ NEXT YEAR)			
5. In [YEAR], what principal type of formal credit? CREDIT COOPERATIVE.......1 AGRICULTURAL DEV. BANK...2 COMMERCIAL BANK..........3 NGO......................4 OTHER, SPECIFY			
6. In [YEAR], list principal reason for having access to formal credit? LAND.........1 REPUTATION................6 BUILDINGS....2 PREVIOUS PAYMENT RECORDS..7 LIVESTOCK....3 FAMILY CONNECTION........8 SAVINGS......4 CBO MEMBERSHIP............9 GOLD/SILVER..5 OTHER, SPECIFY			

MODULE 7: OUTSTANDING DEBTS AND SAVINGS

	2068	2063	2058
1. In [YEAR], how much did other households owe in money to your household?			
2. In [YEAR], how much did your household owe in money to other households?			
3. In [YEAR], how much did the household have in cash savings? [RUPEES]			
4. In [YEAR], how much did the household have in gold and silver (including watches)? [RUPEES]			

MODULE 8: LOANS

1. ASK THE RESPONDENT TO MENTION SIGNIFICANT INFORMAL OR FORMAL LOANS OBTAINED SINCE 2058. [RUPEES] [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]	2. When was the loan obtained? [YEAR]	3. Who was the primary borrower? [COPY ID CODE]	4. From where did you obtain the loan? RELATIVES................1 FRIENDS.................2 LOCAL MONEY LENDER.......3 CREDIT COOPERATIVE......4 AGRICULTURAL DEV. BANK...5 COMMERCIAL BANK.........6 DHUKUTI.................7 NGO.....................8 CFUG....................9 OTHER CBO..............10 OTHER, SPECIFY	5. What collateral did you use to secure the loan? LAND..............1 BUILDINGS.........2 LIVESTOCK.........3 SAVINGS...........4 GOLD/SILVER.......5 REPUTATION........6 PREVIOUS PAYMENT RECORDS...........7 FAMILY CONNECTION..8 CBO MEMBERSHIP.....9 OTHER,SPECIFY	6. What was the primary purpose of the loan? COPING WITH ILLNESS...1 MEET CONSUMPTION NEEDS.................2 BUY DURABLE GOODS/ HOUSEHOLD UTENSILS....3 TRANSPORTATION........4 TRAVELLING............5 HOME IMPROVEMENT......6 SCHOOL................7 INVESTMET IN: LAND..................8 LIVESTOCK.............9 PRODUCTIVE EQUIPMENT.10 IRRIGATION...........11 BUSINESS.............12 OTHER, SPECIFY	7. How much remains to be repaid? [RUPEES]

MODULE 9: MAJOR SHOCKS 2058-2068

ASK THE RESPONDENT ABOUT <u>MAJOR</u> SHOCK EVENTS THAT SIGNIFICANTLY (OR COMBINED*) AFFECTED HOUSEHOLD WEALTH AFTER 2058.

1. Shock type: AGRICULTURAL SHOCK..1 LIVESTOCK LOSS......2 LAND LOSS...........3 OTHER ASSET LOSS....4 JOB LOSS............5 ILLNESS.............6 DEATH...............7 MARRIAGE / DOWRY....8 OTHER, SPECIFY [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]	2. How much did the shock cost the household? [RUPEES]	3. In what year did the shock occur? [YEAR]	4. How did you cope? LOAN.....................1 (→ 5) SAVINGS..................2 REDUCE CONSUMPTION.......3 SELL LAND................4 SELL HOUSE...............5 SELL LIVESTOCK...........6 SELL JEWELRY.............7 SELL OTHER ASSETS........8 WAGE WORK................9 ASSISTANCE FAM/FRIENDS..10 GOV. ASSISTANCE........11 NGO / INGO ASSISTANCE...12 EXPLOIT FOREST..........13 EXPLOIT ENV. RESOURCES..14 SELL AGRI. PRODUCTS.....15 TRADE / BUSINESS........16 OTHER, SPECIFY [→ NEXT SHOCK]	5. From where did you obtain the loan? RELATIVES................1 FRIENDS..................2 LOCAL MONEY LENDER.......3 CREDIT COOPERATIVE.......4 AGRICULTURAL DEV. BANK...5 COMMERCIAL BANK..........6 DHUKUTI..................7 NGO......................8 CFUG.....................9 OTHER CBO...............10 OTHER, SPECIFY	6. What type of collateral did you have to use to secure the loan? LAND................1 BUILDINGS..........2 LIVESTOCK..........3 SAVINGS............4 GOLD/SILVER........5 REPUTATION.........6 PAYMENT RECORDS....7 FAMILY CONNECTIONS..8 CBO MEMBERSHIP.....9 OTHER, SPECIFY

*Sometimes it is the reoccurrence of shocks that deteriorates household wealth.

MODULE 10: LIVESTOCK HOLDINGS [0=NONE]

	1. Currently, how many [ANIMALS] do you owe? [CALVES= 0.5]	2. In 2063, how many [ANIMALS] did you owe?	3. Since 2063, how many [ANIMALS] were sold?	4. Since 2063, how many [ANIMALS] were lost?	5. In 2058, how many [ANIMAL] did you owe?	6. Between 2058 and 2063, how many animals were lost?	7. Between 2058 and 2063, how many animals were sold?
1. Cows							
2. Oxen							
3. Milk buffaloes							
4. Non-milk buffaloes							
5. Yak							
6. Horses							
7. Donkeys							
8. Mules							
9. Goats							
10. Castrated goats							
11. He/she sheep							
12. Pigs							
13. Poultry*							
Other, specify							

*Domesticated birds (Chicken/Ducks/Pigeons) kept for commercial purposes

MODULE 11: LIVESTOCK AQUISITION

1. What type of major [LIVESTOCK] have you bought or received as gift/dowry or inheritance since 2058? [MAKE A LIST OF INDIVIDUAL ACQUISITIONS SINCE 2058, THEN FILL IN THE REST OF THE QUESTIONS] [CALVES=0.5]	2. Livestock type [CODE TABLE 5 / MODULE 10]	3. How was the livestock acquired? BOUGHT......1 INHERIT.....2 (→ NEXT) GIFT/DOWRY..3 (→ NEXT)	4. When was the [LIVESTOCK] bought? [YEAR]	5. How much did you pay? [RUPPES]	6. What was your main source of money for buying livestock? FAMILY SAVINGS......1 SELL ASSETS.........2 SUPPORT RELATIVES...3 SUPPORT FRIENDS.....4 LOCAL MONEY LENDER..5 CREDIT COOPERATIVE..6 AGRICULTURAL DEV. BANK...........7 COMMERCIAL BANK.....8 DHUKUTI.............9 NGO................10 CFUG...............11 OTHER CBO..........12 OTHER, SPECIFY

MODULE 12: AGRICULTURAL EQUIPMENT [0=NONE]

	1. Currently, how many pieces of [EQUIPMENT] do the household owe?	2. What is the total sales value?	3. In 2063, how many pieces of [EQUIPMENT] did the household owe?	4. In 2063, what was the total sales value?	5. In 2058, how many pieces of [EQUIPMENT] did the household owe?	6. In 2058, what was the total sales value?
0. Truck						
1. Tractor						
2. Power tiller						
3. Cart						
4. Thresher						
5. Hand trolley						
6. Water pump						
7. Water storage Tank						
8. Tube well						
9. Water reservoir/ dam (area estimate)	UNIT CODE:		UNIT CODE:		UNIT CODE:	
10. Generator/ diesel engine						
11. Grass/hay Cutter						
12. Plough wood						
13. Plough iron						
14. Green houses plastic						
15. Green houses glass						
16. Milling machine						
15. Other, specify						

MODULE 13A: INVESTMENT IN AGRICULTURAL EQUIPMENT

1. What type of agricultural [EQUIPMENT] have you bought since 2058? [MAKE A LIST OF LARGER ITEMS ONLY, THEN FILL IN THE REST OF THE QUESTIONS] [CODE TABLE 4]	2. Number of [EQUIPMENT] bought?	3. When was the [EQUIPMENT] bought?	4. How much did you pay for it? [RUPPES]	5. What was the main source of money for buying equipment? FAMILY SAVINGS............1 SELL ASSETS..............2 SUPPORT RELATIVES........3 SUPPORT FRIENDS..........4 LOCAL MONEY LENDER.......5 CREDIT COOPERATIVE.......6 AGRICULTURAL DEV. BANK...7 COMMERCIAL BANK..........8 DHUKUTI..................9 NGO.....................10 CFUG....................11 OTHER CBO...............12 OTHER, SPECIFY

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MODULE 13B: SOLD AND LOST AGRICULTURAL EQUIPMENT*

1. Since 2058, did your household loose or sell agricultural [EQUIPMENT]? [LIST ONLY LARGER ITEMS, THEN FILL IN THE REST OF THE QUESTIONS] [CODE TABLE 4]	2. Was it sold or lost. SOLD...1 LOST...2	3. When was it sold or lost? [YEAR]	4. Sales value of [EQUIPMENT] when it was sold or lost. [RUPEES]

*Modules 12, 13A and 13B should correspond.

MODULE 14: AGRICULTURAL INPUTS

	2068	2063	2058
1. In [YEAR], did household "rent in" land? NO...0 (→ 5) YES..1			
2. In [YEAR], how much land did you "rent in"?			
	UNIT CODE	UNIT CODE	UNIT CODE
3. Type of crops grown? ANNUAL, FOOD.......1 OTHER PERRINIALS...4 ANNUAL, NON-FOOD...2 VEGETABLES.........5 FRUIT TREES........3 OTHER, SPECIFY			
4. In [YEAR], what type of plot was it? REGULAR IRRIGATED...1 PASTURE......4 SEASONAL IRRIGATED..2 OTHER, SPECIFY RAINFED.............3			
5. In [YEAR], did the household "rent out" land? NO...0 (→ 9) YES..1			
6. In [YEAR], how much land did you "rent out"?			
	UNIT CODE	UNIT CODE	UNIT CODE
7. In [YEAR], what type of plot was it? REGULAR IRRIGATED...1 PASTURE......4 SEASONAL IRRIGATED..2 OTHER, SPECIFY RAINFED.............3			
9. In [YEAR], did the household use any improved variety of seed? NO...0 (→ 13) YES..1			
10. Type of seeds? RICE.........1 VEGETABLES...4 WHEAT........2 OTHER, SPECIFY MAIZE........3			

MODULE 14: AGRICULTURAL INPUTS

	2068	2063	2058
11. In [YEAR], did the household purchase improved seeds? NO...0 YES..1			
12. In [YEAR], where did the household obtain the seeds? GOV. AGRICULTURAL DEV. OFFICE...1 COOPERATIVE/CBO....5 SEED COMPANY.....................2 NGO................6 OTHER FARMERS...................3 LANDLORD...........7 PRIVATE DEALER.................4 OTHER, SPECIFY			
13. In [YEAR], did the household use any chemical fertilizers? NO...0 (→ 16) YES..1			
14. In [YEAR], did the household purchase chemical fertilizers? NO...0 YES..1			
15. In [YEAR], where did the household obtain the fertilizers? GOV. AGRICULTURAL DEV. OFFICE...1 COOPERATIVE/CBO....5 SEED COMPANY.....................2 NGO................6 OTHER FARMERS...................3 LANDLORD...........7 PRIVATE DEALER.................4 OTHER, SPECIFY			
16. In [YEAR], did the household use any insecticides / pesticides? NO...0 (→ 19) YES..1			
17. In [YEAR], were the insecticides / pesticides purchased? NO...0 YES..1			
18. In [YEAR], where did the household obtain the insecticides / pesticides? GOV. AGRICULTURAL DEV. OFFICE...1 COOPERATIVE/CBO....5 SEED COMPANY.....................2 NGO................6 OTHER FARMERS...................3 LANDLORD...........7 PRIVATE DEALER.................4 OTHER, SPECIFY			
19. In [YEAR], did the household hire any casual farm workers? NO=0 (→ 22) YES=1			
20. In [YEAR], how many persons did you hire for agricultural and livestock work?			
21. In [YEAR], on average, how many man-days did they work each?			
22. In [YEAR], have any of the household members taken any technical training advice from government, NGO, or corporative? NO................1 YES, GOVERNMENT...2 YES, NGO.........3 YES, CBO.........5 OTHER, SPECIFY			

MODULE 15: WAGEWORK 2058-2068 (PERSONS ABOVE 15 YEARS)

ACTIVITY CODE	IDENTIFICATION CODE	1. List important wage work that household members have had in [PERIOD]... [CODE TABLE 3] [ASK FOR PAST 12 MONTHS, 2063, AND 2058]	2. In [PERIOD], where did [NAME] do this work?		3. In [PERIOD], was [NAME's] employer a.. GOVENRMENT...1 NGO.........2 INGO........3 PRIVATE COMPANY......4 PRIVATE INDIVIDUAL...5 OTHER, SPECIFY	4. In [PERIOD], please specify type of personal connection to employer. [NAME] is related to: EMPLOYER............1 EMPLOYEE............2 FRIEND TO EMPLOYER..3 FRIEND TO EMPLOYEE..4 NO RELATION.........5 OTHER, SPECIFY	5. In [PERIOD], How did [NAME] receive wages? PER DAY.....1 PER MONTH...2 PIECE RATE..3	6. In [PERIOD], how many months did [NAME] do this work? 1 = 1 MONTH 0.25 = 1 WEEK [MAX 12 MONTHS]
			COUNTRY/ DISTRICT	INT....1 URBAN..2 RURAL..3				
THE PAST 12 MONTHS [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]								
A								
B								
C								
D								
E								
2063 [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]								
F								
G								
H								
I								
J								
2058 [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]								
K								
L								
M								
N								
O								

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MODULE 16A: ENTERPRISES / BUSINESS 2058-2068 (write family member ID code for main owner of enterprise)

ENTERPRISE CODE	IDENTIFICATION CODE	1. List important enterprises that your household have operated in [PERIOD]... [CODE TABLE 6] [ASK FOR PAST 12 MONTHS, 2063, AND 2058]	2. In [PERIOD], who are the customers? HOUSEHOLDS / INDIVIDUALS.....1 SMALL ENTERPRISES.....2 LARGE ENTERPRISES.....3 SMALL TRADERS...4 LARGE TRADERS...5 GOVERNMENT......6 CONTRACTORS.....7 TOURISTS........8 NGO / INGO......9 OTHER,SPECIFY	3. In [PERIOD], where did the household operate the enterprise? HOME.......1 OTHER FIXED LOCATION...2 OTHER CHANGING LOCATION...3	4. In [PERIOD], who owned the enterprise? HOUSEHOLD ONLY......1 (→ 6) PARTNER- SHIP......2	5. In [PERIOD], what share of the profit does your household keep? [%]	6. If the enterprise is registered with the government, please indicate [YEAR] of registration?	6. In [PERIOD], how many months did the enterprise operate? 1= 1 MONTH 0.25 =1 WEEK [MAX 12 MONTHS]	7. In [PERIOD], how many workers do you hire when the enterprise is running? [WRITE 0 IF NONE]	8. In [PERIOD], what was your main source of money for setting up the business? FAMILY SAVINGS......1 SELL ASSETS.........2 SUPPORT RELATIVES...3 SUPPORT FRIENDS.....4 LOCAL MONEY LENDER..5 CREDIT COOPERATIVE..6 AGRIC. DEV. BANK....7 COMMERCIAL BANK.....8 DHUKUTI.............9 NGO.................10 CFUG...............11 OTHER CBO..........12 NO START-UP COSTS..13 OTHER, SPECIFY
THE PAST 12 MONTHS [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]										
A										
B										
C										
D										
2063 [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]										
E										
F										
G										
H										
2058 [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]										
I										
J										
K										
L										

MODULE 17A: PARENT'S MODULE (Only include the head of household and their spouse)

PARENT'S NAME	1. Ethnicity of [PARENT] [TEXT]	2. Does the [PARENT] live in this household now? NO, ALIVE...1 (→ 6) NO, DEAD....2 (→ 4) YES.....3 (→ 3)	3. COPY THE ID CODE OF PARENT [→ NEXT PERSON]	4. When did [PARENT] die? [YEAR]	5. Where did [HEAD] or [SPOUSE] live when [PARENT] died? WITH PARENT, MARRIED.....1 WITH PARENT, SINGLE......2 WITHOUT PARENT, MARRIED.....3 WITHOUT PARENT, SINGLE......4	6. From what type of school did [PARENT] complete their highest class? NEVER ATTENDED......0 (• 7) PUBLIC SCHOOL........1 PRIVAT/BOARDING SCHOOL........2 UNIVERSITY....3	7. What was the highest class that [PARENT] completed? [GRADE]	8. What was the [PARENT's] primary occupation? [CODE TABLE 3]	9. How much irrigated land (keth) did [PARENT] owe? [CURRENT OR WHEN THEY DIED]		10. How much rainfed land (bari) did [PARENT] owe? [CURRENT OR WHEN THEY DIED]	
									AREA	UNIT CODE	AREA	UNIT CODE
FATHER TO HEAD												
MOTHER TO HEAD												
FATHER TO SPOUSE												
MOTHER TO SPOUSE												

MODULE 17B: DOWRY RECEIVED SINCE 2058

1. Has the household RECEIVED dowry since 2058? [LIST ALL DOWRY RECEIVED SINCE 2058, THEN FILL IN THE REST OF THE QUESTIONS] Livestock....1 Money........2 (→ 3) Jewellery....3 (→ 3) Land........4 (→ 3) Other, specify (→ 3)	2. What livestock types and how many?		3. When was [DOWRY] received? [YEAR]	4. Total value in [YEAR] [RUPEES]
	TYPES [CODE TABLE 5 / MODULE 10]	NUMBER		

MODULE 17C: DOWRY PAID SINCE 2058

1. Has the household PAID dowry since 2058? [LIST ALL DOWRY PAID SINCE 2058, THEN FILL IN THE REST OF THE QUESTIONS] Livestock....1 Money........2 (→ 3) Jewellery....3 (→ 3) Land........4 (→ 3) Other, specify (→ 3)	2. What livestock types and how many?		3. When was [DOWRY] paid? [YEAR]	4. Total value in [YEAR] [RUPEES]
	TYPES [CODE TABLE 5 / MODULE 10]	NUMBER		

MODULE 18: MEMBERSHIP STATUS OF ASSOCIATIONS, ORGANIZATIONS, GROUPS, CLUBS

IDENTIFICATION CODE	List any associations, organizations, groups, or clubs the household have been a member of in.... [USE CODE TABLE 7] [ASK FOR PAST 12 MONTHS, 2063, AND 2058]	Degree of participation? [USE CODE BELOW]	Did membership improve household economic conditions? YES, THROUGH NEW SKILS........1 YES, THROUGH NEW CONNECTIONS..2 YES, THROUGH PROVISION OF INFORMATION...................3 NO..........................4
THE PAST 12 MONTHS [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]			
2063 [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]			
2058 [MAKE A COMPLETE LIST, THEN FILL IN THE REST OF THE QUESTIONS]			

DEGREE OF PARTICIPATION: LEADER=1, VERY ACTIVE=2, SOMEWHAT ACTIVE=3, NOT ACTIVE=4

MODULE 19: NGO ASSISTANCE

1. Since 2058, has the household received any significant NGO assistance? [LIST ASSISTANCE BY PRIMARY PURPOSE. COMPLETE THE LIST, THEN FILL IN THE REST OF THE QUESTIONS]	2. When was the assistance provided? [YEAR]	3. If provided by a loan, how much money was given? [RUPEES] (→ 5)	4. If provided by implements, what was the value of implements? [RUPEES] (→ NEXT)	5. Was collateral required to secure the loan? NO....0 YES...1	6. Was it required to repay the loan? NO....0 YES...1

MODULE 20: HOUSING MODULE

	2068	2063	2058
1. In [YEAR], was the house you were living in owned by the household? NO...............................0 PARTLY, SHARED WITH OTHER OWNER....1 (→ 3) YES...............................2 (→ 3)			
2. In [YEAR], did the household pay rent? NO, LIVED WITH PARENTS.............1 (→ NEXT YEAR) NO, LIVED WITH RELATIVES/FRIENDS...2 (→ NEXT YEAR) YES...............................3			
3. In [YEAR], what was the main construction material of outside wall? CONCRETE BLOCKS...............1 WOOD/BRANCHES.....5 CEMENT BONDED BRICKS/STONES...2 NO OUTSIDE WALLS..6 MUD BONDED BRICKS/STONES......3 OTHER, SPECIFY SUNDRIED BRICKS...............4			
4. In [YEAR], what was the main material of roof? TILES/SLATES......1 STRAW/THACTH...5 GALVENIZED IRON...2 EARTH/MUD......6 CONRETE/CEMENT....3 STONES.........7 WOOD/PLANKS.......4 OTHER, SPECIFY			
5. In [YEAR], what were the windows made of? NO WINDOWS/NO COVERING...1 SCREENS/GLASS..........3 SHUTTERS.................2 OTHER, SPECIFY			
6. In [YEAR], how big was the inside of your house? [IN SQUARE FEET F^2]			
7. In [YEAR], what was the source of drinking water? PIPPED WATER...........1 OPEN WELL.................3 COVERED WELL/HAND PUMP..2 OTHER WATER SOURCE, SPECIFY			
8. In [YEAR], what kind of sewage facility did the household have? SEPTIC TANK...1 BIOGASS TANK...3 SIMPLE PIT....2 NONE...........4			
9. In [YEAR], what type of toilet was used by your household? FLUSH TOILET....1 SIMPLE PIT.....3 INDIAN TOILET...2 NONE...........4			
10. In [YEAR], did the household have electricity meter? JOINT........1 NO METER....3 INDIVIDUAL...2			
11. In [YEAR], what was the most important source of lightning in your household? ELECTRICITY........1 OTHER, SPECIFY GAS/OIL/KEROSENE...2			
12. In [YEAR], what type of stove does your household mainly use for cooking? OPEN FIREPLACE.....1 KEROSENE/GAS STOVE...4 MUD STOVE..........2 OTHER, SPECIFY SMOKELESS STOVE....3			

	2068	2063	2058
13. In [YEAR], what kind of fuel is most often used by your household for cooking? WOOD/FIREWOOD.........1 CYLINDER GAS...4 DUNG..................2 KEROSENE.......5 LEAVES/STRAW/THATCH...3 BIO-GAS........6 OTHER, SPECIFY			
14. In [YEAR], which of the following facilities were there in your household?			
NO...0 YES..1 TELEPHONE			
MOBILE PHONE			
TV DISH/CABLE			
TV ANTENNA			
INTERNET			
15. In [YEAR], what would be the sales value of the house/your part of the house?			
16. In [YEAR], walking distance, in minutes, from household, to nearest road accessible by car/truck/tractor all year round.			

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MODULE 21: HOUSEHOLD UTENSILES

In [YEAR] how many of the following items did your household owe?	2068	What is the total sales value? [RUPEES]	2063	In 2063, what was the total sales value? [RUPEES]	2058	In 2058, what was the total sales value? [RUPEES]
1. Watch						
2. Radio/Tape CD/ CD player						
3. Camera						
4. Bicycle						
5. Motorcycle						
6. Car						
7. Refrigerator						
8. Washing machine						
9. Fans						
10. Gas/electric stove						
11. Gas/electric oven						
12. Heaters (electric, gas, kerosene)						
13. Dish/cable TV						
14. Antenna TV						
15. DVD player						
16. Computer						
17. Sewing machine						
18. Iron						
19. Telephone						
20. Mobile phone						
21. Solar panel						
22. Car battery						
23. Other, specify:						
24. Other, specify:						
25. Other, specify:						

Appendix C7 Climate change perceptions

A. Identification

A.1. Identification of the household.

Household name and code	*(name)*	
Village name and code	*(name)*	*(VID)*
District name and code	*(name)*	*(DID)*
Name and PID of primary respondent	*(name)*	*(PID)*
Name and PID of secondary respondent	*(name)*	*(PID)*

B. Livelihood changes

B.1 Changes

Most important changes in the last ten years			
B.1.1. Positive changes	Rank (1-5)	Reason/Impact	
B.1.2. Negative changes	Rank (1-5)	Reason/Impact	Coping mechanism
B.1.3. Subsistence activities	Rank (1-5)	Reason for change/impact	
B.1.4. Farming techniques or crops	Rank (1-5)	Reason for change/Impact	
B.1.5. Forest techniques or resources	Rank (1-5)	Reason for change/Impact	
B.1.6. Planned changes (subsistence, farming, forestry)	Rank (1-5)	Reason for planned change/Anticipated impact	

B.2. Previous and current problems

B.2.1. Major problems ten years ago	Rank (1-5)	Coping mechanism	Changes

B.2.2. Major problems now	Rank (1-5)	Coping mechanism	Possible solutions
B.2.3. Worries/Anticipated problems	Rank (1-5)	Preventative/risk reducing action	Possible solutions
B.2.4. What would it take to make your life better	Rank (1-5)	Anticipated impact	

B.2.5. Happiness/Satisfaction with life now compared to ten years ago	

C. Changes in health situation in the last ten years

C.1. Illness in household: who	More/ Less	Reason	Treatment & changes
C.2. General health changes (community)	More/ Less	Reason	Treatment & changes

D. Climatic changes, impact & adaptation

D.1. Seasons

Name of season	Change in time	How long ago?	Marker (beginning/end)	weather problems (new/normal)

D.2. Rainfall

D.2.1. Timing/Amounts/Intensity				
Season	Change	How long?	Impact	Coping/preventative mechanism

D.3. Snow

D.2.1. Timing/Amounts/Intensity				
Season	Change	How long?	Impact	Coping/preventative mechanism

D.4. Temperature

Season (+, -, 0)	How long?	Impact	Coping/Preventative mechanism

D.5. Wind & storms

D.5.1. Time/Intensity/Frequency/Direction/Other characteristics?				
Season	Change	How long?	Impact	Coping/Preventative mechanism

D.6. Hail

D.6.1. Frequency/Size				
Season	Change	How long?	Impact	Coping/ Preventative mechanism

D.7. Rivers, water sources & flooding

D.7.1. Quantity & variability,				
Season	Change	How long?	Impact	Coping/preventative mechanism

D.7.2. Flooding frequency & intensity				
Season	Change	How long?	Impact	Coping/preventative mechanism

Landslides and/or avalanches

D.7.3. Landslides & avalanches: frequency & intensity				
Season	Change	How long?	Reason for change	Coping/preventative mechanism

D.8. Plants

D.8.1. Timing				
Species	Flowering/fruiting/growth season change	Reason	Impact	Coping mechanism

D.8.2. Occurrence/Change in place					
Species	Where now?	How long?	Reason	Impact	Coping mechanism

D.8.3. New or more abundant species				
Species	How long? (where?)	Reason	Impact	Coping mechanism

D.8.4. Disappeared or less abundant species				
Species	How long? (where)	Reason	Impact	Coping mechanism

D.9. Wild animals

D.9.1. Timing				
Species	Migration/breeding season change	Reason	Impact	Coping mechanism

D.9.2. Occurrence/Change in place					
Species	Where now?	How long?	Reason	Impact	Coping mechanism

D.9.3. New or more abundant species				
Species	How long? (where?)	Reason	Impact	Coping mechanism

D.9.4. Disappeared or less abundant species				
Species	How long? (where)	Reason	Impact	Coping mechanism

D.10. Crop

D.10.1. Direct climatic impacts				
Crop species	Climatic factor	Impact	Severe (1-5)	Coping/preventative mechanism

D.10.2. Change in crop diseases					
Species	More/ less	Timing/stage attacked/impact	How long?	Severe (1-5)	Coping/ Preventative mechanism

D.10.3. Insect attacks					
Species	More/ less	Timing/stage attacked/impact	How long?	Severe (1-5)	Coping/Preventative mechanism

D.11. Impacts on forests & other non-cultivated natural resources

D.11.1. Direct climatic impacts				
Species/ resource	Climatic factor	Impact	Severe (1-5)	Coping/preventative mechanism

D.11.2. Change in diseases					
Species	More/ less	Timing/stage attacked/impact	How long?	Severe (1-5)	Coping/ Preventative mechanism

D.11.3. Insect attacks					
Species	More/ less	Timing/stage attacked/impact	Severe (1-5)	How long?	Coping/Preventative mechanism

D.12. Problems & opportunities

D.12.1. Most important problems caused by climate change			
Impact	Severe (1-5)	Climatic factor	Preventative/Coping mechanism

D.12.2. Any positive impact of climate change?			
Impact	Rank (1-5)	Climatic factor	Actions needed to take advantage of the change

D.12.3. Planned or considered changes due to climate change			
Planned adaptations	Reason/Advantages	Disadvantages	Requirements

D.12.4. Existing (e) or tried (t) changes		
Adaptations	Reason/Advantages	Disadvantages/Reason for abandoning

E. Information sources & reliability

From where do you get information on

E.1. Climate change (in general)	Importance (1-5)	Reliability (1-5)
E.2. Weather forecast	Importance (1-5)	Reliability (1-5)
E.3. Seasons	Importance (1-5)	Reliability (1-5)
E.4. Climatic risks & how to cope	Importance (1-5)	Reliability (1-5)
E.7. Farming techniques/crops/animals	Importance (1-5)	Reliability (1-5)
E.8. Forestry	Importance (1-5)	Reliability (1-5)
E.9. Livelihood options	Importance (1-5)	Reliability (1-5)

Appendix C8 The implications of road establishment on livelihoods

The design of this data collection instrument is based on the format of the PEN prototype questionnaire which will also provide data to be used in this study. However, unlike the PEN survey, this study will involve a cross-sectional survey relying on recall data collected in reference to two time periods;- <mark>one year ago (2012) and seven years ago (2006).</mark> These two time periods represent periods before and after the construction of the "*Beni-Jomsom-Sadak road*" which runs through study sites in the Mustang district.

This instrument (RS 1.2) will focus on general household level data necessary for answering the specific research questions of the study.
It is expected that this instrument will only be applied in the control village of *Lulang*, as such data for the object villages of *Lete* and *Kunjo* are already available from the PEN surveys.

General Household information

A. Identification

1. Identification and location of household.

		(name)	(HID)
1.	Household name and code		
2.	Distance of the household from the centre of village (in *minutes of walking* and in *km*)	1. *min*	2. *km*
3.	Community Name		

B. Household composition

1. Who are the members of the household?

1. Personal Identification number (PID)	* Name of household member	2. Relation to household head[1]	3. Year born[2] (yyyy)	4. Sex (0=male 1=female)	5. Education (number of years completed)
1		Household head = code 0			
2					
3					
4					
5					
6					
7					
10					
12					
13					
14					

1) Codes: 1=spouse (legally married or cohabiting); 2=son/daughter; 3=son/daughter in law; 4=grandchild; 5=mother/father; 6=mother/father in law; 7=brother or sister; 8=brother/sister in law; 9=uncle/aunt; 10=nephew/niece; 11=step/foster child; 12=other family; 13=not related (e.g., servant).
2) One may ask about age, and the calculate 'year born' when entering data.

2. We would like to ask some questions regarding the head of this household.

1.	What is the marital status of household head? *Codes: 1=married and living together; 2=married but spouse working away; 3=widow/widower; 4=divorced;; 5=never married; 9=other, specify:*	
2.	How long ago was this household formed (see definition of household)	*years*
3.	Was the household head born in this village? *If 'yes', go to 5.*	*(1-0)*
4.	**If 'no':** how long has the household head lived in the village?	*years*
5.	What is the caste to which the household head belongs?	

C. Land

1. Please indicate the amount of land (in hectares) that you owned and have rented in/out **in 2012** and **in 2006**.

Note: See definitions of land categories in the Technical Guidelines.

Category	1. Area in 2012 *(ha)*	2. Ownership in 2012 *(code-tenure)*	Main products grown/harvested in 2012 Max 3 *(code-product)*			6. Area in 2006 *(ha)*	7. Ownership in 2006	Main products grown/harvested in 2006 Max 3 *(code-product)*		
			3. Rank1	**4. Rank2**	**5. Rank3**			**8. Rank1**	**9. Rank2**	**10. Rank3**
Forest:										
1. Natural forest										
2. Managed forests										
3. Plantations										
Agricultural land:										
4. Cropland										
5. Pasture (natural or planted)										
6. Agroforestry										
7. Silvipasture										
8. Fallow										
9. Other vegetation types/land uses (residential, bush, grassland, wetland, etc.)										
10. Total land owned (1+2+3+…+9)										
11. Land rented out (**included** in 1-9)										
12. Land rented in (**not included** in 1-9)										

D. Assets and savings

1. Please indicate the type of house you have/had **in 2012 and in 2006**?

	in 2012	**in 2006**
1. Did you have your own house? [1]		
2. What is the type of material of (most of) the walls? [2]		
3. What is the type of material of (most of) the roof? [3]		
4. How many m^2 approx. is the house?	m^2	m^2

1) Codes: 0=no; 1=own the house on their own; 2=own the house together with other household(s); 3=renting the house alone; 4=renting the house with other household(s); 9=other, specify:

2) Codes: 1=mud/soil; 2=wooden (boards, trunks); 3=iron (or other metal) sheets; 4=bricks or concrete; 5=reeds/straw/grass/fibers; 9=other, specify:

3) Codes: 1=thatch; 2=wooden (boards); 3=iron or other metal sheets; 4=tiles; 9=other, specify:

2. Please indicate the number and value of implements and other large household items that were owned by the household in 2012 and in 2006.
Note: see latest version of "PEN codes list" for a complete list of items and codes.

	in 2012		**in 2006**	
	1. No. of units owned	**2. Total value (current sales value of all units, not purchasing price)**	**3. No. of units owned**	**4. Total value (current sales value of all units, not purchasing price)**
1. Car/truck				
2. Tractor				
3. Motorcycle				
4. Bicycle				
5. Handphone/phone				
6. TV				
7. Radio				
8. Cassette/CD/ VHS/VCD/DVD/ player				
9. Stove for cooking (gas or electric only)				
10. Refrigerator/freezer				
11. Fishing boat and boat engine				
12. Chainsaw				
13. Plough				
14. Scotch cart				
15. Shotgun/rifle				
16. Wooden cart or wheelbarrow				
17. Furniture				
18. Water pump				

			in 2012	in 2006
19. Solar panel				
99. Others (worth more than approx. 50 USD purchasing price)				

3. Please indicate the savings and debt the household had in in 2012 and in 2006.

	in 2012	in 2006
1. How much does the household have in savings in banks, credit associations or savings clubs?	Lc$	Lc$
2. How much does the household have in savings in non-productive assets such as gold and jewelry?	Lc$	Lc$
3. How much does the household have in outstanding debt?	Lc$	Lc$

E. Forest resource base

		in 2012	in 2006
1. How far is it from the house/homestead to the edge of the nearest natural or managed forest that you have access to and can use?	1. … measured in terms of distance (straight line)?	km	km
	2. … measured in terms of time (in minutes of walking)?	min	min
2. Did your household collect firewood? *If 'no', go to 8.*		(1-0)	(1-0)
3. **If 'yes'**: how many hours per week did the members of your household spend on collecting firewood for family use? (adult time should be reported; child time = 50 % of adult time)		(hours)	(hours)
4. Did your household spend more or less time on getting firewood than you did 5 years before? *Codes: 1=more; 2=about the same; 3=less*			
5. How has availability of firewood changed during the 5 years before? *Codes: 1=declined; 2=about the same; 3=increased* *If code '2' or' 3', go to 7.*			

6. **If declined** (code '1' on the question above), how has the household responded to the decline in the availability of firewood? *Please rank the most important responses, max 3.*	**Response**	**Rank 1-3**	
	1. Increased collection time (e.g., from further away from house)		
	2. Planting of trees on private land		
	3. Increased use of agricultural residues as fuel		
	4. Buying (more) fuelwood and/or charcoal		
	5. Buying (more) commercial fuels (kerosene, gas or electricity)		
	6. Reduced the need for use of fuels, such as using improved stove		

	7. More conservative use of fuelwood for cooking and heating		
	8. Reduced number of cooked meals		
	10. Use of improved technology		
	11. Increased use of non-wood wild products (ex. reeds)		
	12. Restricting access/use to own forest		
	13. Conserving standing trees for future		
	14. Making charcoal		
	9. Other, specify:		
7. Has your household planted any woodlots or trees on farm during the <mark>5 years</mark> before? *If 'no', go to next section.*		*(1-0)*	*(1-0)*
8. **If yes:** what are the main purpose(s) of the trees planted? *Please rank the most important purposes, max 3.*	**Purpose**	**Rank 1-3**	
	1. Firewood for domestic use		
	2. Firewood for sale		
	3. Fodder for own use		
	4. Fodder for sale		
	5. Timber/poles for own use		
	6. Timber/poles for sale		
	7. Other domestic uses		
	8. Other products for sale		
	9. Carbon sequestration		
	10. Other environmental services		
	11. Land demarcation		
	19. Other, specify:		

F. Forest User Groups (FUG)

Note: The enumerator should first explain what is meant by a FUG, cf. the Technical Guidelines.

		in 2012	in 2006
1. Were you or any member of your household a member of a Forest User Group (FUG)? *If 'no', go to 11.*		*(1-0)*	*(1-0)*
2. Did someone in your household normally/regularly attend the FUG meetings? *If 'no', go to 5.*		*(1-0)*	*(1-0)*
3. **If 'yes'**: in your household, who normally attended FUG meetings and participated in other FUG activities? *Codes: 1=only the wife; 2=both, but mainly the wife; 3=both participate about equally; 4=both, but mainly the husband; 5=only the husband; 6=mainly son(s); 7=mainly daughter(s); 8=mainly husband & son(s); 10=mainly wife & daughter(s); 9=other arrangements not described above.*			
4. How many person days (= full working days) did the household members spend in total on			

	in 2012	in 2006
FUG activities (meetings, policing, joint work, etc)?	*days*	*days*
5. Did your household make any cash payments/contributions to the FUG? *If 'no', go to 7.*	*(1-0)*	*(1-0)*
6. **If 'yes':** how much did you pay? *(Lc$)*		
7. Did your household receive any cash payments from the FUG (e.g., share of sales)? *If 'no', go to 9.*	*(1-0)*	*(1-0)*
8. **If 'yes':** how much did you receive? *(Lc$)*		
10. Overall, how would you say the existence of the FUG has affected the benefits that the household got from the forest? *Codes: 1=large negative effect; 2=small negative effect; 3=no effect; 4=small positive effect; 5=large positive effect.*		

G. Crisis and unexpected expenditures

1. Did the household face any major income shortfalls or unexpectedly large expenditures?

Event	in 2012				in 2006			
	1. How severe?[1] *(0,1 or 2)*	**2. How did you cope with the income loss or costs?** *Rank max. 3[2]* (See codes below table)			**3. How severe?[1]** *(0,1 or 2)*	**4. How did you cope with the income loss or costs?** *Rank max. 3[2]* (See codes below table)		
		2. Rank1	**3. Rank2**	**4. Rank3**		**2. Rank1**	**3. Rank2**	**4. Rank3**
1. Serious crop failure								
2. Serious illness in family (productive age-group adult unable to work for more than one month during past 12 months, due to illness, or to taking care of ill person; or high medical costs)								
3. Death of productive age-group adult								
4. Land loss (expropriation, etc.)								
5. Major livestock loss (theft, drought, etc.)								
6. Other major asset loss (fire, theft, flood, etc.)								
7. Lost wage employment								
8. Wedding or other costly social events								
9. Payment for sale of hh products arrive later than expected								
10. Delayed income from forest products								
11. Fine from environmental regulation agency								
12. Other, specify:								

1) Codes severity: 0=no crisis; 1=yes, moderate crisis; 2=yes, severe crisis. See Technical Guidelines for definitions.

2) Codes coping:

1. *Harvest more forest products*
2. *Harvest more wild products not in the forest*
3. *Harvest more agricultural products*
4. *Spend cash savings*
5. *Sell assets (land, livestock, etc.)*
6. *Do extra casual labour work*
7. *Assistance from friends and relatives*
8. *Assistance from NGO, community org., religious org. or similar*
9. *Get loan from money lender, credit association, bank etc.*
10. *Tried to reduce household spending*
11. *Did nothing in particular*
12. *Spent savings / retirement money*
13. *Reduced number of meals taken*
14. *Borrowed against future earnings*
15. *Sold food that would otherwise be used for household consumption*
16. *Rented out land*
17. *Started new business*
18. *Changed to different type of livestock*
19. *Harvested premature crops.*
20. *Changed cropping patterns or types of crops planted*
21. *Other, specify:*

H. Forest services

1. Did the household receive any cash or in kind payments related to the following forest services?

	in 2012		in 2006	
Principal purpose	**1. Have received?** *(1-0)*	**2. If yes, amounts (values) received** *(Lc$)* *(if nothing, put '0')*	**3. Have received?** *(1-0)*	**4. If yes, amounts (values) received** *(Lc$)* *(if nothing, put '0')*
1. Tourism				
2. Water catchments projects				
3. Biodiversity conservation				
4. Tree planting				
5. Others, specify:				

I. Forest clearing

		in 2012			in 2006		
1. Did the household clear any forest? *If 'no', go to 9.*				*(1-0)*			*(1-0)*
		in 2012			in 2006		
If YES:	2. How much forest was cleared?			*ha*			*ha*
	3. What was the cleared forest (land) used for? *Codes: 1=cropping; 2=tree plantation; 3=pasture; 4=non-agric uses (Rank max 3)*	1.Rank1	2.Rank2	3.Rank3	1.Rank1	2.Rank2	3.Rank3
	4. If used for crops (code '1' in question above), which principal crop was grown? *(code-product) Rank max 3*	1.Rank1	2.Rank2	3.Rank3	1.Rank1	2.Rank2	3.Rank3
	5. What type of forest did you clear? *(code-forest)*						
	6. If secondary forest, what was the age of the forest?			*years*			*years*
	7. What was the ownership status of the forest cleared? *(code tenure)*						
	8. How far from the house was the forest cleared located?			*km*			*km*
9. Has the household during the 5 years before cleared forest? *If 'no', go to 11.*				*1-0*			*1-0*
10. **If 'yes':** how much forest (approx.) has been cleared during the 5 years before? *Note: This should include the area reported in question 2.*				*ha*			*ha*
11. How much land used by the household has been abandoned during the 5 years before (left to convert to natural re-vegetation)?				*ha*			*ha*

J. Welfare perceptions and social capital

	in 2012	in 2006
1. All things considered, how satisfied were you with your life? *Codes: 1=very unsatisfied; 2=unsatisfied; 3=neither unsatisfied or satisfied; 4=satisfied; 5=very satisfied*		
2. Was the household's food production and income sufficient to cover what you consider to be the needs of the household? *Codes: 1=no; 2=reasonable (just about sufficient); 3=yes*		
3. Compared with other households in the village (or community), how well-off was your household? *Codes: 1=worse-off; 2=about average; 3=better-off*		

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		in 2012	in 2006
4.	How well-off was your household compared with the situation 5 years before? *Codes: 1=less well-off now; 2=about the same; 3=better off now* *If 1 or 3, go to 5. If 2, go to 6.*		
5. **If worse- *or* better-off:** what is the main reason for the change? *Please rank the most important responses, max 3.*	**Reason: Change in …**	**Rank 1-3**	**Rank 1-3**
	1. off farm employment		
	2. land holding (e.g., bought/sold land)		
	3. forest resources		
	4. output prices (forest, agric,…)		
	5. outside support (govt., NGO,..)		
	6. remittances		
	7. cost of living (e.g., high inflation)		
	8. war, civil strife, unrest		
	9. conflicts in village (non-violent)		
	10. change in family situation (e.g. loss of family member/a major bread-winner)		
	11. illness		
	12. access (e.g. new road,…)		
	13. increased/reduced land area for agric. production		
	14. religious awakening (i.e., found religion, converted to a new religion, born again or saved)		
	15. started a new business/lost or less business		
	16. livestock (gain or loss)		
	17. material assets, incl. house (gain or loss)		
	18. increased regulations		
	19. education / increased knowledge		
	20. more engaged in marketing/trade		
	21. political stability		
	22. crop failure/raiding		
	23. changed drinking habits (started/stopped drinking alcohol)		
	24. changes in natural resources (fish, etc.)		
	25. working for themselves (no longer under a patron)		
	26. more time to work		
	27. Joined cooperative		
	28. Forced to travel for family matters		
	29. Fire destroyed everything		
	30. Change in job		
	31. other (specify):		

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	in 2012	in 2006
6. Do you consider your village (community) to be a good place to live? *Codes: 1=no; 2=partly; 3=yes*		
7. Do you **in general** trust people in the village (community)? *Codes: 1=no; 2=partly, trust some and not others; 3=yes*		
8. Could you get help from other people in the village (community) if you are in need, for example, if you need extra money because someone in your family is sick? *Codes: 1=no; 2= can sometimes get help, but not always; 3=yes*		

K. Household mobility

1. How often do you or other member from your household travel to and from the nearest town **(make them aware of which town center by name)** center?

Situation in 2012			
Household member	**Average number of trips per month**	**Average length or duration of stay**	**Main Reason(s) for trip**
Situation in 2006			
Household member	**Average number of trips per month**	**Average length or duration of stay**	**Main Reason(s) for trip**

The design of this data collection instrument is based on the format of the PEN prototype questionnaire which will also provide data to be used in this study. However, unlike the PEN survey, this study will involve a cross-sectional survey relying on recall data collected in reference to two time periods;- one year ago (2012) and seven years ago (2006). These two time periods represent periods before and after the construction of the "*Beni-Jomsom-Sadak road*" which runs through study sites in the Mustang district.

This instrument (RS 1.3B/2006) will focus on household level income data from 2006, necessary for answering the specific research questions of the study. It is expected that this instrument will only be applied in the control village of *Lulang*, as such income data for the object villages of *Lete* and *Kunjo* are already available from the PEN surveys.

When inquiring about events in 2006 (implementing questionnaire 1.3B), it is important to first remind the respondent of the end of the Nepali civil war which coincides with this period. Take a few minutes to ask the respondents to think back to the time when the civil unrest ended and their household economic situation at that time. This short conversation will help "jog" the respondent's memory back to that distant time period, allowing them to make reference to this major event (end of the civil unrest) when answering the questions.

Household Income survey

Note: The researcher should list the most common products in the various tables, based on RRAs and pre-testing of the questionnaire. After asking about these pre-listed products, the enumerator should ask if there are any other products not mentioned that the household has harvested/collected.

Control information

A. Identification

1. Identification of the household.

1.	Household name and code	*(name)*	(HID)
2.	Village name and code	*(name)*	(VID)
3.	Name and PID of primary respondent	*(name)*	(PID)
4.	Name and PID of secondary respondent	*(name)*	(PID)

B. Direct forest income (income from unprocessed forest products)

1. How much raw-material forest products did the members of your household collected for both own use and sale **in 2006**?
Note: Income from plantations is defined as forest income, while agroforestry income is categorized as agric. income (H).
Note: The quantities of unprocessed forest products used as inputs in making processed forest products should only be reported in section C, table 2, and not in the table below.

<table>
<tr><th colspan="14">Situation in 2006</th></tr>
<tr>
<th>1) Forest product</th>
<th>2) Collected by whom?[1]

(see codes below table)</th>
<th colspan="2">Collected where?</th>
<th>5) Quantity collected

(7+8)</th>
<th>6) Unit</th>
<th colspan="2">Quantities consumed at home and sold:</th>
<th colspan="2">If products are sold:</th>
<th>11) Gross value

(5*9)</th>
<th>12) Transport/ marketing costs

(total)</th>
<th>13) Purchased inputs & hired labour</th>
<th>14) Net income (11-12-13)</th>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Land type
(Natural forest; Managed forest; Plantation)</td>
<td>4) Ownership
(Private or community/government)</td>
<td></td>
<td></td>
<td>7) Own use (incl. gifts)</td>
<td>8) Sold (incl. barter)</td>
<td>9) Price per unit</td>
<td>10) Type of market
(1: in vdc; 2: outside vdc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td>
</tr>
</table>

Firewood												
Timber												
Fodder												
Grass												
Mushroom												
Stones (for building)												
Forest medicines												
Honey												
Edible bamboo (Tusa*)												
Bushmeat												

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.

C. Forest-derived income (income from processed forest products)

1. How much processed forest products did the members of your household produced **in 2006**?

1) Product (code-product)	2) Who in the house-hold did the work?[1]	3) Quantity produced (5+6)	4) Unit	Quantities consumed at home and sold:		If products are sold:		9) Gross value (3*7)	10) Purchased inputs & hired labour	11) Transport/ marketing costs	12) Net income excl. costs of forest inputs (9-10-11)
				5) Own use (incl. gifts)	6) Sold (incl. barter)	7) Price per unit	8) Type of market *(1: in vdc; 2: outside vdc)*				
Secu (local umbrella from bamboo)											
Broom (from bamboo)											
Local paper (from local pulp "Lokta")											
Baskets (from bamboo)											
Rope (from bamboo)											
Furniture (Bed, chairs, table, cupboard etc., from timber)											

1) Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally; 8=none of the above alternatives.

D. Fishing and aquaculture

1. How much fish did your household catch **exclusively from the wild** (rivers, lake, sea) **in 2006**?

		Situation in 2006						
1) Type of fish (*list local names*)*	**2) Total catch (kg)** (3+4)	**Quantities consumed at home and sold:**		**If products are sold:**		**7) Gross value** (2*5)	**8) Costs** (inputs, hired labour, marketing)	**9) Net income** (7 – 8)
		3) Own use (incl. gifts)	**4) Sold** (incl. barter)	**5) Price per kg**	**6) Type of market** *(1: in vdc; 2: outside vdc)*			
Asala*								
Kafre*								

Local Nepali name of fish

E. Non-forest environmental income

1. In addition to forest products and fish included in the previous tables, how much of **other wild products** (e.g., from grasslands, fallows, etc.) did your household collect **in 2006**?

	Collected where?				Quantities consumed at home and sold:		If products are sold:				
1) Type of product *(code-product)*			**4) Quantity collected (6+7)**	**5) Unit**					**10) Gross value (4*8)**	**11) Costs (inputs, hired labour, marketing, etc.)**	**12) Net income (9-10)**
	2) Land type *(Pasture, Fallow, swamp or desert)*	**3) Owner-ship** *(Private land or community/government land)*			**6) Own use (incl. gifts)**	**7) Sold (incl. barter)**	**8) Price per unit**	**9) Type of market** *(1: in vdc; 2: outside vdc)*			
Grass for animals											
Stones											
Grass for compost											

F. Wage income

1. How much paid work has any member of the household had **in 2006**?
Note: One person can be listed more than once for different jobs.

<table>
<tr><td colspan="5" align="center">Situation in 2006</td></tr>
<tr>
<td>1) Household member (name)</td>
<td>2) Type of work
(code-work)</td>
<td>3) Average number of days worked per month</td>
<td>4) Average daily wage rate</td>
<td>5) Total wage income per month</td>
</tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
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</table>

G. Income from own business (not forest or agriculture)

1. Were you involved in any types of business, and if so, what are the gross income and costs related to that business **in 2006**?
Note: If the household is involved in several different types of business, you should fill in one column for each business.

Situation in 2006			
	1. Business 1	**2. Business 2**	**3. Business 3**
1. What is your type of business?[1]			
2. Gross income (sales)			
Costs:			
3. Purchased inputs			
4. Own non-labour inputs (equivalent market value)			
5. Hired labour			
6. Transport and marketing cost			
7. Capital costs (repair, maintenance, etc.)			
8. Other costs			
9. Net income (2 - items 3-8)			
10. Current value of capital stock			

1) Codes: 1=shop/trade; 2=agric. processing; 3=handicraft; 4=carpentry; 5=other forest based; 6=other skilled labour; 7=transport (car, boat…);
8=lodging/restaurant; 9=brewing; 10=brick making; 11=landlord/real estate;
12=herbalist/traditional healer/witch doctor; 13=quarrying; 19=other, specify:

H. Income from agriculture – crops

1. What are the quantities and values of crops that household has harvested **in 2006**?

Situation in 2006							
1) Crops *(code-product)*	**2) Area of production** *(pathi*)*	**3) Total production (5+6)**	**4) Unit (for production)**	**5) Own use (incl. gifts)**	**6) Sold (incl. barter)**	**7) Price per unit**	**8) Total value (3*7)**
Vegetables							
Maize							
Millet							
Corn							
Wheat							
Barley (*Uwa**)							
Mustard							
Beans							
Rice							
Other; specify.							

2. What were the quantities and values of inputs used in crop production **in 2006** (this refers to agricultural cash expenditures)?
Note: Take into account all the crops in the previous table.

Situation in 2006				
1) Inputs	**2) Quantity**	**3) Unit**	**4) Price per unit**	**5) Total costs (2*4)**
1. Seeds				
2. Fertilizers				
3. Pesticides/herbicides				
4. Manure (compost)				
5. Draught power				
6. Hired labour				
7. Hired machinery				
8. Transport/marketing				
19. Other, specify:				
20. Payment for land rental				

I. Income from livestock

1. What is the number of ADULT animals your household had **in 2006**?

Situation in 2006									
Livestock	**1) Beginning number in 2006**	**2) Sold (incl. barter), live or slaught-ered**	**3) Slaught-ered for own use (or gift given)**	**4) Lost (theft, died,..)**	**5) Bought or gift received**	**6) New from own stock**	**7) End number (now) (2-3-4-5+6+7)**	**8) Price per adult animal**	**9) Total end value (8*9)**
1. Cattle									
2. Buffalos									
3. Goats									
4. Sheep									
5. Pigs									
6. Donkeys									
7. Chicken									
8. Horses									
9. Rabbit									
19. Other, specify:									

2. What were the quantities and values of animal products and services that you produced **in 2006**?

Situation in 2006						
1) Product/service	**2) Production (4+5)**	**3) Unit**	**4) Own use** (incl. gifts)	**5) Sold** (incl. barter)	**6) Price per unit**	**7) Total value** (2*6)
1. Meat [1]						
2. Milk [2]						
3. Butter						
4. Cheese						
5. Ghee						
6. Eggs						
7. Hides and skin						

8. Wool						
9. Manure						
10. Draught power						
11. Bee hives						
12. Honey						
13. Curdled milk						
14. Soap						
15. Transportation (eg: horses for carrying produce to markets)		Trips				
19. Other, specify						

1) Make sure this corresponds with the above table on sale and consumption of animals.
2) Only milk consumed or sold should be included. If used for making, for example, cheese it should not be reported (only the amount and value of cheese).

3. What were the quantities and values of inputs used in livestock production **in 2006** (cash expenditures)?

Situation in 2006					
1) Inputs	**2) Unit**	**3) Quantity per week**	**4) Quantity per year** **(3*52 weeks)**	**5) Price per unit**	**6) Total costs (4*5)**
1. Feed/fodder					
2. Rental of grazing land					
3. Medicines, vaccination and other veterinary services					
4. Costs of maintaining barns, enclosures, pens, etc.					
5. Hired labour					
6. Inputs from own farm					
9. Other, specify:					

J. Other income sources

1. Please list any other income that the household has received and the amount received **in 2006**.

<table>
<tr><td colspan="2" align="center">**Situation in 2006**</td></tr>
<tr><td>**1) Type of income**</td><td>**2) <mark>Average</mark> amount received per month**</td></tr>
<tr><td>1.   Remittances</td><td></td></tr>
<tr><td>2.   Support from government, NGO, organization or similar</td><td></td></tr>
<tr><td>3.   Gifts/support from friends and relatives</td><td></td></tr>
<tr><td>4.   Pension</td><td></td></tr>
<tr><td>5.   Payment for forest services</td><td></td></tr>
<tr><td>6.   Payment for renting out land (if in kind, state the equivalent in cash)</td><td></td></tr>
<tr><td>7.   Compensation from logging or mining company (or similar)</td><td></td></tr>
<tr><td>8.   Payments from FUG</td><td></td></tr>
<tr><td>9.   Other, specify:</td><td></td></tr>
</table>

K. Enumerator/researcher assessment of the household

*Note: This is to be completed by the enumerator and/or the PEN partner. If the enumerator doing the A2 (and Q4) is **not** the one who has been doing previous quarterly surveys, those who have had the most exposure to the household should fill in questions 2-5.*

1.	During the last interview, did the respondent smile or laugh? *Codes: (1) neither laughed nor smiled (somber); (2) only smiled; (3) smiled and laughed; (4) laughed openly and frequently.*	
2.	Based on your impression and what you have seen (house, assets, etc.), how well-off do you consider this household to be compared with other/average households in the village? *Codes: 1=worse-off; 2=about average; 3=better-off*	
3.	How reliable is the information **generally** provided by this household? *Codes: 1=poor; 2=reasonably reliable; 3=very reliable*	
4.	How reliable is the information on **forest collection/use** provided by this household? *Codes: 1=poor; 2=reasonably reliable; 3=very reliable*	
5.	If the forest information is not so reliable (code 1 above), do you think the information provided overestimate or underestimate the actual forest use? *Codes: 1=underestimate; 2=overestimate; 3= no systematic over- or underestimation; 4=don't know.*	

Appendix D1 Seasonal calendars

Seasonal calendar Tibrekot CFUG, Hemja, Kaski September 2006

	April-May	May-Jun	Jun-July	July-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nove-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-April
European months	April-May	May-Jun	Jun-July	July-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nove-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-April
Nepalese months	Baisakh	Jestha	Ashad	Srawan	Bhadra	Aswin	Karkik	Mansir	Paush	Magh	Fagun	Chaitra
1. Forest Activities												
Collection of dry firewood (1 week from 1st day of Dashain)						■						
Collection of grasses					■							
Collection of firewood/Green (contractor)								■	■			
Collection of Lops and tops										■	■	
Collection of leaf litters											■	■
Risk of forest fire	■											■
Leaf shedding period											■	■
Forest weeding/thinning prunnig	■				■	■						■
Charcoal production (almost non-existing)		■				■					■	
2. Agricultural activities												
Rice												
Seedling production	■	■	■									
Rice transplanting		■	■	■								
Weeding				■	■							
Harvesting						■	■					
Potato												
Land Preparation							■	■				
Seed sowing							■	■				
Harvesting										■	■	
Maize												
Seed sowing	■											■
Weeding		■	■									
Harvesting			■	■								

	1	2	3	4	5	6	7	8	9	10	11	12
Vegetables							▓	▓				
Millets												
Seedling production	▓	▓										
Seedling transplanting			▓	▓								
Harvesting									▓	▓		
3. Others												
Labour deficiency period			▓	▓	▓		▓	▓				
Food deficit period					▓	▓	▓					
Orange harvesting period							▓	▓	▓			
Fodder/grass deficit months	▓											▓
Fodder sufficient months				▓	▓							

Seasonal calendar Kankali CFUG, Chainpur, Chitwan, July 2006

Month	January				February				March				April				May				June				July				August				September				October				November				December			
Weeks	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

ACTIVITIES

A. Agricultural Activities (Crops)

Activity	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
A1 Summer Rice																																																
Seeding																				▓	▓	▓																										
Planting																									▓	▓	▓	▓	▓	▓	▓																
Weeding																													▓	▓	▓	▓	▓	▓														
Harvesting																																		▓	▓	▓	▓	▓	▓									
A2 Spring Maize (Fagune)																																																
Seeding									▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓																													
Weeding													▓	▓	▓	▓	▓	▓	▓	▓	▓	▓																										
Harvesting																					▓	▓	▓	▓	▓	▓	▓	▓																				
A3 Winter Maize (Bhadra)																																																
Seeding																													▓	▓																		
Weeding																																					▓	▓										
Harvesting																																														▓	▓		
A4 Autumn Maize (Kartike)																																																
Seeding																																									▓	▓						
Weeding																																													▓	▓	▓	
Harvesting (following year)									▓	▓																																						
A5 Wheat																																																
Seeding																																									▓	▓	▓					
Harvesting (following year)									▓	▓																																						
A5 Mustard/Oilseeds (Alas, Sarsu, Sunflower)																																																
Seeding																																					▓	▓	▓									
Harvesting (following year)					▓	▓	▓																																									
A6 Pulses/Lentils (Musuro, Peas, gram, Rajma)																																																
Seeding					▓	▓	▓																																									

Monthly Calendar of Activities (shaded cells indicate the weeks when each activity takes place; weeks 1–4 per month).

Code	Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Harvesting			2,3									
A7	**Autumn Rice**												
	Seeding		2										
	Planting			2,3									
	Weeding				2								
	Harvesting						2,3,4						
A8	**Buckwheat (Phapar)**												
	Seeding											2,3,4	1
	Harvesting (Following year)			2,3,4	1								
A9	**Millet**												
	Seeding						2,3,4						
	Planting								1,2,3				
	Harvesting										2,3,4		
A10	**Potato**												
	Seeding										4	1,2	
	Weeding											2,3,4	
	Harvesting		1,2,3										
B. Forest Operation Activities													
B1	Forest cleaning/weeding	1–4	1–4	1,2								1–4	1–4
B2	Fireline maintenance			2,3									
B3	Tree marking											3,4	1,2
B4	Tree felling and sawing	1–4	1–4	1,2									
B5	Forest Patrolling	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4
B6	Selling of forest timber	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4
B7	Seedling production			2,3,4									
B8	Plantation						2,3,4	1–4	1,2,3				

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Gantt chart — seasonal calendar of activities (weeks 1–4 of each month, January–December).

Code	Activity	Jan 1	2	3	4	Feb 1	2	3	4	Mar 1	2	3	4	Apr 1	2	3	4	May 1	2	3	4	Jun 1	2	3	4	Jul 1	2	3	4	Aug 1	2	3	4	Sep 1	2	3	4	Oct 1	2	3	4	Nov 1	2	3	4	Dec 1	2	3	4
B9	Period of fuelwood (twig) and fodder collection			█				█							█					█		█			█										█				█				█					█	
B10	Permission for litter collection					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█																										
B11	Thakal thatch collection		█	█	█																																												
B12	General Assembly of FUG	█	█	█																																											█	█	█
B13	FUG Committee meeting			█				█				█				█				█				█				█			█					█				█				█					█
B14	FUG Council Meeting	█	█																																														
B15	Training/Workshop	█	█	█	█	█	█	█	█	█	█	█	█	█																												█	█	█					
C Other Activities																																																	
C1	Fire sensitive period													█	█	█	█	█	█	█	█	█	█	█																									
C2	Leaf shedding period							█	█	█	█	█	█	█	█																																		
C3	Medicinal plant collection period	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
C4	Fruiting period																																																
C5	Picnic period	█	█	█	█	█	█	█	█	█	█	█	█																																	█	█	█	█
C6	Period of poaching	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█																	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
C7	Period of high trespassing	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
D. Livestock feeding																																																	
D1	Stall feeding	█	█	█	█	█	█																			█	█	█	█	█	█	█	█	█	█														
D2	Grazing in river/streamside							█	█	█	█	█	█	█	█	█	█	█	█	█	█																												
D3	Grazing in forest																	█	█	█	█	█	█	█	█																								
D4	Fodders from farmlands	█	█	█	█	█	█																															█	█	█	█	█	█	█	█	█	█	█	█
D5	Fodder deficit period							█	█	█	█	█	█	█	█	█	█																													█	█	█	█
E	**Period of Irrigation**																									█	█	█	█	█	█	█	█																
F	**Food sufficient period**																									█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█		

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ACTIVITIES	Month	January				February				March				April				May				June				July				August				September				October				November				December			
	Weeks	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
G	Food deficit period							�																																										

Seasonal calendar, Mustang

Month	Cultural festivals	Agri cropping pattern	Forest\ Range use pattern
Chaitra (Mar-Apr)	• Chaitra Dashain- 1 day • Fagu Purnima(Toran-la)-3 Day: playing bow -arrow (Tir) 15-18 days	• Potato cultivation in remaining fields • Fallow tilling • Manure carrying	• Fuelwood collection • Cattle herd near village • Sheep herd near Kaski • Collection of pine needle in small amount
Baisakh (Apr-May)	• New Year Celebration- 1 day	• Maize & bean seed sowing in fallow • Pumpkin, amaranthus, soybean sowing along with maize • Bitter-buckwheat planting • Barley & naked barley (uwa) harvesting-end of month	• Fuelwood collection in small amount • Herds move upwards • Collection of Morchella mushroom • Collection of Cordyceps from 15th Baisakh
Jestha (May-Jun)	Jestha purnima, Ubhauli (village meeting)	• Barley & wheat & mustard harvest continue • Potato weeding & Maize sowing • Insecticide spraying-end of month for killing army pests	• Herds move to lekh (high altitude grassland) • Collection of mushroom- morchella, red, button (foritima, rato, twaei) • Collection of Cordyceps till 15th Jestha • Collection of green leafy vegetable (lasune, dhakayo)
Ashad (Jun-Jul)	• Ashad 11, Ubhauli (meeting)- at least 1 from each household	• Maize weeding 2-3 times • All others crops harvesting • Fallow tilling where buckwheat was harvested	• Collection of various mushrooms • Collection of Palang (strawberry) • Bamboo (Nigalo) young sprouted shoots collection-malungo, ghude, khasre spp • Cordyceps available
Shrawan (Jul-Aug)	• Shrawan Sakranti Celebration-1 Day • Janai Purne Celebration-1 Day	• Buckwheat sowing (sweet and sour) • Weeding buckwheat • Vegetable planting • Potato harvesting in small quantity	• Khun khane (yak blood drinking festival) • Collection of herbs- yarsagumba (cordyceps), nirmasi, chiraito (tite), kutki • Collection of snail
Bhadra (Aug-Sep)	• Bhadra Mela-3 Days (offer puja at meshram baraha mandir) celebrated by the village community	• Bean harvesting, weeding • Soil working in maize, potato	• Livestock herds in high altitude grassland (*lekh or danfe charan*) • Collection of fruits and herbs- ghuelo, chutro, aiselo, timaru,
Ashwin (Sep-Oct)	• Dashain Celebration- 1 – 5 days	• Maize cobs harvesting, amaranthus, soybean, pumpkin, potato harvesting	• Cattle and sheep herds starts to come down

Month	Cultural festivals	Agri cropping pattern	Forest\ Range use pattern
		• Buckwheat harvesting, thrashing • Grass cutting and storing	
Kartik (Oct-Nov)	• Tihar Celebration-1-3 days • Kartik 11, Udhauli (village meeting)	• All crops harvested by the end of this month • Land tilling • Barley, naked barley, garlic, mustard, wheat planting • Potato & buckwheat storing	• Cattle and sheep herds in the middle kharka (aulo charan) • Collection of herbs • Collection of Pangro fruit (horse chestnut)
Mangsir (Nov-Dec)		• Land tilling, • Barley, naked barley, garlic, wheat planting	• Collection of seabuckthorn
Paush (Dec-Jan)	• Offer worship (Puja) at Pangbu forest-1 Day		• Pine needle & fuelwood collection • Sheep herds move down • Cattle herds remain in the middle kharka
Magh (Jan-Feb)	• Maghe Sakranti Celebration-1 Day		• Pine needle & fuelwood collection • Sheep herds move down • Cattle herds remain in the middle kharka
Falgun (Feb-Mar)	• Fagu Purnima (according to calendar)	• Potato planting • Fallow tilling	• Less use of forest but used for fuelwood, pine needle, nigalo (broom) and taiyu (to make tool handles) • Collection of woods to make houses

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Appendix D2 Wealth ranking

Criteria for wealth Ranking in Lete VDC, Mustang

Wealth Category	Score	Description
Very Rich	1	- Having inherited property - Mostly living in city areas - Bank saving and money lenders
Rich	2	- Having house and land in other cities like Kathmandu, Pokhara, Jomsom, - Service holder - Bank Balance/ Saving - Inherited property - Hoteliers - Sufficient food - Medicinal plants traders - Receiving remittances - Contractors - Educated/higher education - Livestock rearing - Good house
Medium	3	- Less Lands - Out of debt - Fallow lands - Government Service holders - Food adequacy - Mule keepers - Literate - Bamboo weavers - Medicinal plant sellers
Poor	4	- Landless - Homeless - Mud/low quality house - Wage labour - Porter - Migrants (often leave village in time of uncertainties) - Food deficiency for about 6 months of a year - Debtor/loan - Illiterate - Masons - Disabled

Number of HH in different wealth categories in Lete VDC, Mustang

Group1		Group2		Group3	
Categories	No of HH	Categories	No of HH	Categories	No of HH
Very Rich	12	Very Rich	8	Very Rich	35
Rich	28	Rich	26	Rich	34
Medium	69	Moderately Rich	80	Medium	60
Poor	60	Poor	49	Poor	70
Total	169		163		164

Criteria for wealth ranking in Kunjo VDC, Mustang

Wealth Category	Score	Description
Rich	1	• Having inherited property • Surplus food production • Land rented out for farming • Holding mule, horse and other livestock • Small family size • Bank balance/Saving • Money lending • Educated/higher education • Land and/or house in cities like Kathmandu • Contractors
Medium	2	• Food adequacy, not surplus • Fallow land • Skills like carpentry, masonry • Small contractor • Teachers • Few livestock •
Poor	3	• Small landholding • Experiencing food deficit • Wage labour in village • Porters • Product shared farmers • Unskilled • Large family size • Debtor
Ultra Poor	4	• Homeless and landless • Disabled • Not cared by family members • Wage labour • Severe food scarcity

Number of HH under different wealth categories in Kunjo, Mustang

Group1*		Group2		Group3	
Categories	No of HH	Categories	No of HH	Categories	No of HH
Rich	15	Rich	18	Very Rich	15
Medium	24	Medium	35	Rich	30
Poor	87	Poor	73	Medium Rich	59
		Ultra Poor	0	Very Poor	21
Total	126		126		125

* The wealth ranking exercise was conducted by three different groups of assessors.

Number of households in different wealth groups in Tibrekot and Kankali FUGs

Category	Tibrekot	Kankali
Rich	14	46
Medium	201	284
Lower medium		745
Poor	7	423
Ultra poor		44
Total	222	1542

Appendix D3 A comparison of Lulang, Lete and Kunjo VDCs

Based on the framework for integrating villages, vegetation and non-timber forest products in central Nepal prepared by Olsen (1996).

Characteristics	Lete VDC			Kunjo VDC		Lulang VDC		
	Ghasa	Lete	Dhampu	Titi	Kunjo	Lamsung	Lulang	Khoriya
Elevation (m.a.s.l.)	1900	1900 - 2100	~ 1900	~ 2000	~ 2000	2200	2350	~ 2250
Main Crops	barley, potato and maize	barley, potato and maize	barley, potato and maize	barley, potato and maize	barley, potato and maize	maize, barley, wheat, potato	maize, barley, wheat, potato	maize, barley, wheat, potato
Irrigated fields	None	None	None	None	None	None	None	None
Rainfed fields; 2 crops / year	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas
Rainfed fields; 3 crops / 2years	none	none	none	none	none	none	none	none
Rainfed fields; 1 crop / year	none	none	none	none	none	none	none	none
Fertilizer	Directly, composted manure	Directly, composted manure	Directly, composted manure	Directly, composted manure	Directly, composted manure	Directly, composted manure	Directly, composted manure	Directly, composted manure
Main Livestock	Goat, sheep, cattle, buffalo	Goat, sheep, cattle, buffalo, yak	Goat, sheep, cattle, buffalo, yak	Goat, sheep, cattle, buffalo, yak	Goat, sheep, cattle, buffalo	Goat, sheep, cattle, buffalo,	Goat, sheep, cattle, buffalo	Goat, sheep, cattle, buffalo
Transhumance	common	common	common	common	common	common	common	common
Private trees	Very scarce	None	Very scarce	None	None	None	None	Very scarce
Forest Management systems	FUG, government	FUG, government	FUG, government	FUG, government	FUG, government	FUG, government	FUG, government	FUG, government
Forest holdings	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas
High land pastures	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas	Large areas
Main off-farm income	Tourism	Tourism	Tourism	Wage work	Wage work	Wage work	Wage work	Wage work

Appendix E SI unit conversion data

Gorkha

Product	Local Unit	Number of item measured	Average value equivalent to st. unit
Babiyo	Mutha	6	1,400 kg
Beshar	Mana	27	259,889 gm
Bhakari	Piece	21	5,414 kg
Bhue Ghans	Doko	37	19,668 kg
Bodi	Mana	15	459,333 gm
Chitro	Piece	29	10,211 kg
Dalo	Piece	17	1,150 kg
Danda	Piece	11	0,018 cubic meter
Doko	Piece	52	1,548 kg
Fodder	Mutha	7	20,429 kg
Fodder	Bhari	10	33,600 kg
Forest litter (Pat)	Doko	5	1,840 kg
Fuelwood-Dry	Bhari	62	33,105 kg
Fuelwood-Green	Bhari	43	36,395 kg
Ghocha	Bhari	6	34,000 kg
Ghum	Piece	8	1,115 kg
Gothe Mal	Doko	26	29,788 kg
Jhija Daura-Twigs	Bhari	9	17,222 kg
Khamba-Balo	Piece	22	29,114 kg
Khar/Babiyo (3hat bitta)	napo	16	13,250 kg
Khosta-Khosela	Doko	9	2,667 kg
Khoya	Doko	8	8,075 kg
Khursani (chilli-dry)	Mana	9	35,722 gm
Kodo ko Nal	Mutha	27	3,304 kg
Kodo ko Nal	Bhari	10	30,500 kg
Korko	Piece	6	516,667 gm
Kubindo	Piece	9	3,511 kg
Lasun (Garlic-dry)	Mutha	9	564,556 gm
Maize	Mana	86	428,192 gm
Maize	Pathi	24	3461,042 gm

Product	Local Unit	Number of item measured	Average value equivalent to st. unit
Maize flour	Mana	6	315,833 gm
Mandro	Piece	13	3,171 kg
Maas	Pathi	7	3,917 kg
Masyang	Mana	60	457,600 gm
Masyang	Pathi	21	3,891 kg
Millet	Mana	61	368,992 gm
Millet	Pathi	18	3,216 kg
Mustard geda	Pathi	7	3,076 kg
Mustard geda	Mana	10	365,650 gm
Maas	Mana	58	464,241 gm
Naglo	Piece	7	0,771 kg
Neuro	Mutha	9	172,444 gm
Potato	Pathi	12	3,158 kg
Potato	Mana	7	360,000 gm
Pumpkin-Pakeko	Piece	34	4,900 kg
Rato Matto	Pathi	6	4,533 kg
Rato Matto	Bora	6	33,667 kg
Rato Matto	Doko	7	40,286 kg
Rayo Sag	Mutha	32	420,313 gm
Rice-Dhan	Mana	23	341,739 gm
Rice-Dhan	Pathi	40	2,760 kg
Sand-Baluwa	Pathi	8	6,013 kg
Sisnu	Mutha	29	246,276 gm
Soybean	Mana	65	431,646 gm
Thumse	Piece	77	1,531 kg
Timber	Timba	86	0,066 cubic meter
Wheat	Pathi	7	3,813 kg
Wheat	Mana	15	463,333 gm
Sakarkhandda	Mana	15	380,667 gm
Chilli (Green)	Mana	15	74,667 gm
Pindalu	Mana	15	405,333 gm
Sakarkhanda	Pathi	10	2,704 kg
Pindalu	Pathi	14	2,821 kg

Product	Local Unit	Number of item measured	Average value equivalent to st. unit
Silam	Mana	16	245,938 gm
Rayo sag (Biuu, geda)	Mana	15	369,667 gm
Babari	Mana	6	393,667 gm
Gundruk	Pathi	6	391,667 gm
Halo	Piece	7	4,557 kg
Koila	Pathi	16	776,563 gm
Juwa	Piece	6	3,217 kg
Danda	Bhari	7	63,571 kg
Til	Mana	29	337,241 gm
Paral	Bhari	56	33,625 kg
Nigalo	Bhari	7	30,214 kg
Malayo	Mana	11	464,545 gm
Juttoo	Thuse	18	23,028 kg
Bamboo	Piece	9	18,500 kg
Haledo (Napineko)	Mana	6	150,833 gm
Bamboo Bhata	Bhari	9	26,000 kg
Nigalo	Piece	17	0,938 kg
Soybean	Pathi	6	3,375 kg
Rato Matto	Pathi	15	4757,000 gm
Gahat	Mana	7	461,429 gm

Chitwan

Product	Unit	Measured Unit	N	Min	Max	Mean	S.D.
Banana (Kera)	Ghari	No. (Gota)	41	72	213	132,756	37,688
Bitter gourd	Per time	grams	1	450	450	450,000	#DIV/0!
Bodi/Beans	Bundle	grams	60	200	1050	514,250	195,363
Cattle manure	m3	kg/m3	30	869,54	1072,4	955,722	49,417
Charcoal	Sacks	kg	5	22	38,5	28,500	6,490
Cucumber	Gota	grams	127	120	1150	306,220	116,673
Doko Grass	Doko	Kg	16	14	38,5	22,850	6,490
Dung Compost	Doko	kg	3	47	53	50,667	3,215
Farm Grass	Bundle	Kg	130	2,1	11	5,129	1,775
Farm Grass Adult	Load	Kg	20	23,2	59,5	40,298	10,572
Farm Grass Children	Load	Kg	9	6	34	22,633	8,535
Fire Wood	Load	kg	24	34	57	43,600	7,310
Firewood twig Children	Bhari	Kg	16	7	31	15,538	7,081
Firewood twig Female	Bhari	Kg	51	18	62	36,510	8,844
Firewood twig Male	Bhari	Kg	21	31	61	43,190	6,608
Forest Fodder Children	Bhari	Kg	14	14	27	19,179	3,625
Forest Fodder Female	Bhari	Kg	71	15	66	33,999	9,421
Forest Fodder Male	Bhari	Kg	20	24	95	40,450	15,493
Ghee	Mana	Grams	1	590	590	590,000	#DIV/0!
Gourd/Lauka	Gota	grams	8	400	2500	1122,500	824,807
Green leaves	Bundal	grams	44	300	1250	417,614	160,354
Jackfruit	Gota	kg	12	2,1	4,1	3,383	0,616
Karkalo	Bundle	Kg	1	11	11	11,000	#DIV/0!
Karkalo leaves	Mutha	grams	18	210	490	352,222	99,087
Lude/Bethe leaves	Mutha	grams	43	240	500	363,721	57,364
Maize Grass	Load	kg	18	20,5	63	39,728	12,296
Maize/Doko/Ghoga	Doko	Kg	8	24	47	33,750	8,648
Mango	Nos	grams	7	400	800	587,143	142,562
Milk	Mana	grams	1	780	780	780,000	#DIV/0!
Niuro	Mutha	grams	77	190	470	329,870	70,534
Pineapple	Nos	grams	51	1050	1680	1301,275	137,568
Poultry manure	m3	kg/m3	30	318,83	463,76	374,096	35,629
Poultry manure Small	Sacks	Kg	6	27	33	29,167	2,401

Product	Unit	Measured Unit	N	Min	Max	Mean	S.D.
Poultry manureLarge	Bora	Kg	14	53	102	79,257	16,689
Pumpkin	Gota	Kg	157	1	4,8	2,110	0,737
Pumpkin leaves	Mutha	grams	21	400	550	479,048	51,566
Sal leaf	Bundle	Kg	22	440	2000	1087,727	407,360
Thatch	Bundle	Kg	21	1,5	4,5	2,136	0,707
Thatch Bhari (Mutha)	Bhari	kg	3	35	50	43,000	7,550

Kaski

	Hemja unit measurement 21-……… August 2006							
40								
41	Pasture Grass Male	Doko	Kg	22	19	44	33,000	7,150
42	Pasture Grass Male	Load	Kg	39	17	72	40,179	11,676
43	Pasture Grass Female	Doko	Kg	37	18	48	33,203	7,044
44	Pasture Grass Female	Load	Kg	45	18	65	35,600	9,176
45	Field Grass Male	Doko	Kg	16	25	55	36,906	7,340
46	Field Grass Male	Load	kg	7	22	47	37,357	8,440
47	Field Grass Female	Doko	kg	27	16	46	30,481	7,350
48	Field Grass Female	Load	kg	2	41	44	42,500	2,121
49	FieldGrass Children	Load	kg	11	14	24	17,818	4,143
50	PastureGrass Children	Load	kg	14	9,5	40	21,536	8,464
51	EmptyDoko	Item	kg	35	1,2	3	2,174	0,385
52	Nigalo Shoot	Mutha	grams	46	480	800	626,739	88,971
53	Lakhutte/Niuro	Mutha	grams	31	300	700	564,194	133,236
54	Firewood	Load	Kg	3	26	57	37,333	17,098
55	Cattle manure	Doko	Kg	2	26	41	33,500	10,607
56	Lauka/Gourd	Piece	grams	6	1050	2400	1741,667	465,206
57	SpongGourd	Piece	grams	16	110	550	312,500	100,896
58	Green leaves	Bundle	grams	23	410	980	676,522	178,723
59	Lude/Bethe leaves	Bundle	grams	2	310	350	330,000	28,284
60	Pumpkin leaves	Bundle	grams	4	240	450	350,000	105,515
61	Datiwan	Mutha	grams	44	20	55	32,500	11,488

Appendix F The validity and reliability of own reported values

Estimating forest product values in Central Himalaya
- methodological experiences

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Abstract

Forests are crucial to the livelihoods of millions of poor people in developing countries. Yet quantitative approaches to estimate the economic value of forest products and other environmental resources at household-level across different sites have only recently been developed and experiences on using such methods are only presently emerging. This paper presents methodological experiences from using a structured household survey approach to estimate household forest dependency in two high altitude areas in Central Nepal. Area and village level background and contextual information was collected using qualitative techniques; this was followed by a structured household ($n = 180$) survey conducted over a full year from December 2005 to December 2006. Households were randomly selected and inter alia subjected to quarterly income surveys. The emphasis in this paper is on investigating whether own-reported value data is valid and reliable. It is concluded that it is reasonable to use households own-reported values as these estimates produced aggregated unit values with acceptable properties.

Keywords: Economic valuation, valuing environmental resource use, Nepal

1. Introduction

Forests are crucial to the livelihoods of millions of poor people in developing countries. But just how important are they in preventing and reducing poverty? Which types of forests and products count most for the poor? Are forests mainly useful as gap-fillers and safety nets preventing extreme hardship or can they help lift people out of poverty? How do different forest management regimes and policies affect the benefits poor people derive from forests? Answers to such questions are essential to design effective forest policies and projects, and to incorporate forest issues in poverty reduction strategies. Yet we have surprisingly little empirically based knowledge to answer such questions adequately.

Research on the role and potential of forests in preventing and reducing poverty is limited and can be considered an emerging field of inquiry. Existing literature has been critically examined with the aim of understanding forest-poverty linkages and the potential of forests in poverty alleviation (Arnold and Bird, 1999; Arnold, 2001; Wunder, 2001; Angelsen and Wunder, 2003; Scherr et al., 2004; Sunderlin and Ba, 2005), and a recent World Bank paper used a meta-analysis to assess rural dependence on forest income (Vedeld et al., 2004). Available studies clearly show that comparisons of

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forest product valuation studies are generally not possible because of varying methods (e.g. Campbell et al., 2002; Cavendish, 2002; Godoy and Bawa, 1993; Gram, 2001; Narian et al., 2005; Vedeld et al., 2004; Wollenberg and Nawir, 1998). An important consequence of this is that forest income remains excluded from official data collection and thus is largely invisible to policy makers. There is therefore a need to develop best-practice methods for assessing the role of forests and other environmental resources in rural livelihoods, and then create a critical mass of good and comparable data. Methods should be developed for use at household level, cover all income sources comprehensively, be quantitative and be described in detail (Cavendish, 2002). Such methods have recently been developed by the Poverty and Environment Network (PEN introduction 2008, PEN prototype questionnaire 2007, PEN technical guidelines 2007) and empirical data collection is taking place across a variety of sites. This paper reports methodological findings, using the PEN prototype questionnaire and approach, on forest product valuation in a high altitude remote site in the Central Nepal Himalaya. The emphasis is on (i) investigating whether own-reported volume and value data is valid and reliable, and (ii) how to value products that are neither traded or bartered and where there are no useful substitutes on which to base valuation.

1.1 Case study area

Field work was undertaken in two Village Development Committees (VDCs – the lowest administrative unit) in the lower part of Mustang District (around 28°34'-28°41' N and 83°33'-83°44' E) in the Western Region of Nepal. Each VDC is made up of three villages. Altitudes are above 2000 masl with a temperate to sub-alpine climate; annual average precipitation is approx. 1500 mm.

Land use is characterised by upper and higher elevation subsistence production type systems (Metz, 1989, 1990; Olsen, 1996): large areas of rainfed fields whose fertility is mainly maintained through use of composted manure. Livestock dominated by cattle, sheep and goats. Transhumance is common and there are large grassland and forest areas, including around 3000 ha of essentially closed canopy forests consisting of conifers (*Pinus*, *Cupressus*, *Abies*, *Tsuga*, *Taxus*) and mixed broadleaves (*Ilex, Rhododendron, Neolitsea, Acer, Betula, Populus*). Community-based grassland and forest management is common. The forest area per capita is about 1.7 ha as is the per capita area of grassland under community-based management. The most common sources of off-farm income are agricultural labour, portering, long distance trade, and from involvement in tourism (the study area is located in the Annapurna Conservation Area, a popular trekking destination).

The study area is characterized by a considerable level of forest dependency, e.g. through use of forest fodder to feed livestock and forest litter as input in compost production, and widespread poverty, e.g. the area has one of the lowest Human Development Indexes in the world (0.136 according to DDC 2002).

2. Methods

This section briefly explains how forest income data was collected, checked, cleaned and valued. Essentially, data collection and handling followed the procedures specified in the PEN prototype questionnaire (2007) and the PEN technical guidelines (2007), i.e. first qualitative rural appraisal at village level subsequently used to adopt the prototype questionnaire to the local context, then testing of

structured questionnaires, random selection of households, and application of questionnaires. Appraisal field work started in October 2005 and the last quarterly survey was conducted in December 2006.

The prototype questionnaire was translated into Nepali (PEN Nepali, 2008) by a team of faculties from the Institute of Forestry (IOF) at Tribhuvan University. All translated structured questionnaires were then tested in a village outside the sampling frame; based on this testing the final translations were worded.

Before field work commenced enumerators and supervisors were identified, selected and trained. Six high school graduate local enumerators (two female and four male) were thoroughly trained in a one-week programme and then used for the entire period of the survey. Trained IOF faculty supervised the local enumerators and checked the quality of the data and data collection; they participated in interviews and checked completed questionnaires. After coding in the field these were again checked and verified for consistency before entering into a unique yet simple MS Access database. Errors and inconsistencies were resolved by returning to households for clarification.

2.1 Rapid appraisal

In each village in each VDC contextual information, e.g. on village history and resource use patterns, was solicited through semi-structured village meetings, focus group discussions and key informant interviews. This included participatory resource mapping, drawing up an annual calendar of key activities, and making detailed lists of forest products used for both subsistence and commercial purposes.

2.2 Household-level structured surveys

An overview of the population and sample size and distribution is provided in Table 1. To allow detailed intra- and inter village level analyses a large number of households ($n = 194$) were sampled – 56% and 59% in the two VDCs respectively. Sampled households were randomly selected using an up-dated census list from each VDC office and a computer generated random table. At survey end, 14 households were excluded from the data set due to incomplete information or because validity was estimated to be low – at end of field work enumerators estimated household-level truthfulness on a scale of 1 to 3, with 1 being not valid and 3 being very valid. The average score was 2.43 with a vast majority of households estimated to provide very valid or valid responses. This good result is primarily due to the skilful local enumerators, their hard work and good rapport with the respondents.

Table 1 Population and sample size and distribution, 2006

Description	Kunjo VDC	Lete VDC	Total
Total population	826	911	1737
Total households	163	174	337
Average household size	5.1	5.2	5.2
Sampled households	92	102	194

Two types of structured surveys were carried out: annual household surveys (at survey start and survey end) and four quarterly household surveys. The first annual household survey provided basic household information (demographics, land holding, assets, access to forest, relation to forest institutions, markets for forest products) while the second annual survey focus on changes (in assets,

household level crises and unexpected expenditures, payments for forest services, welfare perceptions). The four quarterly surveys were basically designed for collecting high quality income data, including detailed questions on forest products. Off-farm and non-farm wage income contributed by each household member was recorded. Data was collected to allow calculation of net income from product processing and businesses (gross income minus costs of production). Indeed, data was collected to allow for detailed calculation of net income for all types of activities, including costs of agricultural inputs such as seeds, fertilizer and hired labour and basic livestock data such as each species' mortality and natality. Non-farm income included a range of activities such as interest earned, remittances (both cash and in-kind payment from family, friends and the state) and inheritance.

All selected households were informed of the purpose of the research in advance through an official letter. Whenever possible two adult household members, always including the household head, were interviewed. On average a household-level interview lasted 45 minutes.

Local volume units were standardized to SI units through repeat weighing of all units for all major products. Valuation was, whenever possible, done by reporting farm-gate prices; if not available valuation was done using barter values, substitute prices, distant market prices or value of time (labour – see also PEN technical guidelines 2007). This time consuming work was possible as researchers were in the study area throughout the year.

3. Results
In the research project underlying the present paper, estimating the true sustainability of household-level income is important. Therefore, here, some attention is paid to converting local volume units to SI units though this information is not strictly required to just estimate household income using the above approach. This is then followed by investigating basic distributional statistics for unit values in order to check whether own-reported values are useful. For products where no own-reported values can be obtained, the assumptions and techniques used to estimated values are presented; particular attention is paid to the key products browse and graze.

3.1 Conversion of local volume units to SI units
A total of 115 forest, non-forest environmental, agricultural and livestock products, reported in many different local units, are used for both subsistence and commercial purposes. Some products are reported in many different units, e.g. fuelwood may be reported in large or small rope-tied backloads (bhari) or in large or small bamboo baskets (doko). The results of the weight and volume measurements of products of major importance to households are presented in Table 2. In general, the median and modal values are close to the mean, and standard deviation is much less than the mean. The traditional local volume measures mana and pathi are related: eight mana to one pathi. This relationship is not found for all products; the least accurate figures are for garlic (5.6:1) and barley (6.3:1). Deviations are due to the variation created by (i) differences in moisture contents (products can be fresh, semi-dry or dry), (ii) use of available local volume vessels instead of two high quality standard vessels, and (iii) intra-species product variation, e.g. fine grain weighs more than coarse grain per unit. This indicates that, for some products, the number of observations should be increased.

Table 2 Conversion of local units to SI units for forest, non-forest environmental and agricultural products in Lower Mustang District, 2006 (only includes products where $n > 5$)

Products	Local unit	SI unit	N	Min	Max	Mode	Median	Mean	s.d.
Maize	pathi	gram	12	3350	4500	4000	3775	3775	313.0
	mana	gram	12	390	450	400	423	420	18.6
Barley	pathi	gram	10	2450	2775	2500	2513	2563	97.4
	mana	gram	10	350	455	400	418	405	36.6
Naked barley	pathi	gram	12	3000	3600	3000	3295	3274	184.9
	mana	gram	7	400	500	-	470	451	34.9
Green chilly	mana	gram	6	310	450	-	410	383	50.5
Beans	pathi	gram	8	3200	3800	3300	3375	3450	218.8
	mana	gram	10	350	450	-	395	406	33.1
Buckwheat	pathi	gram	12	2300	2900	2900	2780	2707	192.7
	mana	gram	10	350	450	380	388	387	29.2
Potato	pathi	gram	10	2700	3100	3000	3000	2955	132.2
	mana	gram	11	350	525	375	400	405	48.4
Garlic dry	pathi	gram	10	1800	2400	2150	2175	2130	184.4
	mana	gram	9	350	410	400	380	378	23.7
Mushroom (dry tawe)	pathi	gram	8	250	350	-	295	290	30.8
	mana	gram	10	35	50	35	43	42	5.8
Zanthoxylum armatum fruits	mana	gram	10	120	210	175	175	166	32.3
Fuelwood	L-bhari	kg	10	40	49	40	43	44	3.4
	S-bhari	kg	7	30	39	38	38	36	3.1
	L-doko	kg	8	44	55	44	48	48	4.0
	S-doko	kg	16	28	42	30	32	33	3.9
Charcoal	doko	kg	9	21	28	24	26	25	2.2
	bora[1]	kg	8	11	15	14	14	14	1.3
Fodder grass (high quality - sanchi dry)	mutha[1]	kg	17	0.8	1.1	0.8	1.0	0.9	0.1
Fodder grass (sanchi fresh)	mutha	kg	7	3.9	5.2	4.5	4.3	4.5	0.5
Bamboo (nigalo)	bhari	kg	15	20	31	22	24	24	3.3
Compost manure	doko	kg	15	16	36	28	28	26	7.0
Bamboo shoot (tusa)	mutha	kg	7	2.5	4	-	2.9	3.2	0.6
Fodder grass (ordinary)	bhari	kg	22	22	47	24	28	30	7.5
	doko	kg	21	18	40	36	33	30	6.9
Pole (large, bolo)	piece	m^3	47	0.007	0.227	0.105	0.105	0.104	0.035
Pole (small, khamba)	piece	m^3	60	0.022	0.088	0.039	0.039	0.044	0.013
Stick (sata, taiyu)	piece	m^3	28	0.003	0.009	0.008	0.007	0.006	0.003
Beam (dalin)	piece	m^3	62	0.071	0.189	0.142	0.142	0.131	0.027
Beam (satari)	piece	m^3	58	0.042	0.142	0.071	0.071	0.072	0.018
Planks (falek)	piece	m^3	61	0.005	0.021	0.012	0.012	0.013	0.003

[1] Bora is a large sack and mutha is a small bundle

3.2 Checking own-reported values

In his ground-breaking study of environmental resource use in Zimbabwe, Cavendish (2002) concluded that own-reported values are generally a good measure of the value of environmental resources. Whether this also holds true in the present high altitude Central Himalayan study area is investigated in this section – basic distributional statistics for unit values of the main forest, non-forest environmental, agricultural and livestock products are presented in Table 3. The column "Valuation method" specifies the dominant method used to value each product: local market means that the basis is farm-gate price; barter means that value is derived from trade with a market commodity; substitute that valuation is through a close substitute with a local market price; distant market that valuation uses the price at a distant market deducted for transport costs; and time means that valuation is done based on labour time multiplied by the relevant local daily wage rate (varies with season and gender). The valuation methods are listed in order of preference.

In general, all agricultural products could be valued using farm-gate prices (77%) or barter values (23%); for livestock products farm-gate prices (90%) were generally available – the main exception being manure (see section 3.3). This pattern is different for the large group of forest and non-forest environmental products: for 31% farm-gate prices are available, while barter is used for 10%, substitute pricing for 23%, distant market prices for 13% (nearly all medicinal plant products), and labour time for 23%. Product-level choice of valuation technique, when farm-gate and barter pricing were not possible, was generally determined by use, harvesting and trading patterns: using close substitute whenever possible, otherwise using distant (road head) market prices for traded goods and estimating the opportunity cost of labour for products collected during discrete harvesting trips. See also section 3.3 for how valuation of difficult products were undertaken.

For most products the mean, median and modal units are very close in value showing little skewness, and in general the standard deviation is lower than the mean and in many cases lower than half the mean. This indicates that own value estimates reflect resource values (rather than being just arbitrary answers provided by respondents who feel obliged to participate in the research). Products deviating from this pattern (notably wooden furniture, poles, cattle) are arguably quite heterogenous (e.g. size, quality) and we would expect high variation in unit values. For some products, the number of observations are too low to ensure good estimates, e.g. the unit value of a doko of fuelwood ($n = 8$) would vary according to the species composition and the wood moisture content. Such intra-product quality variation was not recorded and is a cause of dispersion in the unit values. Thus, to arrive at estimates with acceptable properties, it is important to disaggregate products as much as possible. Product differences are reflected in the large differences in minimum and maximum values of many products – a span also influenced by spatial and temporal variability in values. The latter is seen in the seasonal value variation for selected products, with a high number of observations, in Table 4.

In the last column in Table 3, the product unit value (typically Nr/kg) is provided; this should be similar regardless of local unit and valuation technique used. This is generally the case though there are exceptions, e.g. for garlic, ghee and wild vegetables. It should be noted that value/local unit is more accurate than the value/SI unit as the latter is calculated using a weight conversion factor; as seen in Table 2 this may require many (more) observations to establish estimates with good properties. We would also expect the unit price of processed products to be higher than for raw materials; this is consequently the case in Table 3, e.g. when comparing raw and processed bamboo (chitro, doko, kaap), fuelwood and charcoal, timber and wooden furniture, poles and ploughs, milk and butter/cheese/ghee.

Table 3 Own-reported unit values (Nr) of forest, non-forest environmental, agricultural and livestock goods in Lower Mustang District, 2006 (100 products where $n \geq 5$)

Products	Local unit	n	Min	Max	Mode	Median	Mean	s.d.	Valuation method	Nr/kg[1]
I. Forest and non-forest env. products										
Bamboo product (chitro)	piece	48	100	350	200	200	199.4	55.1	local market	33
Bamboo product (doko)	piece	111	50	150	100	100	93.6	15.5	local market	31
Bamboo product (kaap)	piece	13	10	30	10	10	12.7	6.0	local market	28
Charcoal	doko	21	100	300	200	170	164.3	63.5	local market	7
	bora	148	50	200	100	100	115.4	28.4	local market	9
Fodder grass (dry sanchi)	mutha	235	5	40	6	8	12.0	8.1	local market	3
Juice (seabuckthorn)	litre	22	100	400	100	100	123.2	65.2	local market	123(/l)
MAP (yarsagumba)	piece	11	30	50	30	30	35.5	6.9	local market	142000
Mushroom (guchi)	kg	16	500	4000	4000	4000	2687	1750	local market	2687
Mushroom (tawe dry)	pathi	59	200	350	300	300	298.3	20.7	local market	1029
	mana	11	10	130	40	40	46.8	31.6	local market	1170
Lumber	m^3	159	3531	17657	6357	6357	6519	1244	local market	6519(/m^3)
Wooden furniture	piece	27	20	4500	1500	1000	1258	1325	local market	11438(/m^3)
	set	20	500	5000	2500	1625	1940	1145	local market	9700(/m^3)
Wooden tool (agri.)	piece	97	10	170	10	15	23.9	29.4	local market	7980(/m^3)
Wooden tool (plough)	piece	44	200	1000	500	500	511.4	229.2	local market	10227(/m^3)
Walnut	kg	21	20	40	20	20	27.1	9.6	local market	27
***Z. armatum* fruit**	mana	20	40	70	60	60	59.0	8.5	local market	358
Bamboo shoot	kg	205	10	60	50	40	36.9	15.0	barter value	37
	mutha	130	10	60	50	30	34.5	13.2	barter value	35
Incense (diyalo)	bhari	103	90	350	300	300	259.4	69.3	barter value	12
	doko	165	50	400	100	100	159.6	89.6	barter value	8
Ornamental plants	mutha	8	5	30	10	10	10.6	8.2	barter value	11
	piece	91	2	30	5	5	7.6	4.8	barter value	23
Tree bark (incense)	kg	7	5	30	20	20	19.3	9.3	barter value	19
	mutha	11	5	20	20	10	14.1	5.8	barter value	14
Tree leaves	mutha	50	5	50	20	20	24.1	10.8	barter value	24
	piece	8	2	10	5	5	5.9	3.2	barter value	18
Bamboo (broom grass)	mutha	55	10	100	35	40	46.2	24.4	substitutes	5
Fish	kg	6	100	300	220	220	215.0	66.3	substitutes	215
Amphibia (medicinal)	kg	5	60	200	100	100	112.0	52.2	substitutes	112
	piece	24	5	70	50	50	46.5	18.5	substitutes	122
Snails (medicinal)	piece	7	5	10	5	5	7.1	2.7	substitutes	143
Mushroom (tawe fresh)	kg	315	20	300	100	100	102.6	55.3	substitutes	103
Wild fruit (guyalo)	kg	62	20	50	20	20	23.0	7.1	substitutes	23
Wild fruit (kopen)	kg	48	10	50	20	20	23.5	7.3	substitutes	24
Wild fruit (ainselu)	kg	5	30	50	30	30	36.0	8.9	substitutes	36
Wild veg. (dude-lasune)	kg	424	5	60	20	20	23.3	7.9	substitutes	23
	mutha	142	5	80	30	30	26.0	12.1	substitutes	26

Products	Local unit	n	Min	Max	Mode	Median	Mean	s.d.	Valuation method	Nr/kg[1]
	doko	15	100	400	200	200	183.3	69.9	substitutes	9
Wild veg. (dhogayo)	kg	32	10	50	20	20	21.4	8.2	substitutes	21
	bhari	15	200	500	300	300	313.3	83.4	substitutes	16
Wild veg. (green)	kg	25	10	40	30	20	23.2	7.8	substitutes	23
	mutha	60	5	50	30	20	21	11.8	substitutes	21
MAP (chiraito)	mutha	8	5	50	10	10	14.4	14.5	distant market	37
MAP (kutki)	piece	11	2	40	10	10	14.7	10.3	distant market	173
MAP (nirmasi)	piece	6	10	35	10	20	20.0	9.5	distant market	235
MAP (satuwa)	piece	8	5	30	5	10	11.3	8.3	distant market	132
MAP (panchaunle)	piece	7	10	20	10	10	12.1	3.9	distant market	143
Wooden stick	piece	195	5	40	5	10	9.1	5.3	distant market	3020
Bamboo	bhari	283	100	430	350	300	273.8	82.4	value of time	11
	piece	247	1	20	5	5	4.6	2.8	value of time	10
Clay (sagarmato)	doko	55	25	200	50	50	83.1	58.3	value of time	3
Fodder grass (ordinary)	bhari	112	20	130	20	50	55.7	33.9	value of time	2
Fuelwood (trunk)	bhari	357	20	250	80	80	84.1	34.7	value of time	2
	doko	8	20	200	40	45	63.8	57.3	value of time	2
Fuelwood (branch-twig)	bhari	227	20	300	60	60	68.3	39.2	value of time	2
	mutha	18	10	30	20	20	22.2	6.5	value of time	3
Decayed litter	bhari	28	20	80	20	30	34.5	14.4	value of time	1
	doko	5	25	50	50	50	40.0	13.7	value of time	1
Poles	piece	121	10	800	50	50	110.2	132.6	value of time	2204(/m^3)
Thatch grass	bhari	11	100	200	120	150	153.6	36.7	value of time	5
Tree bark	bhari	8	30	70	35	35	38.1	13.1	value of time	1
	doko	5	20	50	50	30	34.0	15.2	value of time	1
Dry pine leaf litter (sanpat)	bhari	100	50	200	100	100	98.3	19.13	value of time	2
Mixed leaf litter	bhari	137	40	300	50	60	66.75	28.17	value of time	2
II. Agricultural products										
Apple	kg	10	15	30	20	20	19.0	4.6	local market	19
Plum	kg	5	10	20	20	20	16.0	5.5	local market	16
Peach	kg	21	10	30	20	20	17.1	5.8	local market	17
Barley	muri	108	800	2400	1200	1200	1151.9	254.9	local market	22
	pathi	30	40	80	70	70	66.0	7.7	local market	25
Bean	muri	71	1600	4000	3000	3000	3085.9	260.4	local market	45
	pathi	129	70	200	160	160	161.3	18.2	local market	47
Buckwheat	muri	151	1000	3200	1400	1400	1425.8	298.1	local market	26
	pathi	47	50	100	80	70	74.1	12.2	local market	27
Cabbage	kg	436	10	35	20	20	19.7	4.4	local market	20
Carrot	kg	107	10	60	20	25	25.5	9.7	local market	25
Cauliflower	kg	188	10	60	30	30	28.2	8.6	local market	28
Chilli	kg	23	20	80	50	43	44.7	17.9	local market	45
Garlic	kg	81	10	100	20	20	35.1	25.2	local market	35
	pathi	80	50	300	150	150	147.3	40.8	local market	49
Green leafy veg	kg	322	10	80	20	15	19.9	13.4	local market	20

Products	Local unit	n	Min	Max	Mode	Median	Mean	s.d.	Valuation method	Nr/kg[1]
	mutha	298	5	60	15	15	16.2	5.3	local market	16
Maize	muri	304	1000	1800	1200	1200	1227	112.0	local market	16
	pathi	17	40	70	60	60	60.6	8.1	local market	16
Onion	kg	31	10	80	40	40	34.7	17.4	local market	35
Potato	pathi	196	40	120	50	60	57.5	11.8	local market	19
	muri	241	600	1600	800	1000	998.6	241.3	local market	17
Soyabean	muri	10	2000	4000	2000	2750	2840	751.6	local market	41
	pathi	48	100	300	200	155	162.6	49.9	local market	46
Tomato	kg	29	20	70	60	50	47.9	15.1	local market	48
Amaranthus	kg	15	20	60	20	20	25.0	11.2	barter value	25
	pathi	16	100	200	200	150	151.9	42.3	barter value	34
Gourd	kg	58	10	50	20	20	22.7	8.8	barter value	23
Pumpkin	kg	28	10	50	20	20	27.5	13.0	barter value	27
	piece	33	15	70	40	40	38.3	11.8	barter value	19
Radish/turnip	kg	217	10	30	15	15	16.9	4.8	barter value	17
Tree tomato	kg	13	20	65	60	60	52.7	13.3	barter value	52
III. Livestock products										
Butter	kg	8	200	300	300	275	266.3	38.9	local market	266
Cheese	kg	12	200	350	200	275	270.8	62.0	local market	270
Egg	piece	608	10	15	10	10	10.0	0.2	local market	200
Ghee	kg	17	300	600	300	350	370.6	101.6	local market	370
	mana	61	150	400	300	300	286.4	42.3	local market	573
Hide/skin	piece	117	10	1500	50	50	75.1	150.6	local market	-
Honey	mana	66	200	350	300	300	304.2	22.3	local market	608
Meat chicken	kg	309	120	800	400	300	316.7	96.6	local market	316
Meat mutton	kg	220	100	500	200	200	204.7	67.7	local market	205
Meat pig	kg	6	100	200	200	160	161.7	37.1	local market	162
Meat yak	kg	12	100	500	200	200	220.8	119.6	local market	221
Milk	litre	78	40	90	60	55	55.6	12.0	local market	55(/l)
	mana	145	10	40	25	25	26.7	5.7	local market	53(/l)
Wool	kg	22	10	70	10	27.5	29.5	17.2	local market	30
Beehive	piece	128	300	6500	1000	1000	1384	1140	local market	-
Buffalo	piece	84	3000	25000	15000	16000	15464	5687	local market	77
Chicken	piece	828	200	1200	500	600	623.9	160.5	local market	312
Cow	piece	476	300	35000	1500	1200	1888.9	3658.6	local market	9
Dog	piece	221	100	2000	500	400	429.6	186.8	local market	43
Duck	piece	8	200	800	800	500	518.8	239.0	local market	259
Goat	piece	237	800	5000	1500	2000	2209.9	813.3	local market	110
Horse	piece	120	15000	100000	30000	35000	39220	17389	local market	196
Mule	piece	77	15000	45000	30000	30000	30701.3	4199.2	local market	154
Ox	piece	529	1500	8000	6000	5500	5174.9	1086.2	local market	26
Pigeon	piece	16	100	350	150	150	161.3	57.5	local market	269
Pig	piece	30	1500	15000	4000	5000	6683.3	3902.9	local market	134
Sheep	piece	129	1100	7000	3000	3000	2948.3	783.8	local market	147
Yak	piece	20	4000	40000	18000	18000	20150	8362.0	local market	101

Products	Local unit	n	Min	Max	Mode	Median	Mean	s.d.	Valuation method	Nr/kg[1]
Mule carrier	days	6	150	600	300	300	316.7	150.6	local market	-
Horse riding	days	48	100	1500	500	500	517.7	268.5	distant market	-
Draught power	days	350	100	600	300	300	257.9	73.7	value of time	-
Manure[2]	bhari	29	25	60	25	30	37.4	13.9	value of time	1
	doko	548	15	150	50	50	43.3	17.8	value of time	2

[1] These figures should be treated with caution: the most reliable are those where local units have been weighed in SI units (see Table 2 for products with $n > 5$). Other rely on respondent guesstimates or, more rarely, figures from the literature.
[2] The value of composted manure can be calculated as the sum of dry pine needle litter and manure.

Table 4 Seasonal variation in own-reported values (Nr) for selected forest products (with high number of observations), Lower Mustang District, 2006

Products	Local unit	N	Winter			Spring			Summer			Autumn		
			n	Mean	s.d.	n	Mean	s.d.	n	Mean	s.d.	n	Mean	s.d.
Bamboo	bhari	283	69	193	67	59	282	80	94	319	51	61	288	75
Charcoal	bora	148	73	111	27	24	105	21	22	110	18	29	139	32
Bamboo basket (doko)	piece	111	2	103	25	41	95	17	45	90	15	23	97	11
Fodder grass (ordinary)	bhari	42	21	74	23	3	50	0	10	75	27	8	74	33
	mutha	201	14	17	10	59	20	7	84	10	6	44	10	7
Fuelwood (trunk)	bhari	562	230	81	26	96	70	8	66	81	38	170	82	16
Fuelwood (twig/branch)	bhari	283	113	71	38	40	55	16	24	135	93	106	60	16
Compost manure	doko	444	108	35	12	102	45	14	119	49	9	115	53	24
Mushroom (tawe)	pathi	59	NA	NA	NA	4	300	0	52	297	21	2	325	35
Poles	piece	108	37	102	103	37	84	110	26	55	68	8	135	127
Leaf litter (sanpat)	bhari	234	137	66	20	9	94	81	NA	NA	NA	88	101	17
Wooden stick (tayu)	piece	195	61	10	5	55	7	3	61	7	6	18	16	4

Thus the results in Table 3 indicate that valid and reliable own-reported values, also for forest and non-forest environmental products that are not traded or bartered, can be established using the described valuation methods and that these values can be interpreted in an economic sense as prices. Such values can thus be used in forest income calculations for households where own-reported estimates are not available.

When estimating the opportunity cost of labour, it should be noted that labour wage rates vary across seasons and gender. An overview of these variations is presented in Table 5. There is a tendency for wage rates to be higher during the summer (main harvest season) and lower during the winter but this is not statistically significant. There is also a tendency for male wage rates to be higher than female wage rates but again the differences are not significant.

Table 5 Farm and non-farm labour wage rate (Nr/day±s.d. / *n*) variation across seasons and gender, Lower Mustang District, 2006

	Sex	Winter	Spring	Summer	Autumn	Mean
Farm	Female	185±41 / 6	208±34 / 30	205±44 / 22	220±49 / 25	209±43 / 83
	Male	188±48 / 14	209±48 / 29	251±76 / 18	238±64 /12	220±62 / 73
Non-farm	Female	189±45 / 19	221±92 / 11	272±91 / 11	236±70 / 11	223±77 / 52
	Male	290±125 / 31	364±148 / 27	335±64 / 35	292±70 / 31	319±108 /124
Mean		233±102 / 70	253±112 / 97	276±84 / 86	253±70 / 79	255±95 / 332

3.3 Techniques used to estimate values for difficult products

The majority of products making up household income can be valued using interviewees own-reported values. In most cases, valuation is straight forward, e.g. (i) lumber of *Pinus wallichiana* are purchased from the local saw mill for Nr 180/cuft and this is used as the farm-gate price for this product, or (ii) some wild mushrooms and wild vegetables have close substitutes, such as cultivated vegetables, with a local market price. However, there are products for which valuation is difficult. In the following, an overview is provided of how valuation was done for products that are neither traded or bartered and where there are no useful substitutes on which to base valuation**.**

Fuelwood is usually collected on discrete harvesting trips (i.e. harvesting trips organised with this single purpose) during late autumn and winter and were hence valued using the opportunity cost of labour, taking into account gender and seasonal variations in daily wage rates (the average daily adult wage rate was Nr 255±95; Table 5). There is some variation in the resultant estimated values as there are variations in species harvested, distance to collection sites, and individual carrying capacity.

In the production systems in the study area, stall feeding is common. Manure is gathered from the stalls and mixed with dry pine needle litter and mixed leaf litter (the latter usually in smaller amounts) in composting pits. The composted manure is transported in dokos to agricultural fields and applied. The *dry pine needle litter* and *mixed leaf litter* is usually gathered in bharis during discrete collection trips, only allowed after the first flush of snow in late autumn or early winter, and valued using the opportunity cost of labour. Likewise, *manure* is valued based on the time required to collect, transport and apply the composted manure using the opportunity cost of labour. The unit value of *composted manure* can thus be calculated as the sum of the unit value of litter and manure. There is some variation around the mean value for both litter and manure as collection distance and individual carrying capacity vary.

Clay is excavated along river banks and used for roofing of houses. Again, as the excavation and transport are discrete activities, the opportunity cost of labour was used for valuation. Value variation is due to differences in physical performance of excavators/porters.

A few *medicinal plant products* are traded locally, and some are traded through long-established marketing chains and can be valued using prices at road heads (distant market prices). We had only very few observations of medicinal plants used for self-medication and it appears likely that this product group is significantly under-reported.

Livestock are critical to most households in the study area and most livestock products can be valued using farm-gate or barter pricing. The important exception is browse and graze. Most livestock feed freely in de facto community managed forest and grassland areas and the value of browse and graze is significant as these constitute the major source of fodder for cattle, buffaloes, horses, mules, goats, sheep and yak. Browse and graze are, however, difficult to value as there is no market for grazing rights and no close substitutes. Cavendish (2002) discusses the possibilities of valuing livestock feed at the output end but this requires a string of assumptions, e.g. that livestock do not add value to food inputs, that makes these approaches very questionable. Instead, we here present an alternative approach that focus on directly valuing browse and graze at the input end. First, using Nepal specific data, we estimate annual fodder consumption per livestock unit; then, using data from our structured survey, we determine the relative importance of main land use types as sources of fodder; finally we combine this with the valuation of ordinary quality fodder grass, that can be estimated using the opportunity cost of labour, to arrive at the total value of fodder per household (approach can also be used to calculate the total value of fodder per land use type).

The daily per livestock unit (LU, equivalent to adult cow weighing 200 kg) feed requirement is 4.8 kg dry weight: 17 kg fresh weight/day, with browsing and grazing animals consuming 70% of this (enough to meet minimal maintenance requirement, ensure limited milk production and provision of draught power), and dry/wet weight ratio of 0.4 (Metz 1994). This figure is close to the minimal subsistence annual fodder demand of 1.7 t (oven-dry weight) per LU per year estimated by Mahat et al. (1987).

A seasonal overview of the relative importance of sources of fodder in the study area is provided in Table 6. There is some stall feeding of livestock, especially during the winter, but the majority of fodder (82%) is obtained through browsing and grazing. In Chimkhola, neighbouring the present study area, Metz (1994) similarly estimated that browse and grazing provided around 70% of livestock fodder. In our study area, forests are the single most important source of fodder (55% of total), followed by grass land (21%) and agricultural land (15%), Table 6. It is also noteworthy that forests are important throughout the year while grass lands are mainly important in the summer and autumn and agricultural land in the winter (livestock graze directly on fields when there are no crops) which is also when stall feeding is most important. Livestock is consequently moved between alpine pastures (grass lands) and valley bottoms (agricultural land). Most fodder used in stall feeding is derived from agricultural land (67%), i.e. agricultural residues (trees are not found on agricultural land in the study area), and forests (23%).

Table 6 Relative importance (%) of sources of livestock fodder across seasons and the relative importance of browse/graze and stall feeding across seasons and sources of fodder, Lower Mustang District, 2006. Based on quarterly interviews with 164 livestock owning households

	Agriculture	Forest	Grass land	Other land	Browse and graze	Stall feeding
Winter	34	50	5	11	67	33
Spring	12	55	13	20	87	13
Summer	12	63	24	2	91	9
Autumn	1	53	44	2	85	15
Full year	**15**	**55**	**21**	**9**	**82**	**18**

Browse and graze	4	62	24	10		
Stall feeding	67	23	8	3		
Avg value of browse and graze (Nr/hh)	1833	6721	2566	1100	10020	2200

Fodder grass (sanchi) is harvested and stored in small semi-dry twisted bundles (mutha). High quality grass has a local market price as it is purchased by mule owners (transporting goods through the area using so-called mule trains). Ordinary quality grass is usually collected on discrete harvesting trips for use in stall feeding and can thus be valued using the opportunity cost of labour. Thus the value of **browse and graze** can be calculated, using the figures for weight and values in Tables 2 and 3, to Nr 0.74 per dry weight kg (mean price of Nr 55.7 per bhari ordinary quality grass weighing 30.3 kg of green weight converted to dry weight using the dry/wet weight ratio of 0.4). This can then be used to estimate the total value of livestock browse and graze per household (as well as per source of fodder, such as forests). When calculating per household income, the value of browse, graze and stall feed should be deducted from livestock income and booked under the sources of fodder.

4. Discussion and conclusion

Households in the Central Himalaya use a large number of products, for both commercial and subsistence purposes, harvested across land use types in the landscape. The majority of products can be valuated using farm-gate or barter prices or through valuation of a close substitute with a local market price. Analysis of basic distributional statistics for such prices, generated through own-reported values by interviewed households, show that prices are valid and reliable across very different product types. It was also attempted to standardise local units for the major forest and agricultural products; this work is very time consuming and for some products it seems that the number of observations need to be increased as there may be substantial variation in weight, e.g. due to differences in moisture content or species composition.

Products that are neither traded nor bartered and where there are no useful substitutes on which to base valuation are more difficult to value. Fortunately, in this study area, most of the major products were collected during discrete harvest trips and it was straight forward to estimate the opportunity cost of labour. One particularly challenging product to value was browse and graze; livestock income is important to most households in the study area and, to get an accurate picture of the relative importance of different sources of subsistence and cash income, it is important to estimate the value of fodder inputs. By combining already available data on livestock unit feed requirements with data collected on sources of fodder and valuation of fodder grass, using the opportunity cost of labour, it was possible to estimate the value of browse and graze as well as stall feeding.

In conclusion, we found it reasonable to use households own-reported values as these estimates produced aggregated unit values with acceptable properties.

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Appendix G List of papers based on the Nepal PEN data

The list will grow as the data analysis work continues…

Publications

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