



Appendix A: Final Report

NESS

Complementary Social Baseline

*Supplemental Environmental and Social Impact Assessment
Upper Trishuli-1 Hydropower Project, Nepal*

Prepared for:



Prepared for:

Nepal Water and Energy
Development Company
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Appendix A: Complementary Social Baseline

Supplemental ESIA-

Upper Trishuli-1 Hydropower Project, Nepal

December 2014

Cover Photo:

Trishuli River downstream from the proposed powerhouse site,
facing upstream. October, 2013

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List of Abbreviations

Abbreviations

AaNaMi	Assistance Nurse Midwife
BCTS	Brahmin/Chhetri/Thakuri/Sanyasi
CBO	Community Based Organization
CBS	Central Bureau of Statistics
DDC	District Development Committee
EIA	Environmental Impact Assessment
EPI	Expanded Program of Immunization
FGD	Focus Group Discussion
HH	Households
HP	Health Post
KII	Key Informant Interview
LNP	Langtang National Park
M/F	Male/Female
NEFIN	Nepal Federation of Indigenous Nationalities
NESS	Nepal Environmental and Scientific Services P. Ltd
NGO	Non-governmental Organization
PAF	Poverty Alleviation Fund
PARS	Project Affected River Stretch
PD	Project district
RCC	Rod, concrete and cement
Rs	Nepalese rupees
SHP	Sub-Health Post
SLC	School Leaving Certificate
VDC	Village Development Committee

1 Objectives

The objectives of the supplemental social baseline study were: i) establish the current socio-economic and cultural environmental baseline condition of the Project area; ii) predict and evaluate the socio-economic and cultural impacts, and iii) identify required mitigation measures.

The complementary social baseline study was conducted at two levels:

- Communities or Village Development Committees (VDCs) level
- Project Affected Families (PAFs)

At the community (VDC) level, the main goal was to identify the socioeconomic and cultural impacts of the Project actions on the adjoining communities, particularly to indigenous and vulnerable ethnic minorities. This information could inform future development initiatives to ensure the social and cultural sustainability of the communities in the Project's area of influence.

At the Project Affected Families (PAFs) level, socioeconomic information of the households directly affected by the Project was captured to complete the baseline and inform the development of the *Land Acquisition and Livelihood Restoration Plan* and the *Vulnerable Peoples Plan*, both required to minimize and mitigate project-derived socioeconomic impacts and bring the Project into conformance with international standards.

2 Approach and Methodology

At the community (VDC) level, socioeconomic information was gathered through stakeholders consultations and structured questionnaire surveys. As part of the stakeholders consultation, a total of ten Focus Group Discussions (FGD) were held involving ethnic minorities (six) and women groups (four) of the three VDCs (Dhunchhe, Haku and Ramche) affected by the Project. A total of 123 individuals participated in these FGDs and during these events they expressed their concerns and expectations regarding the Project. In addition, 20 individuals representing various positions in the local society were interviewed as key knowledgeable individuals to seek information and feedback. Structured questionnaires were also distributed to 236 households in the three VDCs of the Project area (see Annex 7 for a list of surveyed households at the VDC level). This sample represents 15% of the total households in the area. The results of these questionnaires, presented in this report, were analyzed statistically.

Based on a map with the land requirements of the Project, as provided by the proponent in March 2014, the Project Affected Families (PAFs) or households whose land and/or assets are located within the area to be occupied by the Project were identified. A detailed survey of 34 of the 36 directly affected identified households (two households were absent at the time of the study) was conducted and the results were statistically analyzed. The database thus generated could be use for the future *Land Acquisition and Livelihood Restoration Plan*.

Other sources of information used for the complementary social baseline include the following:

- Review of secondary sources and latest census (e.g. Central Bureau of Statistics, CBS, 2011 census, previous socioeconomic studies, profiles of the District Development Committee, DDC, and the Village Development Committee, VDC, etc.).
- Meetings and discussions with the key stakeholders such as Project Concern Groups, business groups, project officials etc.
- Observation of the socio-economic cultural practices and places.

The team that conducted the complementary baseline was led by a Senior Socioeconomic Specialist. Four other social surveyors were involved in the household surveys. A statistician processed the data using FoxPro computer software.

3 Complementary Social Baseline Findings

3.1 Socio-economic findings at the Project District (PD) level

3.1.1 Demographic Characteristics

Population and households

The total population of the Rasuwa District according to the 2011 Census is estimated to be 43,300 people; including 21,475 males and 21,825 females. The sex ratio (M/F) of the district is 98.4 as the women population is slightly higher than men population. The total number of households in the district is 9,778 and the average household size of 4.43 people per household. The district covers an area of 1,544 km². The population density of the district is 53.6 people per km².

Table 3-1: Demographic data of Rasuwa District

Demographic variables	Value
Total Population	43,300
Male	21,475
Female	21,825
Sex Ratio (M/F)	98.4
Total Households	9,778
Average Household Size (persons/hh)	4.43
Area (km ²)	1,544
Population Density (persons/km ²)	53.6

Source: CBS 2011

Population by age group

34% of the Rasuwa District population is less than 14 years old. Age group between 15 and 59 (i.e. the productive age group) represents 56% of the total population. Female population is marginally higher in this age group. People older than 60 years old comprise 10% of the total population, with men numbers slightly higher in this age group (Table 3.2).

Table 3-2: Population of Rasuwa District by Age Group

Age group	Population					
	Total		Male		Female	
	Number	%	Number	%	Number	%
0 to 4	3,755	8.67	1,910	8.89	1,845	8.45
5-14	10,978	25.36	5,345	24.89	5,633	25.81
15-59	24,104	55.67	11,906	55.44	12,198	55.88
60 and above	4,463	10.29	2,314	10.78	2,149	9.85
Total	43,300	100	21,475	100	21,825	100

Source: CBS 2011

Household head by gender and age group

Nearly 76% of households are headed by a male while the rest 22% are headed by a female family member. Most of female household heads fall in the age group of 20 to 39 years (Table 3-3).

Table 3-3: Household head by gender and age group

District	Sex	Age Group								Total
		10-14	15-19	20-29	30-39	40-49	50-59	60-69	> 70	
Rasuwa	Male	15	76	714	1,602	1,944	1,607	1,011	610	7,579
	%	0.20	1.00	9.42	21.14	25.65	21.20	13.34	8.05	100
	Female	14	73	440	597	415	262	238	160	2,199
	%	0.64	3.32	20.01	27.15	18.87	11.91	10.82	7.28	100
	Total	29	149	1,154	2,199	2,359	1,869	1,249	770	9,778
	%	0.30	1.52	11.80	22.49	24.13	19.11	12.77	7.87	100

Source: CBS 2011

Population with disability

About 2% of the population is reported to have some type of disability. The most common type of impairment is physical disability (Table 3-4). Women show a higher incidence of deafness and speech-related problems while men report higher number of physical and multiple disabilities.

Table 3-4: Disabled population and types of disability

Sex	Population without Disability	Population with disability	Physical	Blindness Low Vision	Deaf/Hard To hearing	Deaf - Blind	Speech problem	Mental Disable	Intellectual Disable	Multiple Disable
Male	20,903	572	213	98	87	10	63	30	20	51
%	97.33	2.66	37.24	17.13	15.21	1.75	11.01	5.24	3.50	8.92
Female	21,381	444	130	76	91	7	67	25	8	40
%	97.97	2.03	29.28	17.12	20.50	1.58	15.09	5.63	1.80	9.01
Total	42,284	1016	343	174	178	17	130	55	28	91
%	97.65	2.35	33.76	17.13	17.52	1.67	12.80	5.41	2.76	8.96

Source: CBS 2011

Ethnicity

Rasuwa District is ethnically mixed and diverse. There are more than 18 ethnic groups (Table 3-5) in the district and most of the population (78%) belongs to Nepalese indigenous groups known as Janajati/Adivasi and nationally recognized under the Nepalese Government Indigenous Act 2002. The Tamang, recognized as marginalized¹ by the Nepal Federation of Indigenous Nationalities (NEFIN), are the predominant (64% of the total population) Janajati/Adivasi group in the district.

Table 3-5: Ethnic composition of the Rasuwa District

Caste/Ethnicity	Percentage of population (%)
Tamang	63.75
Brahman - Hill	15.83
Gurung	6.72
Kami	2.02
Newar	2.80
Chhetri	3.38
Magar	1.27
Sherpa	1.04
Unidentified Caste	0.67
Others	2.52
Total	100.00
Higher caste	19.88
SKD	2.02
Janajati/Adivasi	78.1

Source: CBS 2011

Religion

The majority of the population follows Buddhism as their main religion (i.e. 69% of the total population), whereas Hinduism and Christianity are practiced by 25.4% and 4% of the total population, respectively. Other minority religions observed in the district are Islam (0.02%), Kirat (0.01%), Prakriti (0.07%), Bon (0.002%) and other undefined (0.26%). Table 3-6 shows the distribution of religious believes in the district population.

Table 3-6: Religious diversity

Religion	Population	Percent (%)
Hinduism	10,988	25.38
Buddhism	30,290	69.95
Islam	9	0.02

¹ NEFIN classification of indigenous people based on development status: <http://www.nefin.org.np/list/Classification/5/0/6>

Religion	Population	Percent (%)
Kirat	6	0.01
Christianity	1,862	4.30
Prakriti	31	0.07
Bon	1	0.002
Undefined	113	0.26
Total	43,300	100.00

Source: CBS 2011

Language

More than 9 languages are spoken as mother tongues in the district; with Tamang being the dominant language as it is spoken by 60% of the population. In addition to Tamang, a sizeable group of population speaks Nepali in the district (Table 3.7).

Table 3-7: Languages spoken in Rasuwa District

Mother Tongue	Percentage (%) of the population
Nepali	31.67
Tamang	60.05
Newari	0.80
Magar	0.30
Gurung	0.76
Sherpa	0.32
Maithali	0.27
Tharu	0.14
Tibbetan	1.11
Others	4.57

Source: CBS 2011

3.1.2 Quality of Life

Literacy and education

Among the population above 5 years of age, 53.60% of them are literate while 43.36% are illiterate. Literacy rate (Table 3-8) is higher among the male population (60.58%) compared to their female counterpart (46.50%).

Table 3-8: Literacy rate

S.N	Particulars	Population					
		Total	%	Male	%	Female	%
1	Population aged 5 years & above	39,545	91.33	19,565	91.11	19,980	91.55
2	Can Read & Write	21,197	53.60	11,906	60.85	9,291	46.50

S.N	Particulars	Population					
		Total	%	Male	%	Female	%
3	Can read only	1,156	2.92	586	3.00	570	2.85
4	Cannot read and write	17,148	43.36	7,065	36.11	10,083	50.47
5	Not stated	44	0.11	8	0.04	36	0.18

Source: CBS 2012

Among the literate group, half of the population has an educational level equivalent to primary education and only 16% have attended education up to School Leaving Certificate (SLC). About 7.18 % of population has education level above intermediate (Table 3.9).

Table 3-9: Education level in Rasuwa District

Sex	Population with formal education (highest level achieved)											Total
	Beginners	Primary (1-5)	Lower sec. (6-8)	Secondary (9-10)	S.L.C & equivalent	Intermediate & Equivalent	Graduate & univalent	Post Graduate Equivalent & Above	Others	Non formal Education	Level not stated	
Male	455	5,526	2,531	1,095	1,201	696	255	75	23	311	59	12,227
%	3.7	45	20.7	9	9.8	5.69	2.1	0.61	0.2	2.5	0.5	100
Female	459	4,784	2,017	881	687	446	78	19	7	200	42	9,620
%	4.8	50	21	9	7	5	0.8	0.2	0	2	0.4	100
Total	914	10,310	4,548	1,976	1,888	1,142	333	94	30	511	101	21,847
%	4.18	47.19	20.82	9.04	8.64	5.23	1.52	0.43	0.14	2.34	0.46	100.00

Source: CBS 2012

Of those attending education above intermediate levels, 40 % of them undertake studies in the education and teaching field. Population with advanced education on science is low (Table 3.10).

Table 3-10: Education subjects above intermediate level

Population	Humanities & arts	Business & Administration	Education	Science	Health	Engineering Mfg. & Construction	Law	Social & behavioral Science	Mathematics & Statistics	Agriculture forestry & Fishery	Computing	Journalism & Information	Others	Not stated	Total
Male	181	122	371	43	47	20	6	63	30	7	2	1	0	133	1,026
%	18	12	36.7	4.2	4.6	2	0.6	6.1	2.9	0.7	0.2	0.1	0.0	13	100
Female	61	30	266	5	41	1	0	32	3	0	1	0	0	103	543
%	11	5.5	49	0.9	7.6	0.2	0.0	6	0.6	0.0	0.2	0.0	0.0	19	100
Total	242	152	637	48	88	21	6	95	33	7	3	1	0	236	1,569
%	15	9.7	40.6	3.1	5.6	1.3	0.3	6.1	2.1	0.5	0.2	0.1	0.0	15.0	100

Source: CBS 2012

There are a total of 129 educational institutions in the Rasuwa District (Table 3.11); 123 managed by the communities and 6 of them institutional. Primary education institutions constitute approximately 80% of the total educational institutions and are distributed all over the district, while lower secondary and secondary institutions constitute less than 20% of the total institutions and are scattered sparsely across the district.

Table 3-11: Number of schools according to education level

S.N	Education Level	Community	Institutional	Total	Well Trained Teachers
1	Pre Primary	0	-	0	0
2	Primary	101	4	105	215
3	Lower Secondary	10	2	12	24
4	Secondary	12	-	12	29
	Total	123		129	268

Source: Rasuwa District Profile 2006

Health

The population of Rasuwa District is serviced by 18 health care facilities (Table 3.12) There is one hospital at the district headquarter, Dhunche, with a capacity of 15 beds. Each of the VDCs has either a health post (HP) or a sub-health post (SHP). A total of 53 health professionals (comprising 3 doctors, 3 nurses, 14 assistance nurse midwife (Aa.Na.Mi), 22 health workers, and 11 health assistants) provide regular services through these institutions (Rasuwa District Profile 2006/2063).

Table 3-12: Existing health services

Types of Health services	No.
Government Hospitals	1
Health posts (HP)	8
Sub-health Posts (SHP)	9

Source: Rasuwa District Profile 2006

Apart from these services, health care is delivered through 42 primary health care outreach clinics, 57 Expanded Program on Immunization (EPI) clinics and 24 female and child health volunteers. The health care service levels are grossly inadequate considering the population and their geographical distribution in this topographically diverse landscape.

The predominant diseases reported in the district include: skin diseases, respiratory problems, diarrhea, parasitic infestations, gastric disorders, and ear and eye infections. The health status of the district is broadly characterized by the statistics presented in Table 3.13.

Table 3-13: Key Health Indicators of the Project District

Description	Unit	Quantity
Population Benefitted by Doctor	Number	14,910
Population Benefitted by Health Institutions	Number	2,983
Total Fertility Rate	Per Month	4.2
Infant Mortality Rate	Per Thousand	101.03
Contraceptive Prevalence Rate	Percent	40.22
Average Marriageable age-Male	Year	22.24
Average Marriageable age-Female	Year	19.4
Average Life Expectancy-Both	Year	54.75
Average Life Expectancy-Male	Year	55.35
Average Life Expectancy-Female	Year	54.16

Source: Rasuwa District Profile 2006

Housing Facilities

Nearly 90% of the residential houses are built of mud mortar bricks or stone. Cement mortar bricks/stones constitute only 6 % of the total residential infrastructure (Table 3.14).

Table 3-14: Type of houses and construction materials

S.N	Construction Material	HHs No.	Percent (%)
1	Mud bonded bricks/stone	8,736	89.68%
2	Cement bonded bricks/stone	549	5.64%
3	Rod, concrete and cement (RCC) with pillar	180	1.85%
4	Wooden pillar	203	2.08%
5	Other	13	0.13%
6	Not stated	60	0.62%
	Total	9741	100%

Source: CBS 2012

Nearly 72.28% of the houses have their roof made of corrugated galvanized sheet. Wood plank roof is used in 11% of the houses (mostly in high altitudinal areas), followed by tile and slate (9.59%) and RCC (4%).

Table 3-15: Residential House Roof Types

S.N	Roof Type	HHs No.	% of households
1	Thatch Straw	144	1.48
2	Galvanized Iron	7041	72.28
3	Tile/slate	934	9.59
4	RCC	390	4.00
5	Wood Planks	1099	11.28
6	Mud	1	0.01
7	Others	68	0.70
8	Not stated	64	0.66
	Total	9741	100%

Source: CBS 2012

Water Supply

Nearly 88 % of the households are supplied with tap/piped water at the community level, while the rest of the households depend on nearby springs and rivers for their water supply (Table 3.16). The water supplied through pipes at the community level is not treated and there are risks of pollution during the dry as well as the monsoon seasons.

Table 3-16: Households water supply

S.N	Source	HHS no.	Percent (%)
1	Tap/ piped	8,559	87.87%
2	Tube well/hand pump	0	0.00%
3	Covered well/ Kuwa	11	0.11%
4	Uncovered well/ kuwa	95	0.98%
5	Spout Water	906	9.30%
6	River/ Stream	106	1.09%
7	Others	28	0.29%
8	Not Stated	36	0.37%
	Total	9741	100

Source: CBS 2012

Sanitation

Storm water drainage and wet sewage drainage facilities do not exist in the district. Nearly 57% of the district's households have some type of toilet facilities at their homestead, while 43% still rely on open defecation (Table 3-17) in the nearby open lands, streams and creeks. This situation has caused a major problem of water pollution and sanitation at the community level.

Table 3-17: Sanitation facilities at the household level

S.N	Types of toilet used	HHs No.	Percentage
1	Flush toilet (public sewerage)	11	0.11%
2	Flush toilet (Septic tank)	3,595	37%
3	Ordinary Toilet	1,881	19%
4	Not stated	35	0.36%
5	Without toilet	4,219	43%
	Total	9,741	100%

Source: CBS 2012

Energy Use

98% of the households in the Rasuwa district rely on traditional firewood as the main fuel for cooking and other household purposes. Commercial supply of energy is only limited to some affluent households at the district headquarter (Dhuchen) or households connected to the main roads. For the purposes of lighting, electrical energy (either from the national grid or through solar energy) is used by over 77% of the households, while 12 % rely on kerosene as the main source of lighting (Table 3.18).

Table 3-18: Energy use pattern

S.N	Energy for cooking			Energy for lighting	
	Energy Source	HHs No.	Percent (%)	HHs No.	Percent (%)
1	Wood/firewood	9,585	98.4	0	0
2	Kerosene	11	0.11	1,148	12%
3	Liquified petroleum (LP) gas	124	1.27	0	0
4	Cow dung	0	0	0	0
5	Biogas	12	0.12	0	0%
6	Electricity	2	0.02	6,961	71%
7	Others	2	0.02	976	10%
8	Not stated	5	0.05	36	0%
9	Solar	0	0	620	6%
	Total	9741	100	9,741	100%

Source: CBS 2012

Information and communication technologies

Mobile telephone and radio are the key means of communication used by about 56% and 52% of the households, respectively. 37% of the households also reported having television. Access to computer and internet is limited to less than 2% of the households.

Table 3-19: Communication facilities

S.N	Facilities	HHs No.	Percentage
1	Radio	5,085	52%
2	Television	2,271	23%
3	Cable Television	1,336	14%
4	Computer	231	2%
5	Internet	83	1%
6	Telephone	597	6%
7	Mobile phone	5464	56%

Source: CBS 2012

Transportation facilities

A total of 111 km of motorable roads have been developed in the Rasuwa District; this transportation network connects 11 out of 19 VDCs of the district. The road density is about 6.61 km per 100 km². Out of these 111 km of roads, nearly 66 km (from the Rasuwa - Nuwakot border to Rasuwagadhi) are paved while the rest are dirt roads.

3.1.3 Livelihood and Economic Activities

About 89% of the households have agriculture integrated with animal husbandry as primary occupation (Rasuwa District Profile 2006/2063) and their main source of livelihood. About 11 % of the households make their livelihood from other occupations than agriculture, mainly manufacturing, trade and business, transportation, services, etc. Most (82%) of the active population is self-employed.

The district is deficient in agriculture production to meet its annual requirements. Nearly 2,559 metric tons of grain shortage was reported during the fiscal year 2010/2011 (Table 3.20).

Table 3-20: Annual agriculture production and shortage

DISTRICT	EDIBLE PRODUCTION (mt)					Total edible production (mt.)	Requirement (mt)	Balance (+,-)
	Rice	Maize	Wheat	Millet	Barley			
RASUWA	1571	2292	838	995	109	5806	8365	-2559

Source: Ministry of Agriculture and Cooperatives, 2011.

Despite the dependency of the majority of households on agriculture for livelihood, only 40% of these households meet their food inputs from their own agricultural production, and the majority (60%) experience food shortage. In order to meet this food deficit, a number of alternatives, including loans, wage labor, outmigration (within and outside Nepal), are utilized by households. Nearly 24% of the households in the district have at least one of their family members living outside the village. The active population that has migrated looking for jobs accounts for nearly 7% of the district population (CBS, 2012).

About 36% of the households are marginalized farmers and 54% of the population lives below the poverty line (Rasuwa District Profile 2006/2063). GDP per capita for the district is US\$ 1802, while per capita income is 331 US\$.

3.1.4 Gender

Female population constitutes nearly 50.4% of the total district population. Their access to education, property ownership, and participation in social organization and economic activities is lower than in the case of their male counterparts. Compared to the 60.58% male literacy rate, only 46.5% of the women are literate. Only 8% of the women have legal ownership of property (Table 3.21).

Table 3-21: Female ownership of assets

S.N	Female ownership in	HHs No.	Percentage
1	Both House & Land	460	5%
2	Land only	322	3%
3	Neither house nor Land	8,892	91%
4	Not stated	67	1%
	Total	9741	100%

Source: CBS 2012

Average marriage age for women is 20 years compared to the 23 years for men. Life expectancy of women (54 years) is also lower than men's (55 years). Culturally and traditionally, females have been relegated to the domestic environment and been involved mostly in household chores, including: child care, animal husbandry, water fetching and looking after the welfare of family members.

3.2 Socio-economic findings at the Village Development Committee (VDC) level-Project Affected Area

The Project area encompasses three VDCs of the Rasuwa District, namely: Dhunche, Haku and Ramche. In total, there are 1,646 households and 7,181 inhabitants in these three VDCs, according to the 2011 Population Census. These VDCs in the Project's direct area of influence constitute about 17% of the total population of the Rasuwa District (Table 3.22).

Table 3-22: Households and population in the Project-influenced VDCs

VDC/District	Households	Population		
		Total	Male	Female
Dhunche	714	2,744	1,465	1,269
Haku	443	2,169	1,049	1,120
Ramche	489	2,268	1,092	1,178
Total Project VDCs	1,646	7,181	3,606	3,567

VDC/District	Households	Population		
		Total	Male	Female
Total Rasuwa District	9,778	43,300	21,475	21,825
% Covered by the VDC	16.83	16.58	16.79	16.34

Source: National Population and Housing Census 2011(VDC/Municipality, Volume 02) CBS, November 2012.

Structured questionnaires were distributed to 236 households in the three target VDCs of Dhunche, Haku and Ramche (see Annex 7 for a list of surveyed households at the VDC level). The following sections present the socioeconomic information obtained through these questionnaires, which has been used to characterize the Project's area of influence at the VDC level from a socioeconomic perspective.

3.2.1 Demographic characteristics

Family Size, Ethnicity/Caste

The average family size of the surveyed households from the three VDCs in the Project's area of influence is estimated to be 5.71 persons; higher than the average family size in the Rasuwa District (4.42 persons) and the national average (4.88 persons). Among the different ethnic/caste groups, the Gurungs have the larger size of family members (7.67 persons) followed by the Tamang communities (5.75 persons), who are the predominant group in the Project area.

The population of the 236 sampled households corresponds to Nepalese indigenous peoples or Adivasi/Janjati. In particular, 93.6% of the households belong to the Tamang community (classified as marginalized Adivasi/Janjati by NEFIN) and 1.3% belongs to the Gurung group (recognized as disadvantage Adivasi/Janjati by NEFIN). Population in the caste group, Brahmin/Chhetri/Thakuri/Sanyasi (BCTS), constitutes 3.8% of the the sampled households. Only one of the sampled households was categorized as Dalit (lower caste), another as Magar (disadvantaged Adivasi/ Janjati) and a third one as Newar (advantaged Adivasi/Janjati).

Due to the recent trend of male population migrating out of the area in the search for job opportunities, the percentage of women-headed households in the Project area is significant (11%), as shown in Table 3.23.

Table 3-23: Family size and ethnicity in the Project's area households

Categories	Households		Average Family Size
	Number	%	
<i>By Gender of HH Head</i>			
Men	211	89.41	5.71
Women	25	10.59	5.68
Total / Overall	236	100.00	5.71
<i>By Caste/Ethnicity</i>			
Tamang (marginalized Adivasi/Janjati)	221	93.64	5.75
BCTS	9	3.81	4.78
Gurung (disadvantage Adivasi/Janjati)	3	1.27	7.67
Dalit (Kami)	1	0.42	5.00
Magar (disadvantaged Adivasi/ Janjati)	1	0.42	4.00
Newar (advantaged Adivasi/Janjati).	1	0.42	2.00
Total / Overall	236	100.00	5.71
<i>By VDCs</i>			
Dhunche	98	41.53	5.22
Haku	59	25.00	6.22
Ramche	79	33.47	5.92
Total/ Overall	236	100.00	5.71

Source: NESS Household Survey 2013

Of the total population, 53.4% are men and 46.6% are women. The sampled households' population was divided into four age group categories. It was found that 29.1% of the population is below 14 years of age and 7.4% is 60 years or older; both categories are considered to be economically inactive groups. The largest part of the population (63.4%) falls into the 15-59 years category, which is considered as economically active. The 5-14 years age group (population in schooling age) constitutes 18.3% of the sampled population (Table 3.24).

Table 3-24: Age structure (% of population) of the Project's area households

Age Group	Male	Female	Total
Below 5 Yrs	7.5	7.8	7.5
5-14 Yrs	21.7	21.5	21.6
15-59 Yrs	62.9	64.0	63.4
60 Yrs and Above	7.9	6.7	7.4
Total	53.4	46.6	100.0

Source: NESS Household Survey 2013

Family structure and settlement period

The survey revealed that a majority of the sampled households (79%) live in nuclear families, while 21% have adopted a joint or extended family structure (Figure 3.1).

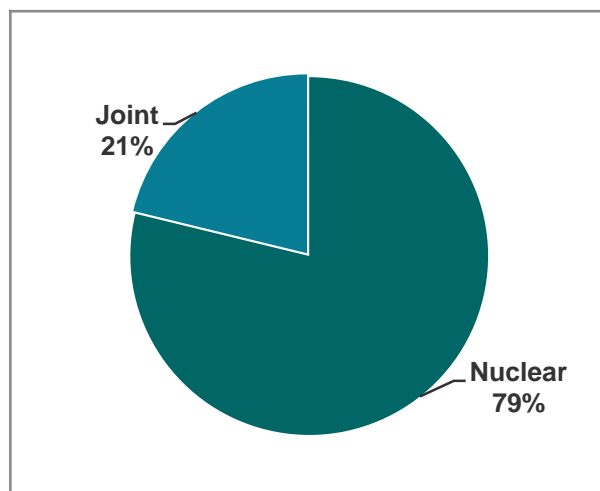


Figure 3-1: Family Structure

The majority of the families interviewed (91%) have resided in the project area for over two generations; 1.3% for only generation and 7.6% have settled within 30 years. The majority of the Tamang (92.8%) and the BCTS (88.9%) families have been dwelling in the area for at least two generations (Table 3.25).

Table 3-25: Settlement period of the Project's area households

Categories	2 Generations or more		One Generation		Recently (within 30 Years)		Total	
	No.	%	No.	%	No.	%	No.	%
Tamang	205	92.8	2	0.9	14	6.3	221	100.0
BCTS	8	88.9			1	11.1	9	100.0
Gurung	1	33.3	1	33.3	1	33.3	3	100.0
Dalit (Kami)					1	100.0	1	100.0
Magar					1	100.0	1	100.0
Newar	1	100.0					1	100.0
Total/ Overall	215	91.1	3	1.3	18	7.6	236	100.0

Source: NESS Household Survey 2013

Educational status

In the Project's area, almost 30% of the population is illiterate. The illiteracy ratio among women is 40% compared to 20% in the case of men. The illiteracy ratio among the Tamang group, predominant ethnic community in the area, is 30% (21% for men and 40% for women).

Table 3-26: Educational status (% of population) of the Project's area households

Categories	Illiterate			Literate			Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Tamang	21.6	40.1	30.4	78.4	59.9	69.6	52.4	47.6	100.0
BCTS	3.6	35.7	14.3	96.4	64.3	85.7	66.7	33.3	100.0
Gurung		14.3	5.0	100.0	85.7	95.0	65.0	35.0	100.0
Dalit (Kami)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	100.0
Magar		50.0	25.0	100.0	50.0	75.0	50.0	50.0	100.0
Newar		100.0	50.0	100.0		50.0	50.0	50.0	100.0
Total/ Overall	20.4	39.9	29.5	79.6	60.1	70.5	53.1	46.9	100.0

Source: NESS Household Survey 2013

Among the literate population, almost a quarter (24%) has had no formal education. One third of the literate population (30%) has completed primary level education, 19% has completed lower secondary level education and 10% have passed class 10. A significant number of the population has completed higher secondary (7.6%) and intermediate (6.7%) studies. Only a lower percentage of the population (1.7 %) has completed the equivalent to bachelor level education. The majority of the Tamang community has only completed primary level education (56%). Similar is the literacy situation for the Gurung population, with only one third (32.6%) having primary studies.

Table 3-27: Level of education (% of population) of the Project's area households

Categories	Literate Only	Primary Level	Lower Secondary Level	10 Passed	Higher Secondary	IA Passed	BA Passed	Total
Tamang	25.1	31.21	19.25	10.3	7.15	5.72	1.3	100
BCTS	5.88	23.53	20.59	17.6	14.71	14.71	2.94	100
Gurung	15.79	15.79	5.26	0	15.79	36.84	10.53	100
Dalit (Kami)	50	0	50	0	0	0	0	100
Magar	33.33	0	0	33.3	0	0	33.33	100
Newar	0	0	0	100	0	0	0	100
Total/ Overall	24.15	30.31	18.96	10.5	7.61	6.76	1.69	100

Source: NESS Household Survey 2013

3.2.2 Economic and Livelihood Characteristics

Occupation and earning

Farming is the main occupation in the Project's direct area of influence, with 41% of the active population working in agriculture. Foreign employment (7.5%), wage earning (7.3%), various services (4.7%) and trade/business (4.5%) activities are the other occupations

found in the survey. Almost one third of economically active age populations are students (32%) and 1.2% is unable to work (Table 3.29).

Table 3-28: Occupational status of population (% of population 15 years or older)

Categories	Agriculture	Trade	Services	Wage Earning	Student	Unable to Work	Foreign Employment	Cottage Industry	Other	Total
Tamang	42.4	4.0	3.8	7.7	31.6	1.1	7.8	0.4	1.3	100
BCTS	24.4	12.2	9.8	2.4	48.8				2.4	100
Gurung		20.0	45.0		25.0	5.0	5.0			10
Dalit (Kami)	75.0							25.0		100
Magar	50.0				50.0					100
Newar	100									100
Total/ Overall	41.3	4.5	4.7	7.3	31.9	1.2	7.5	0.4	1.3	100

Source: NESS Household Survey 2013

Status of Migrants Workers

Approximately 38% of the sampled respondents noted that they have family members who are migrant workers and regularly provide remittances. All the population belonging to caste groups was found to have at least one member of the family working away from the area. The ratio of migrant workers is higher among women-headed households (52%) compared to men-headed households (36%).

Table 3-29: Status of migrant workers

Categories	Yes		No		Total	
	No.	%	No.	%	No.	%
Tamang	84	38.0	137	62.0	221	100
BCTS	1	11.1	8	88.9	9	100
Gurung	3	100			3	100
Dalit (Kami)			1	100	1	100
Magar			1	100	1	100
Newar	1	100			1	100
Total/ Overall	89	37.7	147	62.3	236	100
By Gender of Household Head						
Men Headed	76	36.0	135	64.0	211	100
Women Headed	13	52.0	12	48.0	25	100
Total/ Overall	89	37.7	147	62.3	236	100

Source: NESS Household Survey 2013

Among the migrant workers, the majority (57%) are reported to have migrated to Kuwait, followed by Malaysia (36%). The third preferred country for remittance earning is Saudi Arabia (12%), followed by Dubai (6.7%), Qatar (3.4%), Lebanon (2.5%) and India (1.7%). Almost one third of the population (31%) from the Project VDCs also travels within Nepal for earning (Figure 3.2).

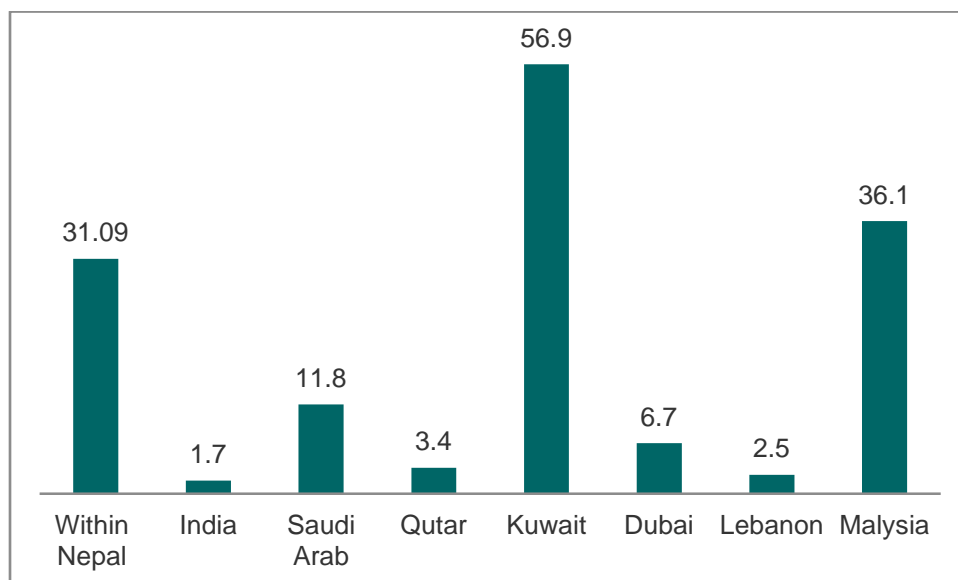


Figure 3-2: Destination of the migrants for remittance income

Source: NESS Household Survey 2013

The average monthly income of a migrant worker is estimated to be Rs 7,327. By ethnicity, the Gurungs are earning the highest monthly income (Rs 63,167), as they are engaged mostly in security works. The other groups, such as the Tamang (Rs 6,890) and the Newar (Rs 7,000), would obtain lower incomes from migrant work.

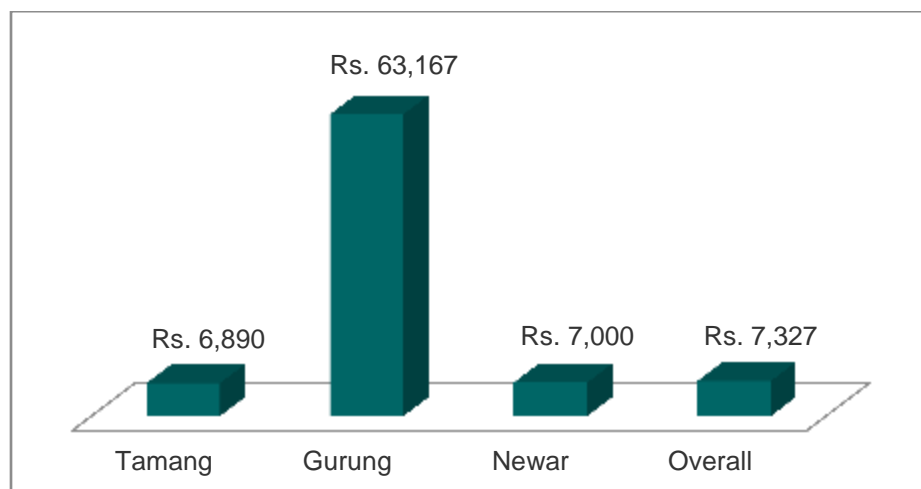


Figure 3-3: Average monthly Income of migrant workers

Source: NESS Household Survey 2013

Land ownership and food sufficiency

The large majority of the surveyed households (217 out of 236; i.e 98.2%) own their land. By caste/ethnic group; 98.1% of the Tamangs and 100% of the other caste/groups, except the Kami (Dalit) household that was sampled, own land. By gender, 99% of the men-headed households own their land compared to 91 % of the women-headed households (Table 3-30).

Table 3-30: Land ownership status

Categories	Own Land Self Cultivated	
	Number	%
By Caste/Ethnicity		
Tamang	206	98.1
BCTS	6	100.0
Gurung	3	100.0
Magar	1	100.0
Newar	1	100.0
Total/ Overall	217	98.2
By Gender of Household Head		
Men Headed	197	99.0
Women Headed	20	90.9
Total/ Overall	217	98.2

Source: NESS Household Survey 2013

In terms of the different types of land that households own, the majority (94%) own *Bari* land (rainfed upland) while only 15% of the households own *Khet* land (irrigated lowland). A fewer number also owns other types of land such as *Kharbari* or marginal land (7.3%), private forest (0.9%), orchards (0.5%) and other types (2.3%) of land (Table 3.31).

Table 3-31: % of Households Owning Different Types of Land

Categories	Khet		Bari		Kharbari		Private Forest		Orchard		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Tamang	31	15.0	197	95.2	15	7.3	2	1.0	1	0.5	4	1.9
BCTS	1	16.7	5	83.3								
Gurung			2	66.7	1	33.3						
Magar											1	100.0
Newar			1	100.0								
Total/ Overall	32	14.7	205	94.0	16	7.3	2	0.9	1	0.5	5	2.3

Source: NESS Household Survey 2013

The average size of land holdings per household in the study area is 0.510 ha. This average size is slightly higher among Tamangs (0.530 ha) and lower for the Magar and Newar (0.010 ha each) families. Similarly, men-headed households have a greater size of land holding (0.540 ha) compared to woman-headed (0.310 ha). The practice of renting-in and renting-out land among the sample households is very limited.

Table 3-32: Average size of land holdings and property type

Categories	Own Land Self Cultivated (ha)	Rented-in (ha)	Rented out (ha)	Government Owned (PARTI/AILANI)
By Caste/ Ethnicity				
Tamang	0.530		0.010	0.010
BCTS	0.300			
Gurung	0.040			
Magar	0.010			
Newar	0.010			
By Gender of Household Head				
Men Headed	0.540			0.010
Women Headed	0.310	0.010	0.050	
Total/ Overall	0.510		0.010	0.010

Source: NESS Household Survey 2013

Of the total land owners, 89% are actively growing crops in their lands. Paddy and maize are the major crops (i.e. 37% and 31%, respectively). Potato is also popular as a cash crop and is cultivated in 18% of the cropped area.

Table 3-33: Area under crops (Unit: Ha/HH)

Categories	Paddy		Wheat		Maize		Millet		Potato		Pulses		Oil Crops		Vegetables		Total	
By Caste/ Ethnicity	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Tamang	0.370	37	0.060	6	0.310	31	0.010	1	0.180	18	0.010	1	0.010	1	0.030	3	0.990	100
BCTS	0.190	33	0.080	15	0.120	22			0.060	12	0.020	3	0.080	14	0.010	1	0.560	100
Gurung	0.020	55			0.010	27									0.010	18	0.040	100
Total/ Overall	0.350	37	0.060	6	0.300	31	0.010	1	0.170	18	0.010	1	0.010	2	0.030	3	0.940	100
By Gender of Household Head																		
Men Headed	0.370	37	0.060	6	0.310	31	0.010	1	0.180	18.4	0.010	1.1	0.020	1.6	0.030	3.2	0.980	100
Women Headed	0.250	40.8	0.040	6.2	0.190	30.9	0.020	2.6	0.090	15.4		0.3		0.7	0.020	3.1	0.610	100
Total/ Overall	0.350	37.4	0.060	6.2	0.300	31.2	0.010	1.1	0.170	18.2	0.010	1.1	0.010	1.6	0.030	3.2	0.940	100
By VDC																		
Dhunche	0.410	36.8	0.100	9.2	0.280	24.8	0.020	1.4	0.230	20.7	0.020	1.7	0.020	1.7	0.040	3.8	1.120	100
Haku	0.400	38.7	0.020	1.5	0.470	46.2	0.010	0.9	0.090	9.1		0.2	0.020	2.2	0.010	1.2	1.020	100
Ramche	0.250	37.3	0.030	5.1	0.180	27.6		0.6	0.160	23.6	0.010	0.8		0.7	0.030	4.3	0.670	100
Total/ Overall	0.350	37.4	0.060	6.2	0.300	31.2	0.010	1.1	0.170	18.2	0.010	1.1	0.010	1.6	0.030	3.2	0.940	100

Source: NESS Household Survey 2013

Estimations of average yields for different crops are presented in Table 3-34.

Table 3-34: Average Yield (MT/Ha) for different crops

VDC	Paddy	Wheat	Maize	Millet	Potato	Pulses	Oil Crops	Vegetables
Dhunche	1.03	1.07	1.05	0.79	4.28	0.88	1.07	6.88
Haku	1.07	0.76	1.14	1.31	4.62		0.99	7.99
Ramche	1.07	1.18	1.19		4.43	0.62		6.78
Total/ Overall	1.06	1.00	1.09	1.16	4.42	0.99	1.62	6.74

Source: NESS Household Survey 2013

On average, a household is producing crops equivalent to Rs 35,262 per annum. The maximum earning is reported from potato (Rs 12, 783/HH), followed by paddy (Rs 8,845/HH), maize (Rs 7,411/HH) and vegetables (Rs 3173/HH).

Table 3-35: Average production values (Rs) of crops

Categories	Paddy	Wheat	Maize	Millet	Potato	Pulses	Oil Crops	Vegetables	Total
Average Production (Rs /HH)	8,845	1,218	7,411	239	12,783	561	1,032	3,173	35,262
Average Price (Rs/Kg)	25.7	5.1	35.7	21.6	8.6	11.8	66.4	6.4	

Source: NESS Household Survey 2013

Almost a third of the sampled households (32.2%) reported selling at least of the crop types that they are producing. Potato is the most common product sold by the majority of the households (84%), followed by vegetables (30%), paddy (28%) and maize (21%).

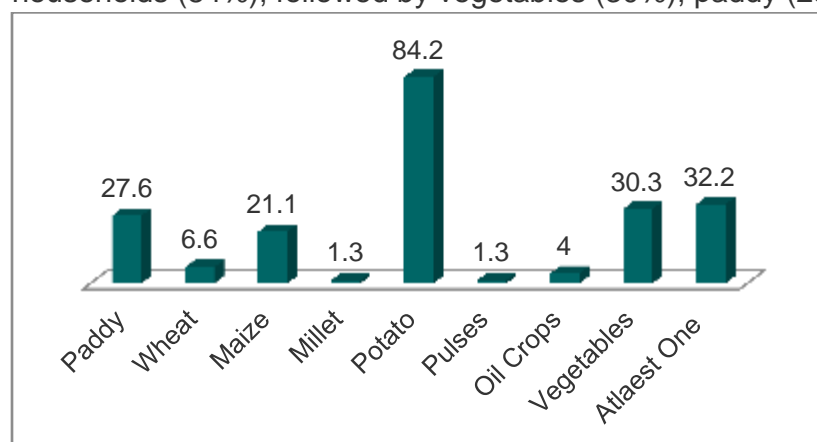


Figure 3-4: % of HHs Reporting Sale of Crops

Source: NESS Household Survey 2013

The average volume of transaction for cereals is negligible in the Project area. However, on average, households sell 133 kg of potato, 208 kg of oil crops and 850 kg of vegetables. The average annual earning of households from the sale of crops and vegetables is estimated to be Rs 4,630/HH (Table 3.36).

Table 3-36: Average Crop Sale and Income

Categories	Paddy	Wheat	Maize	Millet	Potato	Pulses	Oil Crops	Vegetables	Total
Sold Quantity (Kg/HH)	30.08	2.8	15.25	1.48	132.97	0.13	2.97	50.81	236.49
Income from Sale (Rs/HH)	696	59	423	30	2358	6	208	850	4630

Source: NESS Household Survey 2013

The majority of the sampled households (90%) reported food insufficiency during part of the year and a fraction of the households (the Dalit family, one third of the BCTs and 12% of the women-headed households) reported no production at all (Table 3.37).

Table 3-37: Food sufficiency levels

Categories	Yes		No		No Production			Total
By Caste/ Ethnicity								
	No.	%	No.	%	No.	%	No.	%
Tamang	9	4.1	201	91.0	11	5.0	221	100.0
BCTS			6	66.7	3	33.3	9	100.0
Gurung			3	100.0			3	100.0
Dalit (Kami)					1	100.0	1	100.0
Magar			1	100.0			1	100.0
Newar			1	100.0			1	100.0
Total/ Overall	9	3.8	212	89.8	15	6.4	236	100.0
By Gender of Household Head								
Men Headed	7	3.3	192	91	12	5.7	211	100.0
Women Headed	2	8.0	20	80	3	12.0	25	100.0
Total/ Overall	9	3.8	212	89.8	15	6.4	236	100.0

Source: NESS Household Survey 2013

The food sufficiency status of the households owning farm land, as shown in Table 3-38, reveals that 54% of the sampled households have food sufficiency for 3-6 months, followed by 22% of the households being covered for 6-9 months (22%), and 21% having enough food just for up to 3 months. Only 3.3% of the households reported food sufficiency for more than 9 months.

Table 3-38: Number of Households Reporting Food Sufficiency Period from Own Production

Categories	Up to 3 Months		3 - 6 Months		6 - 9 Months		More than 9 Months		Total	
By Caste/ Ethnicity										
Tamang	39	19.4	111	55.2	44	21.9	7	3.5	201	100.0
BCTS			4	66.7	2	33.3			6	100.0
Gurung	3	100.0							3	100.0
Magar	1	100.0							1	100.0
Newar	1	100.0							1	100.0
Total/ Overall	44	20.8	115	54.3	46	21.7	7	3.3	212	100.0
By Gender of Household Head										
Men Headed	39	20.3	105	54.7	41	21.4	7	3.6	192	100.0
Women Headed	5	25.0	10	50.0	5	25.0			20	100.0
Total/ Overall	44	20.8	115	54.3	46	21.7	7	3.3	212	100.0
By VDC										
Dhunche	22	26.2	37	44.1	22	26.2	3	3.6	84	100.0
Haku	5	9.4	33	62.3	11	20.8	4	7.5	53	100.0
Ramche	17	22.7	45	60.0	13	17.3			75	100.0
Total/ Overall	44	20.8	115	54.3	46	21.7	7	3.3	212	100.0

Source: NESS Household Survey 2013

The sampled households are adopting different coping strategies to meet their food shortage. The most common coping strategies adopted by the majority of households are to obtain daily wages through various local jobs (58%) and foreign employment (29.1%). A significant number of people also complement their incomes through business (14%) and services (14%) and sale of livestock (11%). A fewer number (3%) of households also reported borrowing loans and selling of household assets as complementary sources of income. The majority of Tamangs depend on daily wages (59%) and on foreign employment (31%) to meet their food needs.

Table 3-39: Coping strategies to address food insufficiency

Population groups	Loan	Daily Wage	Business	Sale of Assets	Sale of Livestock	Service	Foreign Employment	Tea Shop	Other
Household number and percentage (%)									
Tamang	7 (3%)	126 (59%)	27 (13%)	7 (3%)	24 (11%)	27 (13%)	65 (31%)	1 (0.5%)	8 (4%)
BCTS		3 (33%)	3 (33%)		1 (11%)	3 (33%)	1 (11%)		
Gurung		1 (33%)	2 (67%)			2 (67%)			
Dalit (Kami)		1 (100%)							
Magar		1 (100%)							
Newar			1 (100%)			1 (100%)			
Total/Overall	7 (3%)	132 (58%)	33 (15%)	7 (3%)	25 (11%)	33 (15%)	66 (29%)	1 (0.4%)	8 (3%)

Source: NESS Household Survey 2013

Less than one third of the sampled households (29%) are resorting to borrowing money to meet their food and other needs. The ratio of Tamangs borrowing loans is 28%; compared to 22% of BCTS. Money loans come mostly from informal sources such as relatives/friends (44%) and from traditional money lenders (10%) to a lesser extent. Only 28% of the households are borrowing from institutional sources. Interest rates vary from 12% (institutional loans) to 36% (informal lenders). The common purposes (Figure 3.5) for borrowing money reported by households were: agriculture/livestock (23%), business/industry (22%), house construction/repair (19%), and foreign employment (13%) etc. The average loan is Rs 45,835.

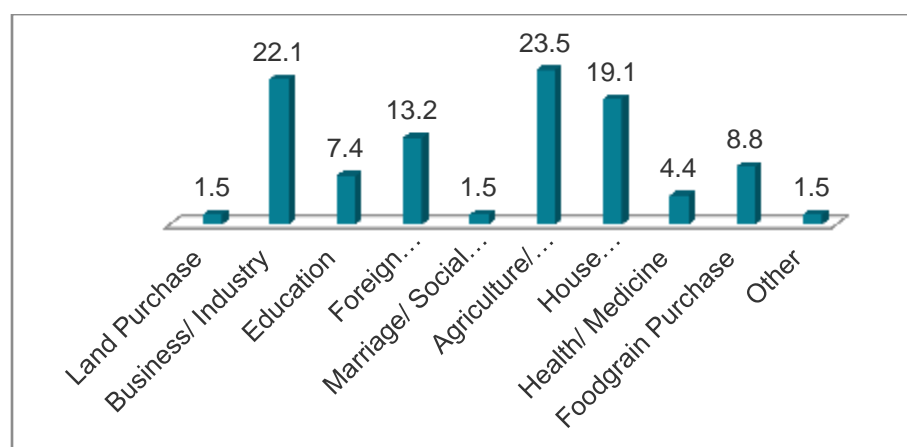


Figure 3-5: Purpose of Borrowing

Source: NESS Household Survey 2013

Livestock holding

A large number of households (78%) in the Project area are raising at least one type of livestock and keeping it in a separate shed (97%). Based on household heads, 81% of the men-headed households and 56% of the women-headed households are rearing livestock (Table 3.40).

Table 3-40: Number of households rearing livestock

Categories	Yes		No		Total	
	HH	%	HH	%	HH	%
By Gender of Household Head						
Men Headed	170	80.6	41	19.4	211	100.0
Women Headed	14	56.0	11	44.0	25	100.0
Total/ Overall	184	78.0	52	22.0	236	100.0

Source: NESS Household Survey 2013

The most popular animals are buffalos, reared by 77% of the households, followed by cattle (54%) and goat (46%). Almost half of the sampled households (46%) are also keeping poultry. About 40% of the sampled households obtain income, an annual average of Rs 10,400, from livestock and associated products.

Table 3-41: Types of livestock kept

Categories	Cattle		Buffalo		Goat		Poultry	
	No.	%	No.	%	No.	%	No.	%
Tamang	13	52.0	19	60.0	11	44.0	11	44.0
Dalit (Kami)	1	100.0	1	100.0	1	100.0	1	100.0
Total/ Overall	14	53.9	20	76.9	12	46.2	12	46.2

Source: NESS Household Survey 2013

The average number of animals per household is reported to be 0.63 for cattle, 0.65 for buffalo, 3.03 for goat and 1.79 for poultry (Table 3.42).

Table 3-42: Average Size of Animals

Categories	Cattle	Buffalo	Goat	Poultry
By Gender of Household Head				
Men Headed	0.62	0.69	3.17	1.79
Women Headed		0.40	2.20	
Total/ Overall	0.53	0.65	3.03	1.53

Source: NESS Household Survey 2013

Fruit trees and herbs

15% of the sampled households own fruit trees. The average number of fruit trees is reported to be 6.5 per household. Similarly, 5% of the Tamang families also cultivate herbs and obtain an annual income of Rs 5,000 from this activity.

Vegetable Growing

Less than half of the sampled households (44%) are growing vegetable crops; in an average crop surface of 0.074 ha. This production is mostly for self-consumption. However, Tamangs also sale vegetables and earn an average amount of Rs 2,100 per annum (Table 3.43). The most important area for vegetable production is in Dhunche VDC (average crop area of 0.115 ha per household and average earning of Rs 4,183/HH) due to its proximity to district headquarter.

Table 3-43: Households growing vegetables

Categories	HH Cultivating Vegetables		Average Area Under Vegetable (Ha/HH)	Average Production of Vegetables (Kg/HH)	Average Value of Production (Rs/HH)
	NO.	%			
Tamang	101	45.7	0.079	81.1	2233
BCTS	1	11.1	0.003		
Gurung	2	66.7	0.010	133.3	
Total/ Overall	104	44.1	0.074	77.7	2091

Source: NESS Household Survey 2013

Annual income and expenditure pattern

The average annual income is estimated in NRs 230,108. Among the three VDCs, the households of Dhunche VDC earn the highest income (Rs 231,477) and Haku VDC the lowest (Rs 170, 375). The average income of the Tamang community is estimated to be Rs 219,790 per household and Rs 368,422 for the BCTS group.

Remittance represents (see Table 3-44) a major contribution to the annual household income (21.3%) followed by salary/pension (17%), loan (14%) business and wage labor (13% each), and livestock (7%).

The average annual house expenditure is estimated to be NRs 138,454. The major share of expenditure goes to the purchase of food, payment of interest (11% each) followed by education, clothing (10% each), religious functions and meat/egg (8% each). The average annual expenditure of Tamangs is estimated to be Rs 137,315 per household, compared to Rs 150,389/HH for the BCTS group.

Table 3-44: Average annual income (year 2012) of households in the Project area

Categories	Food Grain Sale	Pulse Sale	Dairy Products	Livestock	Vegetable Sale	Potato	Herbs	Fish	Cottage Industry	Wage Labour	Salary	Pension	Remittance	Business	Sale of Assets	House rent	Loan	Other	Total
By Caste/ Ethnicity																			
Tamang	2,337	670	5,121	16,000	2,815	3,352	520	1,357	452	29,717	32,160	3,100	50,535	25,531	181	570	29,641	15,730	219,790
BCTS	-	-	-	4,111	-	533	-	-	-	25,556	82,222	-	-	133,778	-	-	122,222	-	368,422
Gurung	-	-	-	-	-	-	-	-	-	-	438,000	-	140,000	33,333	-	-	-	-	611,333
Dalit (Kami)	-	-	-	-	-	-	-	-	-	36,000	-	-	-	-	-	-	200,000	140,000	376,000
Magar	-	-	-	42,000	-	-	-	-	-	60,000	-	-	-	-	-	-	-	-	102,000
Newar	-	-	-	-	-	-	-	-	-	-	84,000	-	-	20,000	-	-	-	-	104,000
Total/ Overall	2,188	627	4,796	15,318	2,636	3,160	487	1,271	424	29,210	39,175	2,903	49,103	29,519	169	534	33,265	15,323	230,108
By Gender of Household Head																			
Men Headed	2,360	701	5,364	16,874	2,920	3,434	545	1,422	474	30,320	37,471	3,246	51,627	25,609	190	-	36,354	12,568	231,477
Women Headed	736	-	-	2,188	240	848	-	-	-	19,840	53,560	-	27,800	62,520	-	5,040	7,200	38,580	218,552
Total/ Overall	2,188	627	4,796	15,318	2,636	3,160	487	1,271	424	29,210	39,175	2,903	49,103	29,519	169	534	33,265	15,323	230,108
By VDC																			
Dhunche	2,831	1,510	10,202	19,818	3,486	5,371	1,071	3,061	1,020	20,556	65,382	6,061	38,847	58,306	-	122	48,602	19,171	305,419
Haku	892	-	-	21,507	227	319	-	-	-	26,034	28,271	-	41,288	11,068	678	1,932	25,373	12,788	170,376
Ramche	2,359	-	1,671	5,114	3,380	2,538	127	-	-	42,316	14,810	1,152	67,661	7,587	-	-	20,134	12,443	181,293
Total/ Overall	2,188	627	4,796	15,318	2,636	3,160	487	1,271	424	29,210	39,175	2,903	49,103	29,519	169	534	33,265	15,323	230,108
Share %	0.95	0.27	2.08	6.66	1.15	1.37	0.21	0.55	0.18	12.69	17.02	1.26	21.34	12.83	0.07	0.23	14.46	6.66	100.00

Source: NESS Household Survey 2013

Table 3-45: Average annual expenditure (year 2012) of households in the Project area

Categories	Food grain	Pulse	Vegetables	Herbs	Meat/ Egg	Ghee, Oil, Salt, Spices	Milk, Tea, Sugar	Beverages	Clothing	Kerosene/ Electricity/ Firewood	Agri/Livestock. Inputs	Education	Health/	Transportation	Land Tax	Religious/ Social	Interest	Investment (Foreign Employment, Asset Purchase)	Other	Total
By Caste/ Ethnicity																				
Tamang	14712	3808	2545	1041	11101	5812	3764	7507	13577	3600	4119	13541	9397	4038	67	10955	16237	10869	625	137315
BCTS	19222	5444	5056	0	9944	6778	7556	12667	12333	14467	300	28067	2556	3889	56	10500	11556	0	0	150389
Gurung	33333	24927	14333	0	18333	9000	10000	333	33333	18687	0	36667	1500	5667	0	16667	0	0	1200	223980
Dalit (Kami)	36000	3000	3000	0	15000	3000	2000	7000	5000	960	0	0	1000	2000	0	10000	22500	0	0	110460
Magar	36000	4000	3000	0	10000	4000	1500	3000	10000	11600	0	10000	10000	4000	200	0	5000	0	0	112300
Newar	10000	6000	16000	0	16000	6000	0	0	10000	6800	0	0	0	0	0	6000	0	0	3600	80400
Total/ Overall	15281	4146	2851	975	11181	5870	3955	7560	13714	4243	3868	14259	8963	4027	65	10939	15762	10178	616	138454
By Gender of Household Head																				
Men Headed	15424	4175	2632	379	11065	5770	3971	7579	13544	3850	4117	13391	8984	4227	65	10747	15787	11384	393	137485
Women Headed	14076	3900	4700	6000	12160	6720	3820	7400	15152	7558	1772	21584	8780	2336	65	12560	15552	0	2496	146631
Total/ Overall	15281	4146	2851	975	11181	5870	3955	7560	13714	4243	3868	14259	8963	4027	65	10939	15762	10178	616	138454
Share %	11.04	2.99	2.06	0.70	8.08	4.24	2.86	5.46	9.91	3.06	2.79	10.30	6.47	2.91	0.05	7.90	11.38	7.35	0.44	100.00

Source: NESS Household Survey 2013

The sampled households own different types of household assets. Among these, the most common assets are mobile phones (86%), pressure cooker/rice cooker (74%), furniture (52%), TV (48%), and radio cassette player (40%).

Table 3-46: Types of assets owned by households

Categories	Owning Asset		Average No. Owned	Average Value Rs
TV	114	48.3	1.0	15,154
DVD/VCR/DVD	19	8.1	1.0	3,168
Radio/ Cassette	95	40.3	1.0	2,168
Telephone Landline/ Mobile	204	86.4	2.3	10,900
Private Tap	3	1.3	1.0	6,667
Furniture	124	52.5	4.2	7,747
Sewing Machine	2	0.9	3.0	21,250
Motor Cycle	11	4.7	1.0	191,909
Bi-cycle	3	1.3	1.3	24,500
Iron	2	0.9	1.0	2,500
Rice Cooker/ Pressure Cooker	174	73.7	2.3	3,309
Refrigerator	7	3.0	1.1	13,714
Other	32	13.6	3.2	11,156

Source: NESS Household Survey, 2013

3.2.3 Access to Basic Services

Health

One third of the sampled households reported illness of their family members last year. People use a variety of health services. Hospital is reported to be the most preferred institution by the majority of people (81%). Other options include visiting the health post or using the services of *Dhami-jhankri*² (6% each). A fewer number of patients rely on private clinics (5%) and herbal medicine (1.3%).

Table 3-47: Health services used by the population (number of households and percentage)

Categories	DHAMI/JHANKRI		Herb		Health Post		Hospital		Private Clinic		Total	
Tamang	5	6.9	1	1.4	4	5.5	60	82.2	3	4.1	73	100.0
BCTS					1	33.3	2	66.7			3	100.0
Gurung							1	50.0	1	50.0	2	100.0
Dalit (Kami)												
Magar							1	100.0			1	100.0

² The traditional healers

Categories	DHAMI/ JHANKRI		Herb		Health Post		Hospital		Private Clinic		Total	
Total/ Overall	5	6.3	1	1.3	5	6.3	64	81.0	4	5.1	79	100.0

Source: NESS Household Survey, 2013

Electricity

The majority of the sampled households (93.6%) are connected to the electricity grid for lighting. However, some people still use other sources (Table 3.48) for lighting, such as Diyalo (5.9%), or wooden strips of pine trees, and kerosene (0.4%).

Table 3-48: Lighting sources in households

Categories	Kerosene		Electricity		Other (Diyalo)	
By Caste/ Ethnicity	No.	%	No.	%	No	%
Tamang	1	0.5	206	93.2	14	6.3
BCTS			9	100.0		
Gurung			3	100.0		
Dalit (Kami)			1	100.0		
Magar			1	100.0		
Newar			1	100.0		
Total/ Overall	1	0.4	221	93.6	14	5.9
By Gender of Household Head						
Men Headed	1	0.5	198	93.8	12	5.7
Women Headed			23	92.0	2	8.0
Total/ Overall	1	0.4	221	93.6	14	5.9

Source: NESS Household Survey 2013

Sanitary Facilities

More than half of the sampled households (58%) have access to a toilet facility, although a large number of households (41%) still lack this service. Among the three VDCs, Haku has the lowest coverage of toilet facility, with only 24% of the households having one. Similarly, a large number of Tamang families (43%) also lack toilet facility (Table 3.49). All the sampled households reported temporary types of toilet facility.

Table 3-49: Number and Percentage of Households Having Toilet Facility

Categories	Yes		No		Total	
By Caste/ Ethnicity	NO	%	NO	%	NO.	%
Tamang	126	57.0	95	43.0	221	100
BCTS	6	66.7	3	33.3	9	100
Gurung	3	100.0			3	100
Dalit (Kami)	1	100.0			1	100
Magar	1	100.0			1	100

Categories	Yes		No		Total	
Newar	1	100.0			1	100
Total/ Overall	138	58.5	98	41.5	236	100
By Gender of Household Head						
Men Headed	125	59.2	86	40.8	211	100
Women Headed	13	52.0	12	48.0	25	100
Total/ Overall	138	58.5	98	41.5	236	100
By VDC						
Dhunche	76	77.6	22	22.5	100	100
Haku	14	23.7	45	76.3	100	100
Ramche	48	60.8	31	39.2	100	100
Total/ Overall	138	58.5	98	41.5	236	100

Source: NESS Household Survey 2013

Water Supply

A majority of households in the Project area rely on tap water (82%) , while 16% rely on spring sources. A fewer number of households (1.3%) depend on canal and/or well water. The largest number of people relying on spring source for drinking purpose is recorded at Haku VDC (25%) compared to the other two VDCs (Table 3.50).

Table 3-50: Sources of drinking water for households

Categories	Piped Tap		Spring		KULO/ Canal		Well	
By Caste/ Ethnicity	No	%	No	%	No	%	No	%
Tamang	180	81.5	38	17.2	1	0.5	2	0.9
BCTS	9	100.0						
Gurung	3	100.0						
Dalit (Kami)			1	100.0				
Magar	1	100.0						
Newar	1	100.0						
Total/ Overall	194	82.2	39	16.5	1	0.4	2	0.9
By VDC								
Dhunche	86	87.8	12	12.2				
Haku	42	71.2	15	25.4	1	1.7	1	1.7
Ramche	66	83.5	12	15.2			1	1.3
Total/ Overall	194	82.2	39	16.5	1	0.4	2	0.9

Source: NESS Household Survey 2013

Means of communication

People in the Project area are using mostly the modern means of communication. Mobile phones, TV sets, and radios are the most popular means of communication and are used

by 79%, 47% and 45% of the households, respectively. Very few people in the area (only 8%) have the habit of reading newspapers (Figure 3.6).

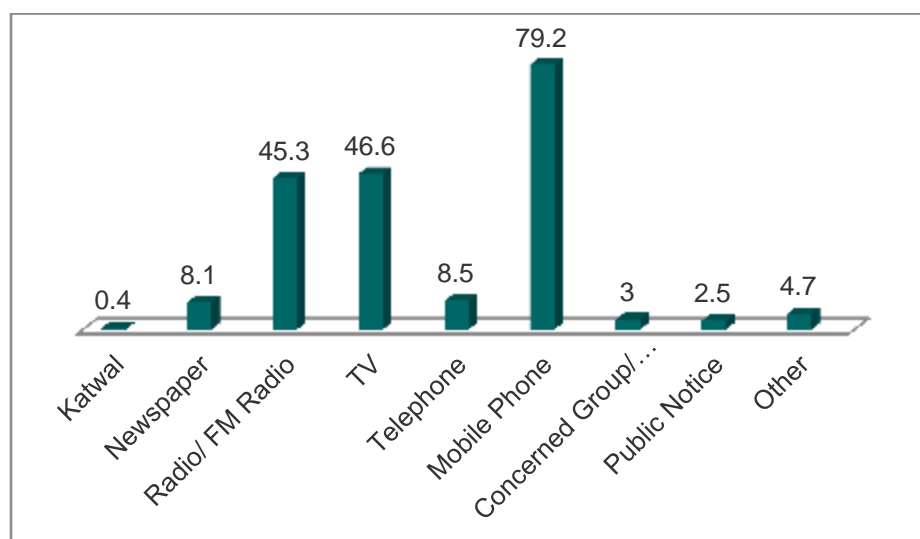


Figure 3-6: Means of Communication

Source: NESS Household Survey 2013

Participation in social/community organizations

Slightly more than a quarter of the sampled households (27%) claim to participate in at least one social/community organization or activity. The participation ratio is 26% for Tamangs and 44% for the BCTS group. The number of households affiliated in this type of organizations is reported to be greater in Dhunche VDC (38%), compared to Haku (20%) and Ramche (19%).

Table 3-51: Households participation in social and/or community activities

Categories	Affiliated with Groups/NGOs/CBOs		Female		Male		Total	
	No.	%	No.	%	No.	%	No.	%
By Caste/ Ethnicity								
Tamang	57	25.8	0.12	38.2	0.19	61.8	0.31	100.0
BCTS	4	44.4	0.56	71.4	0.22	28.6	0.78	100.0
Gurung	3	100.0	0.67	66.7	0.33	33.3	1.00	100.0
Total/ Overall	64	27.1	0.14	42.3	0.19	57.7	0.33	100.0
By Gender of Household Head								
Men Headed	58	27.5	0.12	38.8	0.19	61.2	0.32	100.0
Women Headed	6	24.0	0.28	63.6	0.16	36.4	0.44	100.0
Total/ Overall	64	27.1	0.14	42.3	0.19	57.7	0.33	100.0
By VDC								

Categories	Affiliated with Groups/NGOs/ CBOs		Female		Male		Total	
Dhunchhe	37	37.8	0.21	46.7	0.24	53.3	0.46	100.0
Haku	12	20.3	0.02	6.3	0.25	93.8	0.27	100.0
Ramche	15	19.0	0.14	64.7	0.08	35.3	0.22	100.0
Total/ Overall	64	27.1	0.14	42.3	0.19	57.7	0.33	100.0

Source: NESS Household Survey 2013

3.2.4 Gender Analysis

Gender issues in the Project area were studied from different perspectives, including: household leadership, work division, say in decision making, ownership of property and representation in organisations among the different caste/ethnic groups. This section presents the findings of the various focal discussion groups (FGD), key informant interviews (KII), and field observations.

The FGD, KII and observations conducted across the three VDCs of the Project area revealed that women are mostly engaged in agricultural work and household chores. Female population also prepare the local wine/alcohol called Chang or Raksi (traditional drink of the Tamang community in the area), which is drunk mostly during festivals. These liquors are also sold in local markets and the income thus generated used for buying rice, vegetables, spices and other households items. Three women reported having been to foreign countries for work and six have been to Dhunchhe for trade and business.

Work division in agriculture and related activities

The involvement of women in agricultural and related activities is higher than men: 66% for women vs. 34 % for men. Among the different types of agricultural related activities (Table 3.53), the ratio of women involvement is recorded higher in weeding and manuring (85% each), seed sowing (82%), storing (77%), selling (72%), harvesting (70%), product cleaning (65%) and land preparation (52%).

Table 3-52: Gender division (percentage) of labor in agriculture-related works

SN	Activities	Men	Women	Total
1	Land preparation	47.5	52.5	100
2	Manuring	15.0	85.0	100
3	Seed sowing	17.5	82.5	100
4	Weed removal	15.0	85.0	100
5	Irrigating	82.5	17.5	100
6	Crop harvesting	30.0	70.0	100
7	Transporting	50.0	50.0	100
8	Cleaning	35.0	65.0	100
9	Storing harvested crop	22.5	77.5	100
10	Selling production	27.5	72.5	100

SN	Activities	Men	Women	Total
	Overall	34.3	65.7	100

Source: FGD/KII NESS 2013

Work Division in household-related activities

Sixty seven percent of the household activities in the Project area are performed by woman (Table 3.53). In most households, women's involvement is greater than that of men except in the case of purchasing materials; a task in which 52% of men are involved. The highest women's involvement is in fetching water (82%), cooking and cleaning (82%), washing clothes (75%), caring for elderly members of the family (70%), child caring (68%), firewood gathering (62%), grass cutting (60%), and cereal/pulses grinding (55%).

Table 3-53: Gender participation (percentage) in household chores

S.N	Activities	Men	Women	Total
1	Fetching water	17.5	82.5	100
2	collecting firewood	37.5	62.5	100
3	Cutting grasses	40	60	100
4	Cereals/pulses grinding	45	55	100
5	Washing clothes	25	75	100
6	Cooking and cleansing	17.5	82.5	100
7	Child caring	31.25	68.75	100
8	Caring ageing member	30	70	100
9	Buying materials	52.5	47.5	100
	Overall	32.92	67.08	100

Source: FGD/KII NESS 2013

Participation of men and women in the decision-making process

Men are the dominant collective in the household and community decision making process, although the participation of women is reported to be increasing over time. On average, the ratio of women's participation in the decision making process is 42%, compared to 58% for men.

Tamang women have the least say in decision making with regards to borrowing money (24%), purchasing land and/or houses (26%). However, there are other activities in which women take more decisions than men, including works (54%) and education of children (52%). Significant say of women is also considered in family planning (47%), selling of agricultural products (45%) and in participation in community works and religious activities (42%).

Table 3-54: Gender participation (percentage) in decision making

S.N	Decision Making	Men	Women	Total
1	Agricultural works	46.25	53.75	100
2	Selling of agricultural products	55.0	45.0	100

S.N	Decision Making	Men	Women	Total
3	Purchasing land/houses	73.75	26.25	100
4	Loan	76.25	23.75	100
5	Child education	47.5	52.5	100
6	Ancestral rituals	57.5	42.5	100
7	Family planning	52.5	47.5	100
8	Participation on religious and community works	57.5	42.5	100
	Overall	58.28	41.72	100

Source: FGD/KII NESS 2013

Ownership of property

In most cases (65%) the ownership over property remains under the name of men. Some type of assets are predominantly owned by women, such as ornaments (60%). However, men predominantly own the assets such as houses (87%), land (77%), animals (65%), money/bank accounts (60%).

Table 3-55: Gender ownership of property (percentage of male and female)

S.N	Property	Men	Women	Total
1	Land	77	23	100
2	House	87	13	100
3	Money/Bank account	60	40	100
4	Domestic animals	65	35	100
5	Ornaments	40	60	100
6	Overall	65	35	100

Source: FGD/KII NESS 2013

Other Issues

The main diseases that affect women in the region are: gastritis, headache, diarrhea, dysentery, typhoid, ARI, and other lungs diseases. Uterine prolapsed and HIV have not been reported so far. White water discharge is not common but reported by some women in the area (e.g. Haku VDC-3, Taksin tole, Hakubensi). Three females have gone through heart surgery recently (i.e. artificial valve replacement in Dhunche-4, Sole).

Besides agriculture and household works, more than 80% of Tamang women have knitting skills. They usually knit sweater, muffler and socks.

3.2.5 Use of Natural Resources

Use of Forest Resources

A majority of the people of the Project area are dependent on local forest products for cooking, feeding and construction/repair of their houses. As shown in Table 3-56, 66% of

the households collect timber, 89% collects firewood and 61% collect forage for energy and/or livestock from the nearest forest area (Table 3.57).

Table 3-56: Use of forest products by households

Categories	Timber		Firewood		Ground Grass		Herb		KHAR		Bamboo		Other	
By Caste/ Ethnicity	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Tamang	106	66.7	142	89.3	101	63.5	1	0.6	8	5.0	1	0.6		
BCTS	2	66.7	3	100.0										
Gurung	1	33.3	2	66.7										
Dalit (Kami)	1	100.0												
Magar			1	100.0										
Newar														
Total/ Overall	110	65.9	148	88.6	101	60.5	1	0.6	8	4.8	1	0.6		
By Gender of Household Head														
Men Headed	101	67.8	132	88.6	93	62.4	1	0.7	8	5.4				
Women Headed	9	50.0	16	88.9	8	44.4					1	5.6		
Total/ Overall	110	65.9	148	88.6	101	60.5	1	0.6	8	4.8	1	0.6		

Source: NESS Household Survey 2013

The households collect forest products from both private and government forests. Private forest, however, provide most of the forest products requirement of the households (Figure 3-7). Herbs, on the contrary, are mostly collected from the government forests.

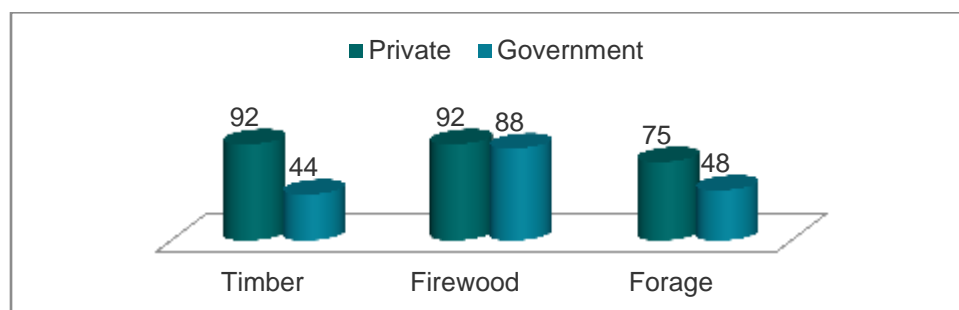


Figure 3-7: Households Reporting Sources of Major Forest Products

Source: NESS Household Survey 2013

In Haku VDC, communities in Wards 8 and 9 are reported to depend on two community forests for firewood, timber and other forest products. They pay Rs 30 per month to have access to these forests. Animal grazing in the area is free of cost. Most of the households take their cattle on the high mountain pasture (*Kharka* in Nepali) during the monsoon season. Herders carry their own luggage, food stuffs with them and reside there for a month or longer ranching cattle on the high mountain pasture. The cattle are brought to the settlements in winter. Animal dung is used as compost fertilizer in the agricultural lands.

River and water use

NESS conducted an inventory to identify the river and water users and uses along the 11-km stretch of the Trishuli River between the weir and the tailrace; this section of the river, which we denominate the Project Affected River Stretch (PARS), consists of the diversion reach and will be under reduced-flow conditions once the project starts operations.

Drinking water and other domestic/recreational uses

River water within the PARS is used by people of the Gunchet settlement (Ward no. 1, Ramche VDC and Ward No. 1, Dhunche VDC) during the dry season for drinking, cattle feeding, bathing and washing of cloths and utensils. Water is collected directly from the river and there are no engineered tapping structures for water supply. Figures 3-8 and 3-9 show the locations of these water uses in the Trishuli River.



Figure 3-8: River and water uses along the diversion reach in the Trishuli River

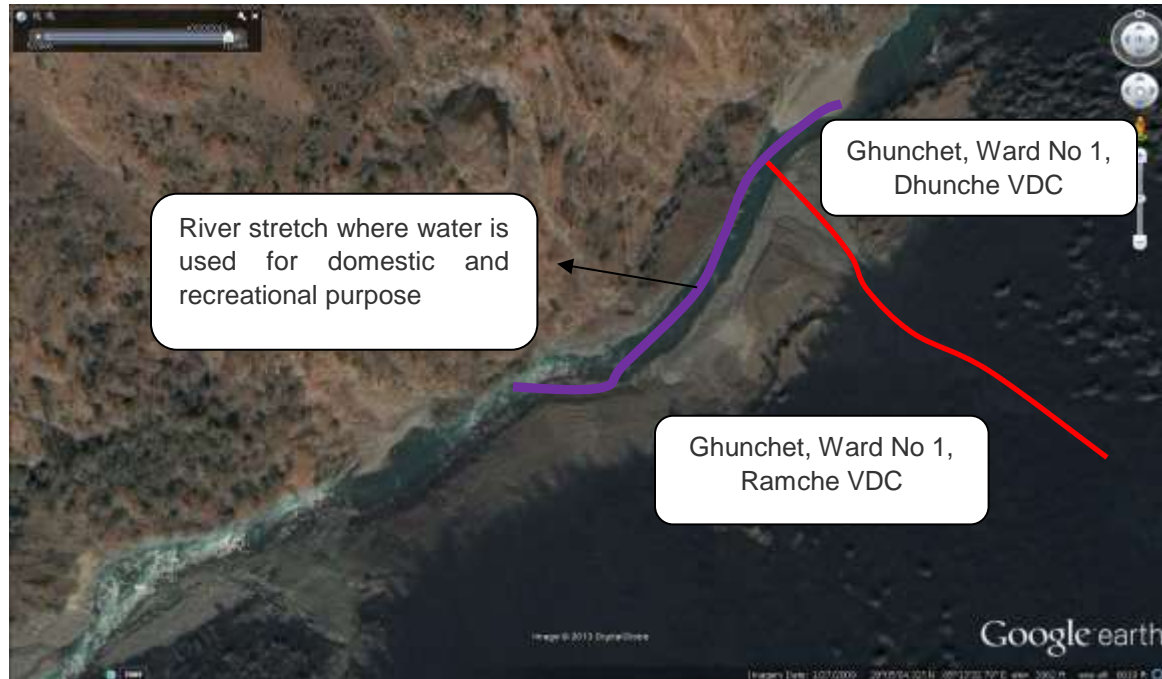


Figure 3-9: Detail of water use sites around Ghunchet Settlement

Water Mills

There are two traditional grain watermills in the PARS. These watermills are used throughout the year. One of the watermills is located on the right bank in Mailung, Ward 9, Haku VDC, near the suspension bridge connecting Haku-9 with Ramche-1, about 700 upstream of Mailung Khola Dovan area. The other one is located about 200 meters downstream from the suspension bridge on the left bank of the Trishuli River in Grecho, Ward 1, Ramche VDC (see Figure 3-10).

Water to these watermills is diverted from the Trishuli River through earthen canals that must be regularly repair by the mill owners. These watermills have a significant value during the dry season when most of the other watermills in small tributaries around the area become non-functional due insufficient water in the tributaries.



Figure 3-10: Location of water mills and canals

Irrigation use

One location of irrigated agriculture was identified during the river inventory. This plot of land, which was established in 1961 (2018) and serves four households, occupies four ropanies (one ropani = 508m²); out of the 20 ropanies of lowland (*Khet*) in Ramche VDC-1. Local farmers plant rice in the wet monsoon season. The irrigation system is an earthen structure and has no permanent diversion structure at the intake. There are few houses close to the field. The field faces west and receives low sunshine in the winter season and hence winter crops and other cash crops are not generally grown in the field. People in the area practice traditional crops like maize and mustard in the area in favorable weather conditions.

Fishing

No commercial fishing was reported in the PARS. However, locals, particularly from the Gumchet area (part of Ward 1 of Dhunche VDC and Ward 1 of Ramche VDC), occasionally undertake fishing activities in the monsoon season in the Mailung Dovan area (Figure 3.11), or lower part of the diversion reach. Upstream from Gunchet, fishing is not practice due to the rugged terrain and difficult access to the river. Sonam Lama from Haku-9, Gogane settlement reported to depend on fishing for his family livelihood. He is engaged in fish trapping on the Dangdung Khola and the Trishuli River particularly in the fish migrating periods during the monsoon.



Figure 3-11: River stretch used for local fishing

Fishing activity was also recorded as part of the aquatic and fish surveys conducted by NESS through August 2013-July 2014 (see Appendix B for detailed aquatic survey results) and confirmed that this activity is practically non-existent in the upper reaches of the studied river reach, due to the steep terrain and the difficulty in accessing the river in that part, as well as the restrictions on fishing imposed by the Langtang National Park (eastern bank of the Trishuli). The number of fishermen reported by NESS aquatic survey field team is shown in Figure 3-12.

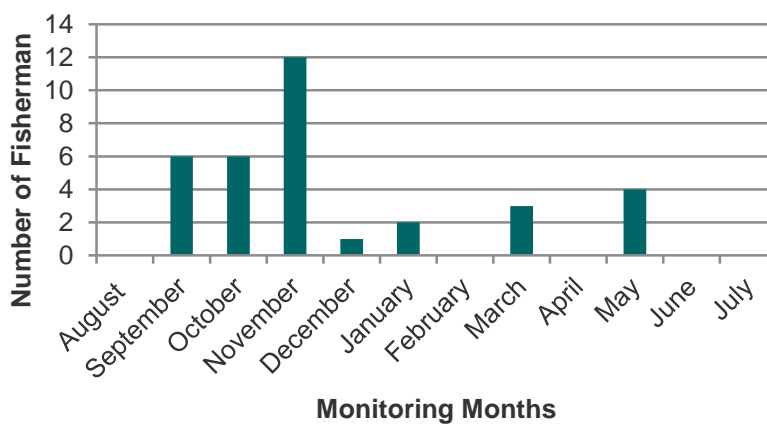


Figure 3-12: Fishermen survey
Source: NESS Aquatic Survey 2013-2014

Only two fishermen reported their livelihoods depending on fishing activities. The other fishermen interviewed during the survey practice fishing for recreational purposes.

Cultural Activities

Rivers in Nepal are considered highly sacred. The Hindu community throughout the country performs their death rituals on the banks of rivers. Rivers, especially the spots at where they confluence, are considered holy places and people will conduct ritual baths at some river locations. Because the Project area is largely dominated by non-hindu communities, cultural and religious activities linked to rivers are less important than in other regions in Nepal. The Hindu communities of the Project VDCs perform this type of activities in the Betrawati area, 14 km downstream from the location of the Project tailrace.

Tourism and Recreational Activities

In Project area, the Trishuli River acts as western boundary limit of the Langtang National Park (LNP). Due to the topographic conditions, white water rafting in the Trishuli River is not practiced in the area.

3.2.6 Sources of Energy

Firewood is the major source of fuel for cooking; used by 93% of the sampled households. Almost a quarter of the households (24%) also use liquified petroleum (LP) gas or, to a lesser extent, biogas (1.3%) for cooking purposes. The use of LP gas is reported to be highest (45%) in Dhunche VDC, due to availability and affordability, compared to Ramche (12%) and Haku (7%) (Table 3.57).

Table 3-57: Source of energy for cooking

Categories	Firewood		Bio-Gas		LP Gas	
	No.	%	No.	%	No.	%
Ethnicity wise						
BCTS	7	77.8	1	11.1	6	66.7
Gurung	3	100.0			2	66.7
Dalit (Kami)	1	100.0				
Magar	1	100.0			1	100.0
Newar					1	100.0
Total/ Overall	214	92.6	3	1.3	56	24.2
VDC Wise						
Dhunche	84	87.5	2	2.1	43	44.8
Haku	55	94.8	1	1.7	4	6.9
Ramche	75	97.4			9	11.7
Total/ Overall	214	92.6	3	1.3	56	24.2

Source: NESS Household Survey 2013

The average annual consumption of energy (Table 3-58) per household is estimated to be 2,258 kg for firewood and 8.28 of cylinders/annum for LP gas. The average consumption of firewood is highest among the Dalit community (6,000 kg/year), whereas LP gas is consumed predominantly by the BCTS group (24 cylinders/year). The highest consumption of firewood is recorded for Ramche VDC (2,832 kg/yr per household) of and LP gas for Dhunche VDC (16.6 cylinders/HH/yr). The use of improved stoves is limited to 13% of the sampled households and it is more popular in Dhunche VDC, where 17% of the families have installed this device.

Table 3-58: Average annual consumption of energy

Categories	Firewood (Kg)	LP Gas (Cylinder)
By Caste		
Tamang	2328	7.44
BCTS	833	24
Gurung	1400	15.96
Dalit (Kami)	6000	
Magar	1200	12
Newar		48
Total/ Overall	2258	8.28
By Gender Head of HHs		
Men Headed	2346	6.6
Women Headed	1536	22.08
Total/ Overall	2258	8.28
By VDC		
Dhunche	2006	16.56
Haku	1914	2.28
Ramche	2832	2.64
Total/ Overall	2258	8.28

Source: NESS Household Survey 2013

3.2.7 Incidence of Wild Animals

Almost 60% of the surveyed households reported damage, mainly to crops, from wild animals. The highest incidence of damage (Figure 3-12) is caused by monkey (89%), followed by *Dumsi*/porcupines (84%), boars (43%) and bears (39%). Among the three VDCs, Dhunche and Ramche are more affected by wild animals (>60%) compared to Haku VDC (>50%). About 2% of the sampled households also reported killing or wounding of animals by leopard and bear.

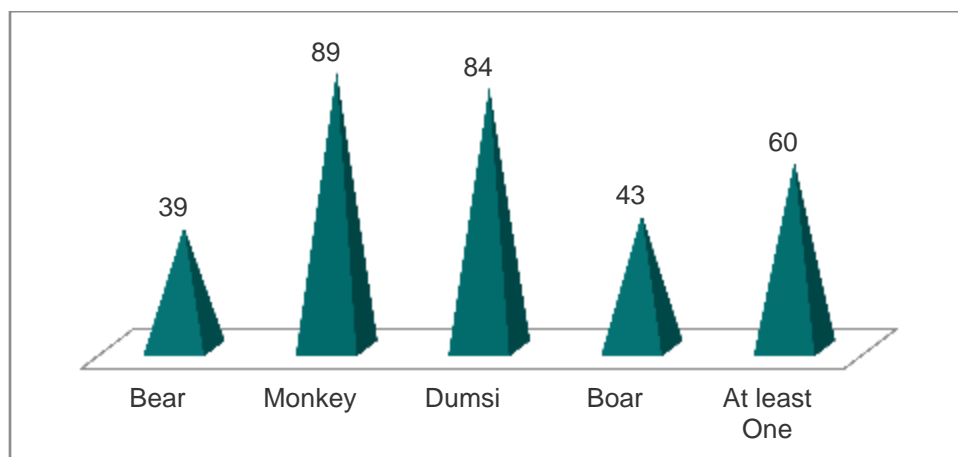


Figure 3-13: Households Reporting Incidence of Wild Animals

Source: NESS Household Survey 2013

3.2.8 Vulnerable and Disadvantaged Groups

The sample area is dominated by indigenous Adivasi/Janjati, mostly Tamangs (93.6%), who are recognized as a marginalized indigenous group. The indigenous Gurung community, categorized as disadvantaged, is also present in the area in significantly lower numbers (1.3%). The caste group Brahmin/Chhetri/Thakuri/Sanyasi (BCTS) constitutes 3.8% of the population in the area. Only one of the sampled household is categorized as Dalit (lowest caste), another as Magar (disadvantaged Adivasi/ Janjati) and a third one as Newar (advantaged Adivasi/Janjati).

The percentage of women-headed households in the project affected area is also quite significant (11%) due to increasing trend of the migration of male members to foreign jobs. Thus, the **vulnerable and disadvantaged groups** of the project affected VDCs are defined as follows:

- Adivasi/Janajati³ Groups- Tamangs (predominant), Gurungs, Magar and Newar
- Households headed by women
- Poor households that fall below the poverty line according to the national standard (i.e. households having per capita total annual consumption income below Rs 19,859. For more details refer to Annex 4)

³ The 59 Ethnic groups of Nepal are defined as Adivasi/Janjati groups of Nepal by Government of Nepal and they are further divided into five groups based on economic and social wellbeing by Nepal Federation of Indigenous Nationalities (NEFIN: <http://www.nefin.org.np/>)

3.2.9 Socio-Cultural Environment of the Project-Area Communities⁴

The Project area is inhabited by a variety of Nepalese caste and ethnic groups. The largest single groups, the vast majority of local inhabitants, are Tamangs (93.6%), a marginalized Adivasi/Janajati group who maintains rich socio-cultural traditions and lifestyle.

Other minority groups residing in the area are the caste group BCTS (3.8%) and other Adivasi/Janajati, such as the Gurung (1.3%), the Magar (0.43%) and the Newar (0.43%). These minority groups, however, live in harmony with the majority Tamangs, whose culture dominates.

The Tamangs

Socio-economic context

The traditional occupations of the Tamang in the Project area have been livestock herding and growing maize and potato (subsistence economy). The agricultural production is declining due to deforestation, lack of fertilizer and encroachment of wild animals from Langtang National Park (LNP). Wild animals can easily approach all the crops cultivated by local people and can damage as they want, but the local people cannot touch the wild animals. Forests are a key part of the Tamangs livelihood and lifestyle since they are sources of fuel, fodder and pasture, and also sacred places housing nature spirits and deities.

Tradition, culture and believes

The Tamang people a mixed religion of animism and Tibetan buddhism. Tibetan buddhism has also integrated and legitimized age-old tradition of indigenous healing practices and the use of medicinal plants. Therefore, healing is an integral part of the religion. Knowledgeable people in the communities are known as lamas and have responsibilities in curing illnesses; believed to be the result of physiological as well supernatural disorders.

Traditionally, the Tamang social and cultural practices have blended with Buddhist ideologies. The Tamang culture is characterized by various traditional social institutions such as *Nangkhori*, *Gedung*, *Chokpa* and *Ghyang*. Tamang communities are organized, maintained and regulated through these social institutions.

People of the Project area live together with supernatural elements such as spiritual beings, sacred places, feared places, altars, evils, etc. Therefore, they perform *Puija* to pay respect to the mother earth while opening a new road, building a new house, or ploughing a field before sowing, felling trees, performing marriage ceremony, going for hunting, eating new

⁴ Most part of the socio-cultural aspect of the Tamang Communities is cited from the study entitled "Tamang Healing in the Himalaya- The Tamang Healing Knowledge and the Development Interventions in and around Langtang National Park of Central Nepal"; Parsuram Tamang, Gyan Lal Shrestha and Krishna Bd Bhattachan; Milijuli Nepal, Kathmandu 2001.

fruits, etc. This ritual involves offering water, incense, grains, liquor, and prayers. They believe that human activities disturb the spirits of souls, and therefore some sort of compensation is required. Likewise, they also pay tribute to the mountains, water and their ancestral land. The healers classify the supernatural beings and ancestral spirits into three categories as below:

- The Lha (god and goddess category)
- The Ghost Category and the Bir and
- Masan Category

Similarly, the Tamangs exhibit some common practices, including:

- Tattooing: making pictures by piercing in skin known as tattooing, which normally takes place in the event of starting a good work.
- Lama Pathi- a mode of payment to the Lama who performs different spiritual activities to save the community from the natural calamities.
- Tamang Taboos: activities prohibited by Tamang culture are called Taboos. For instance Tamang restrict certain species of timber for construction, they area; Angeri, Longbede, Langpar, Banjh, Khashru. Similarly, Ainjeru and Bilaune are not used as firewood.
- Liquor Production: Liquor (both fermented and distilled) making is one of the most essential chores of Tamang women. It is not only essential for their daily consumption but also is mot to perform their rituals.

The Gurungs

Socio-economic context

The traditional occupations of the Gurung have been livestock herding (sheep, goats, and cattle), trans-Himalayan trade and farming on the steeply terraced mountainsides. Forests play a key role in the maintenance of Gurung lifestyle and in the subsistence of their economy; they provide fuel, fodder and pasture, and also a spiritual role.

Tradition, culture and believes

The Gurungs have a long tradition of practicing natural healing arts, often combined with Western medicine when it is affordable. Gurung have a rich tradition of music and culture. They practice a social tradition called *Rodi* in which young people meet in the evenings to socialize, share music and dance, and find marriage partners. *Rodi* also has important economic functions, since during peak agricultural season, youth gather in work parties to help with harvesting and other farm work, and to perform communal tasks. Lately, the

practice of *Rodi* has weakened, partly as a consequence of formal education and outmigration of young locals.

Gurungs practice a form of Tibetan Lamaism heavily influenced by a pre-Buddhist and largely animistic form of religion called Bön. Some characteristics of Bön are the belief in nature spirits and spirit possession, and in the existence of supernatural creatures in the forests. Each Gurung clan or village have their own local deities which are believed to have considerable power over nature and influence in human life. Nonetheless, despite being predominantly Buddhist and animistic, the Gurungs also traditionally observe major Hindu national festivals such as Dasain.

Table 3-59: Inventory of Religious and Cultural Sites in the Project VDCs

SN	VDC	Cultural Heritage	Cremation Sites
1	Haku	There are no built shrine structures in the area. Locals worship their local deities (demons, gods, natural powers) on open land close to the stream (<i>Khola</i>) nearby village. They celebrate festivals like Dashain, Bhadra Purnima, Shrawne & Maghe Sankranti, and Buddha Jayanti of the Hindu and Buddhist religion.	The dead are normally buried on the ground. Burial place is located in the upper part of the hills.
2	Dhunchhe -4 Sole	<p>Menchyau Dupchyo: It is a scared place uphill from the village and Pasang Lamu Highway, which is about 3 hours walk within the Langtang National Park. The place has been identified before 10 years. There is a cave at that place and springs originate from that place, where people usually bath in the month of Magh. Menchyau dupchyo is the Tamang language, in nepali translation, Menchyau means Aausadhi (Medicine) and Dupchyo means Pani Palayako (Springs origination).</p> <p>Every year in the month of Magh, many pilgrimage from Dhunchhe, Ramche visit the site and bath there. They believe that the many illnesses like scabies, wounds, headaches and many others will be cured after the bath.</p> <p>Religious Plant: The Tamangs worship Paiyu tree as a God.</p>	The constructed structure at the burned place is called <i>Purgam</i> in Tamang language. At the locality, there are about 8 Purgams.
3	Dhunchhe-1&2	<p>Dupla Sambling Gumba is located near to the settlement. People offer prayer in each Dashain, Purnima and Aunsi in the Gumba. A special Mela organized at this site in Buddha Purnima (Baisakhi Purnima).</p> <p>Chenti Garpu, one of the Shrines is nearer to the settlement and people offer Bhumi Puja in the shrine in Fagu Purnima, Jestha Purnima and Janai Purnima.</p>	At the locality, there are about 16 Purgams.

SN	VDC	Cultural Heritage	Cremation Sites
4	Ramche	Most of the villagers celebrate Dashain, Tihar, Maghe Sankranti, Shrawan Sankranti but none of them celebrate Loshar.	Most of the locals use their own land as crematory site for the dead body. Barely have they cremated their dead body on government land. Lamas cremate their dead body at the summit of the hill.

A fewer number of BCTS and Dalits residing in the project area follow Hindu religion and culture. There are only a few major religious edifices in the project area, as recorded in Table 3-59.

3.2.10 Peoples' Perceptions, Expectations and Needs

People are generally positive towards the Project and keen to work together with the proponent. The negative impacts associated to the Project as perceived by local people are: deforestation, pollution and cultural and social problems. They have also the feeling that the benefit of any development project is often captured by the local elites, while the majority of the population has no access to these benefits. Benefit sharing is therefore one of the major concerns for local communities.

The activation of landslides or mass movements is another major concern for locals, since the area is already susceptible to this natural risk. People from the Gogane area (Ward 9, Haku VDC) think that the construction of underground tunnel, just about a few hundred meters below their settlement, could adversely affect their built up structures

Table 3-60: Communities expectations and needs in relation to the Project

VDC	Expectations from the Project	Community needs
Haku	<ul style="list-style-type: none"> - Support the villagers on forest conservation and management - The road is just downhill from the settlement area which makes the village susceptible to landslide and poses risk to whole village. So, the project has to address these issues while implementing the construction works. - The only school in the area is Shree Klaika pra. Vi., the children have to go Thulo Haku for the higher education which is about 3 and half hours walk from the settlement which is not possible daily. So the project needs to support school to upgrade to secondary level and provide qualified teacher and other necessary resources. - Support for the safe drinking water and to improve the sanitation condition of the area - Close collaboration with the villagers in different project related activities - Skilled training to the women such as knitting, sewing and other entrepreneur trainings. - Adult education (Praudh Sikshya). - Support marginalized and poor Tamang family in education and health - Construction of new building for women group of the locality. - Scientific agriculture training to the locals. - Create equal opportunity for men and women for job placement in the project. - Equity share to the project affected family and community. - Distribution of electricity to the area free of cost - Compensation to standing crops and compensation to land. - Provision of free share to each person from Haku VDC. - Least damage of the landscape and whenever there is disturbance in existing land, appropriate engineering and bio-engineering practices must be adopted by the project for the stabilization of the land. - The retaining wall should be constructed hand in hand with the construction of road corridor 	<ul style="list-style-type: none"> - Health facility to the villagers - Quality education - Drinking water and Sanitation - Motor Road/Upgrade foot trails - Development of access road - Education and health to Tamang families - Skill development training

Dhunchhe	<ul style="list-style-type: none"> - Assist the dairy cooperatives formed by the villagers named Menchyau Dupchyo. - Develop local infrastructures and assist for quality education, health and sanitation of the area. - Training related to the traditional knowledge promotion of community. - Training and assists to the herbal farming in the area. - Support in the livestock ranching in the area. - Project should support the locals in education such as providing scholarships to the intelligent locals in technical studies like overseer/sub-oversee, nurse, plumbing, electrician etc. - Training related to the traditional knowledge promotion of ethnic community. - Training and assists to the herbal farming in the area. - Priority to local for employment according to their skills. - Construction of Gumba where the locals can worship at the time of Aunshi and Purnima every month. 	<ul style="list-style-type: none"> - Quality education and qualified teacher to upgrade the local school to secondary level - Supply of safe and clean drinking water. - Well equipped health centers and qualified doctors - Drainage management in the area. - Supply of safe and clean drinking water. - Well equipped health centers and qualified doctors - Drainage management in the area
Ramche	<ul style="list-style-type: none"> - Development activities in the area. - Supply of electricity in free of cost - Employment opportunity to locals and with priority. - Access to safe drinking water and generally in the dry periods. - Construction of irrigation canal for a better agriculture yield. - Landslide control - Water supply and Sanitation management in the area - Foot trail improvement (From Mijup, Ramche-9 to Guranse, Ramche-9, about 10 km) - Ramche- Handiphor – Mijup – Bimire Agricultural Road Completing track and upgrading. - Commercialization of Herbal Farming - (Chiraito, Sugandhawal, Satuwa, Pashanbet, Lokta, etc). - Free Equity for the Individuals of affected VDC. - Expansion and improvement of rural electrification in Ramche VDC. 	<ul style="list-style-type: none"> - Safe drinking water and sanitation - Improved road access - Electricity - Irrigation - Landslide control

Source: FGD and KII, NESS 2013

Locals fear that construction activities could trigger major landslides in the area. Inhabitants of the Tiru area (Ward 8, Haku VDC), which is about 300 meters above the construction area, also expressed their concern about ground vibrations as a result of heavy construction works in the surge-shaft area.

Positive perceptions about the Project were also recorded. In general, people think that having a large scale project in their area is also a matter of dignity. Some people even think that Korean people coming and working in their villages is a matter of pride and the local

people are also optimistic and think there will be opportunities from the Korean staff working at the Project site. The expectation and needs of the locals are summarized in Table 3-60.

3.3 The Project Affected Families (PAFs)⁵

Altogether 40 households, all from Haku VDC, are reported to be directly affected by the Project through economic and/or physical displacement. As of June 2014⁶, the following groups of PAFs had been identified:

- **Private land owners:** 3.8 hectares of agricultural land and 11 houses have been acquired from **21 private land owners**, predominantly from the Tamang community, an indigenous Adavasi/Janajati group. A list of these private owners as well as the details (i.e. surface, crop, etc.) on the lands purchased is presented in Annex 1.
- **Guthi tenants:** The Project has also acquired 15.7 ha of *Guthi* (trust) land belonging to a Swayambhu (monastery). This land extension includes (see details in Annex 2) 26 agricultural plots held by **19 guthi tenants** and four houses and other constructions (i.e. four cowsheds) which have also been purchased by the proponent. Most of the tenants are members of the Tamang community. Among the four households whose houses have been purchased, three of them belong to the Dalit group, considered untouchable according to the Hindu caste system. The Dalit community is considered a socially and economically marginalized group in Nepal.

There are also an undetermined number of households that will be indirectly affected by the Project due to the acquisition (various types of leasing) of 76.7 ha of community forests, which are owned by the government. These 76.7 ha are distributed in six community forests and include 33 ha that will be used for the construction of the access road. The loss of access to forest resources (e.g. firewood, food and medicine, fodder, etc.) can have negative impacts on the livelihoods of local communities.

The following sections describe the socioeconomic and cultural characteristics of the 34 PAFs (33 households, 97%, of Tamang communities, and 1 household of the Dalit that were surveyed as part of the complementary social baseline studies.

3.3.1 Demographic Characteristics

Family Size, Ethnicity/Caste

The average family size of the PAFs is estimated to be 7.26 people per household, which is relatively higher than the average in Project affected area (i.e. 5.71), the district average (4.42) and the national average (4.88). Between the Tamang and the Dalit communities, the family size is slightly higher in the case of the Tamangs (7.3 persons) compared to the Dalit

⁵ The affected families are defined as those who lose their partial or full livelihood assets (e.g land, business, house etc).

⁶ Brief Note on Land Acquisition Practice and Process in UT-1, and its compliance with IFC Standards. NWEDC, June 2014

(5.0 persons). Similarly, the family size of men-headed households is higher (7.48 persons) compared to women-headed households (6.0 person), indicating the added difficulties of women-headed households for raising children.

The majority (85%) of the PAFs are headed by a male member. However, a significant number of households (15%) compared to the Project area (11%) are headed by women; probably due to the increasing trend in men outmigration.

Table 3-61: Household and Population Size of the Project affected Families

Categories	Households		Average Family Size	Population		
	Number	%		Men	Women	Total
By Gender of HH Head						
Men	29	85.3	7.48	100	117	217
Women	5	14.7	6.0	19	11	30
Total / Overall	34	100	7.26	119	128	247
By Caste/Ethnicity						
Tamang (marginalized Adivasi/Janjati)	33	97.1	7.3	117	125	242
Dalit (Kami)	1	2.9	5.0	2	3	5
Total / Overall			7.26	119	128	247
By VDCs						
Haku	34	100	7.26	119	128	247
Total/ Overall	34	100.00	7.26	119	128	247

Source: NESS Census Household Survey 2013

20% of the PAFs population is either under 5 years (10%) or older than 60 (10%), and therefore economically inactive. Approximately half of the population (53%) falls in the economically active age group (15-59 years).

Table 3-62: Age structure of sample population

Age Group	Male	Female	Total
Below 5 Yrs	10.1	10.9	10.5
5-14 Yrs	30.3	22.7	26.3
15-59 Yrs	50.4	55.5	53.0
60 Yrs and Above	9.2	10.9	10.1
Total	48.2	51.8	100.0

Source: NESS Census Household Survey 2013

Family Structure and Settlement Period

The survey revealed that the majority of PAFs (62%) are living in a nuclear family structure, while 38% have adopted a joint or extended family structure (Figure 3.13)

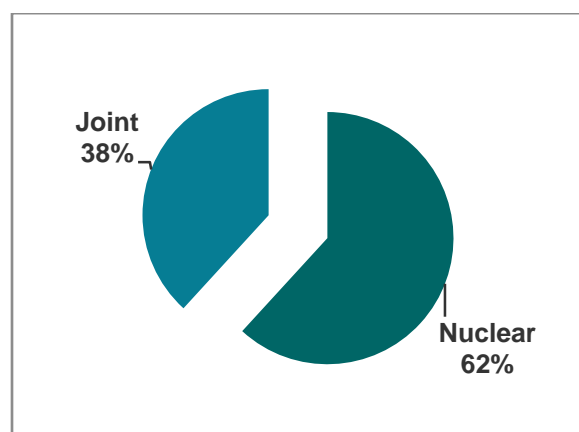


Figure 3-14: Family Structure

The PAFs have a long history of settlement in the area. As indicated in Table 3-63, the majority of the project affected families interviewed (94%) have resided in the area for over two generations and 5.9% for one generation.

Table 3-63: Settlement period

Categories	More than two generations		One Generation		Total	
	NO.	%	NO.	%	NO.	%
By Caste/ Ethnicity						
Tamang	31	93.9	2	6.1	33	100
Dalit (Kami)	1	100.0			1	100
Total/ Overall	32	94.1	2	5.9	34	100
By Gender of Household Head						
Men Headed	27	93.1	2	6.9	29	100
Women Headed	5	100.0			5	100
Total/ Overall	32	94.1	2	5.9	34	100

Source: NESS Census Household Survey 2013

Educational Status

Approximately one third of the project affected population (32%) is literate. The illiteracy ratio among men is 78% compared to 59% of women. The literacy ratio among women is 41% compared to 22% of men. The higher percentage of literate women is due mainly to their participation in campaigns of adult and informal literacy programmes in the project affected VDC by different agencies in the recent years.

Table 3-64: Educational Status among Population aged 5 years and above (% of Population)

Categories	Literate			Illiterate			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
By Caste/ Ethnicity									
Tamang	21.7	41.2	31.8	78.3	58.8	68.2	48.2	51.8	100.0
Dalit (kami)	50.0	33.3	40.0	50.0	66.7	60.0	40.0	60.0	100.0

Total/ Overall	22.2	41.0	32.0	77.8	59.0	68.0	48.0	52.0	100.0
By Gender of Household Head									
Men Headed	22.2	36.8	30.1	77.8	63.2	69.9	45.9	54.1	100.0
Women Headed	22.2	81.8	44.8	77.8	18.2	55.2	62.1	37.9	100.0
Total/ Overall	22.2	41.0	32.0	77.8	59.0	68.0	48.0	52.0	100.0

Source: NESS Census Household Survey 2013

Among the literate population, almost a quarter (24%) is just literate. Almost 42% of the population has completed primary level education, 19% has completed lower secondary level education and 13% have passed class 10. The majority of the Tamangs family members have just completed primary level education (42%), 19% have completed lower secondary level education and 12% have passed class 10. Similarly, a majority of the members of the women-headed households have obtained primary education and 27% secondary education (Table 3.65).

Table 3-65: Level of Education among Population Aged 5 Years and Above (% of Population)

Categories	Literate Only	Primary Level	Lower Secondary Level	10 Passed	Higher Secondary	IA Passed	BA Passed	Total
Tamang	24.5	41.7	18.7	12.2	0.7	0.7	1.4	100
Dalit (Kami)		33.3	33.3	33.3				100
Total/ Overall	23.9	41.6	19.0	12.7	0.7	0.7	1.4	100
Male Headed	25.2	39.4	18.1	14.2	0.8	0.8	1.6	100
Female Headed	13.3	60.0	26.7					100
Total/ Overall	23.9	41.6	19.0	12.7	0.7	0.7	1.4	100

Source: NESS Census Household Survey 2013

3.3.2 Economic and Livelihood Characteristics

Occupation and earning

Subsistence farming is the main occupation of the PAFs, occupying 42 % of the population in this sector followed by wage earning (11.5%), foreign employment (5%) and trade (5%). Almost one third of economically active age population is students (30.6%) and 5.3% is unable to work (Table 3.66).

Table 3-66: Occupational Status of Population (% of population older than 15 years)

	Agriculture	Trade	Service	Wage Earning	Student	Unable to Work	Foreign Employment	Total
By Caste/ Ethnicity								
Tamang	42.2	5.4	0.5	11.8	30.9	4.4	4.9	100.0
Dalit (Kami)	40.0				20.0	40.0		100.0
Total/ Overall	42.1	5.3	0.5	11.5	30.6	5.3	4.8	100.0

By Gender of Household Head								
Men Headed	40.5	6.0	0.5	11.9	31.9	4.3	4.9	100.0
Women Headed	54.2			8.3	20.8	12.5	4.2	100.0
Total/Overall	42.1	5.3	0.5	11.5	30.6	5.3	4.8	100.0

Source: NESS Census Household Survey 2013

Wages are obtained primarily from construction-related activities (Figure 3-14), such as mason (30%), carpenter (30%), construction works (20%), driving (10%) and bamboo basket making (10%).

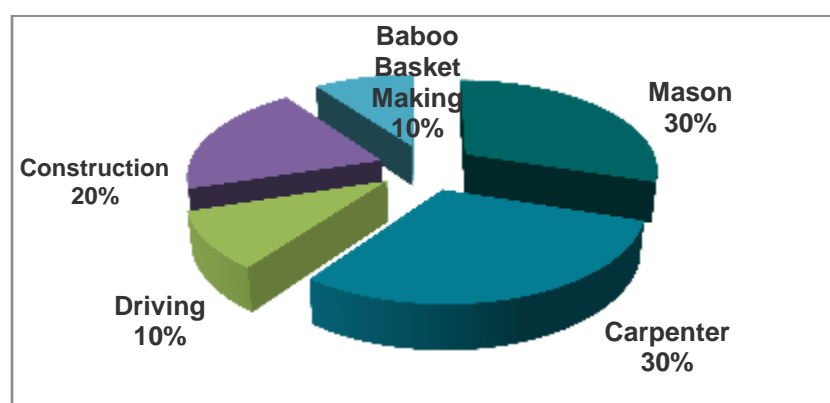


Figure 3-15: % of Families Reporting Different Skills

Source: NESS Census Household Survey 2013

Status of migrants workers

Slightly less than one third of the PAFs (29%) reported having migrant workers abroad who contribute with remittances to the family economy. The ratio of migrant workers is higher among men-headed households (31%) compared to women-headed households (20%).

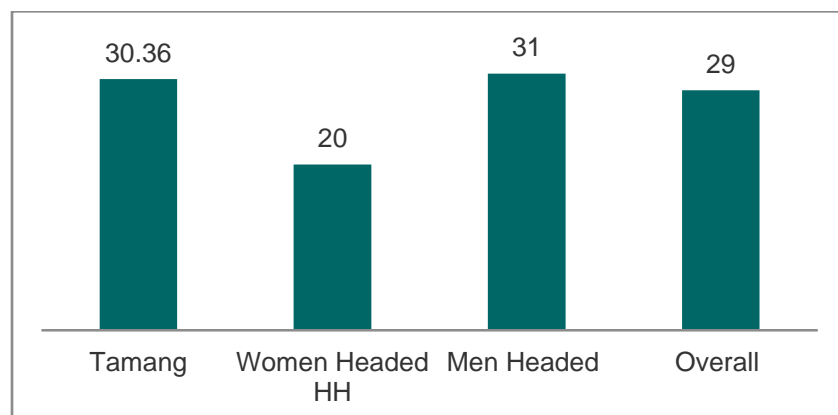


Figure 3-16: % of HHs Reporting Migrant Workers in the Family

Source: NESS Census Household Survey 2013

In terms of the country destinations of migrant workers, the majority (67%) are reported to be going Malaysia, followed by Saudi Arabia (25%). A fewer number of the migrants reported travelling within Nepal for work purposes (Figure 3-16). The average monthly income of a migrant worker is estimated to be Rs 5,758.

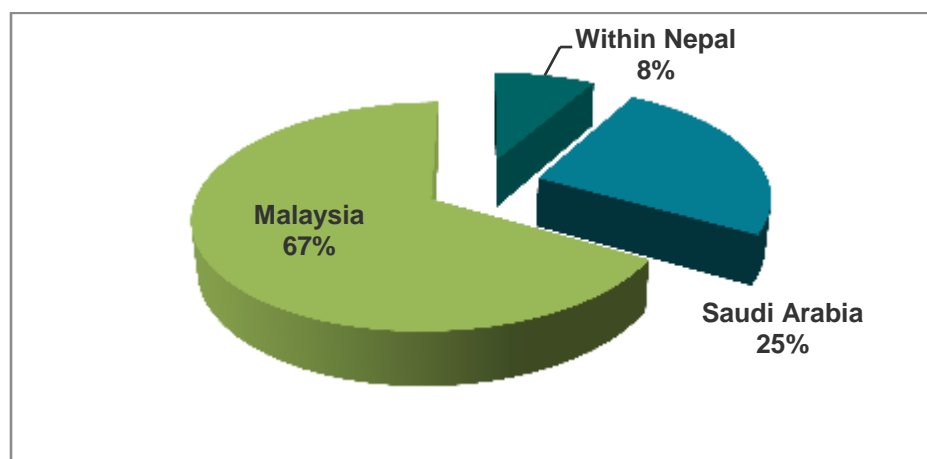


Figure 3-17: Destination of the Migrants for Remittance Income

Source: NESS Census Household Survey 2013

Land use, agricultural production and food sufficiency

In terms of land types, the majority of households (97%) own *Bari* type of land (un-irrigated upland) while only 18% household own *khet* land (irrigated lowland). A significant number of households (12%) also own *Kharbari* or marginal lands (Table 3-67)

Table 3-67: Land ownership per land type

Categories	Khet		Bari		Kharbari		At Least One Type	
	No.	%	No.	%	No.	%	No.	%
By Caste/ Ethnicity								
Tamang	6	18.8	31	96.9	4	12.5	32	97.0
Dalit (Kami)			1	100.0			1	100.0
Total/ Overall	6	18.2	32	97.0	4	12.1	33	97.1
By Gender of Household Head								
Male Headed	5	17.9	27	96.4	3	10.7	28	96.6
Female Headed	1	20.0	5	100.0	1	20.0	5	100.0
Total/ Overall	6	18.2	32	97.0	4	12.1	33	97.1

Source: NESS Census Household Survey 2013

The average size of land holdings per household (considering all land types: *khet*, *bari* and *kharbari*) is 0.91 ha. This average size is slightly higher in the case of the Tamangs (0.92 ha) and lower among Dalit (0.68 ha). Similarly, women-headed households have the greater size of land holding (1.07 ha) compared to men-headed families (0.88 ha). The

practice of renting-in and renting-out land among the sample households is very limited (Table 3-68).

Table 3-68: Average size of land holding per land type

By Caste/ Ethnicity	Khet	Bari	Kharbari	Total
Tamang	0.07	0.80	0.046	0.92
Dalit (kami)		0.68		0.68
Total/ Overall	0.07	0.80	0.045	0.91
By Gender of Household Head				
Male Headed	0.05	0.78	0.044	0.88
Female Headed	0.15	0.87	0.053	1.07
Total/ Overall	0.07	0.80	0.045	0.91

Source: NESS Census Household Survey 2013

Only 12% of the land area held by the surveyed families has perennial irrigation facilities through traditional irrigation system (*kulo*). The remaining area depends on seasonal rain. 97% of the surveyed households are growing some type of crop. Paddy and maize are the main crops. Vegetables and potatoes are also grown as cash crops.

Table 3-69: Types of crops grown by PAFs households

Categories	Paddy		Wheat		Maize		Millet		Potato		Oil Crops		Vegetables		At Least One Crop	
By Caste/ Ethnicity	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Tamang	32	100	2	6	31	96.9	1	3.1	21	66	8	25	10	31.3	32	97
Dalit (Kami)	1	100			1	100							1	100	1	100
Total/ Overall	33	100	2	6	32	97	1	3.0	21	64	8	24	11	33.3	33	97.1
By Gender of Household Head																
Male Headed	28	100	2	7	28	100			20	71	6	21	10	35.7	28	96.6
Female Headed	5	100			4	80.0	1	20	1	20	2	40	1	20.0	5	100
Total/ Overall	33	100	2	6	32	97.0	1	3.0	21	64	8	24	11	33.3	33	97.1

Source: NESS Census Household Survey 2013

47% of total agricultural area (see Table 3-70) used by the surveyed families is under paddy. The average size of the paddy field per household is 0.73 ha. Potato is the next crop in terms of area cultivated (3%), followed by oil crops (2.8%), wheat and vegetables (2.4% each), and millet (1.4%).

Table 3-70: Average land area under different crops

Categories	Paddy		Wheat		Maize		Millet		Potato		Oil Crops		Vegetables	
Caste/ Ethnicity	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
Tamang	0.730	46.9	0.040	2.5	0.630	40.7	0.020	1.4	0.050	3.2	0.040	2.9	0.040	2.4
Kami B.K	0.650	50.0			0.630	48.5							0.010	0.8
Total/ Overall	0.730	47.0	0.040	2.4	0.630	40.9	0.020	1.4	0.050	3.1	0.040	2.8	0.040	2.4
Male Headed	0.720	46.7	0.040	2.8	0.640	41.5			0.050	3.1	0.050	3.1	0.040	2.7
Female Headed	0.790	48.5			0.610	37.6	0.150	9.1	0.050	3.2	0.020	1.0	0.010	0.6
Total/ Overall	0.730	47.0	0.040	2.4	0.630	40.9	0.020	1.4	0.050	3.1	0.040	2.8	0.040	2.4

Source: NESS Census Household Survey 2013

The average yield for different crops grown by the surveyed families are estimated and shown in Figure 3-17. Cereals showed yields above 1 ton/ha, potatoes above 4 ton/ha, oil crops /ha and vegetables close to 2 ton/ha.

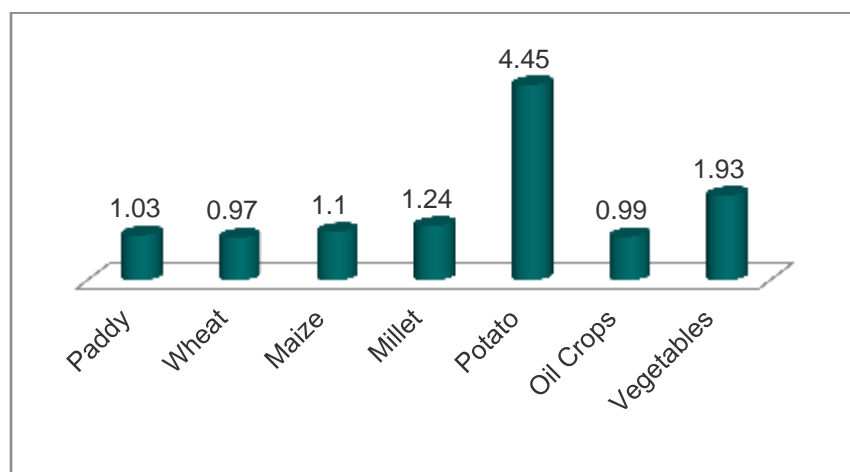


Figure 3-18: Average Yield (MT/Ha) Under Different Crops

Source: NESS Census Household Survey 2013

On average, households produce crops for an aggregate economic value (Table 3-71) of Rs 40,215/annum. The maximum value is reported from paddy (Rs 17,552/HH) followed by maize (Rs 14,871/HH), wheat (Rs 7,411/HH), potato (Rs 3,345/HH), oil crops (Rs 2,225/HH) and vegetables (Rs 1,143/HH) (Table 3.73).

Table 3-71: Average Production Value of Crops Grown (Rs/HH) and Average Price of Crops

Categories	Paddy	Wheat	Maize	Millet	Potato	Oil Crops	Vegetables	Total
Average Production Value (Rs/HH)	17,552	660	14,871	420	3,345	2,225	1,143	40,215
Average Price(Rs/Kg)	23.4	17.0	21.5	17.0	15.0	56.0	14.8	

Source: NESS Census Household Survey 2013

More than a quarter of the sampled households (32.2%) reported selling at least one type of crop. Potato is the most commonly traded crop (84%) followed by vegetables (30%), paddy (28%) and maize (21%).

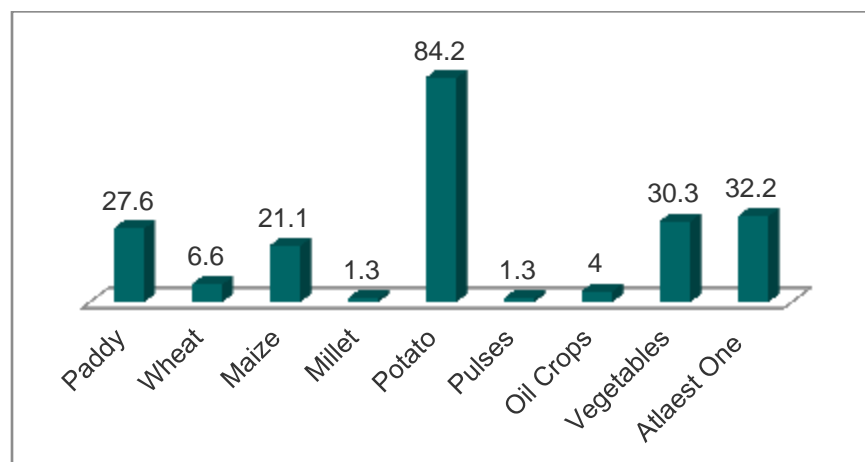


Figure 3-19: % of HHs Reporting Sale of Crops

Source: NESS Household Survey 2013

Table 3-72 shows the number of households reporting the sale of different crops.

Table 3-72: Number of families reporting the sale of crops

Categories	Paddy	Wheat	Maize	Potato	Oil Crops	At Least One Crop
By Caste/Ethnicity						
Tamang	10	1	8	4	2	12
Total/ Overall	10	1	8	4	2	12
By Gender of Household Head						
Men Headed	9	1	7	3	2	11
Women Headed	1		1	1		1
Total/ Overall	10	1	8	4	2	12

Source: NESS Household Survey 2013

The average volume of traded crops is estimated to be 233 kg per household. The average annual earning of a household from the sale of crops is estimated to be Rs 4,970 (Table 3-73).

Table 3-73: Average volume of crop sale and earning

Categories	Paddy	Wheat	Maize	Potato	Oil Crops	Total
Average Volume of Sale/Kg/HH	109	12	91	19	2	233
Average Earning from Crop Sale (Rs/HH)	2376	210	1967	287	132	4973

Source: NESS Household Survey 2013

The majority of the surveyed households (85%) have reported food insufficiency for some period of time during the year. Approximately a third (32%) of the surveyed households reported food sufficiency for more than 9 months of the year, another third for 6-9 months, and the remaining third would have food sufficiency for 3 to 6 months (Figure 3-19). Only 3.6% of the households reported food sufficiency for up to 3 months.

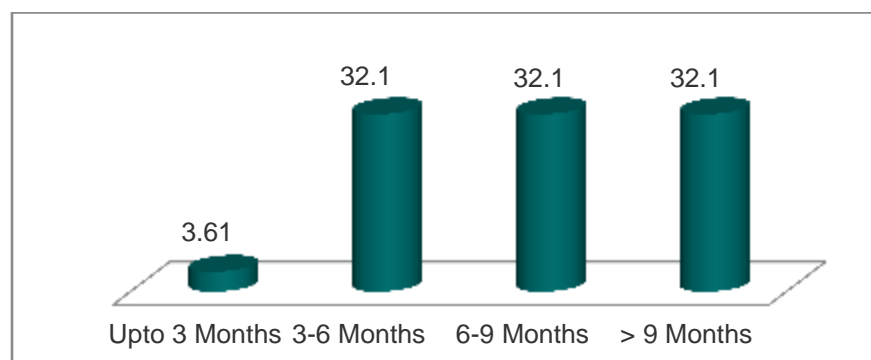


Figure 3-20: Number of Households Reporting Food sufficiency Period from Own Production

Source: NESS Census Household Survey 2013

The PAFs, predominantly Tamangs, are adopting different coping strategies to meet their food deficit. The most common coping strategies are working on a daily wages basis (72%) and foreign employment (28.1%). A significant number of people also meet their deficiency through business (14%) and borrowing money (10%). A fewer number of households also reported other coping strategies such as sale of animals, services and other (3.5% each) (Table 3.75).

Table 3-74: Coping strategies to meet food insufficiency

Categories	Loan		Daily Wage		Business		Sale of Livestock		Service		Foreign Employment		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Men Headed	1	4.2	18	75	4	16.7	1	4.2	1	4.2	6	25	1	4.2	24	100
Women Headed	2	40	3	60							2	40			5	100
Total/ Overall	3	10	21	72.4	4	13.8	1	3.5	1	3.5	8	27.6	1	3.5	29	100

Source: NESS Census Household Survey 2013

About 41% of the Tamang families are borrowing loans for different purposes. The number of borrowers is significantly large among the women-headed households (80%) compared to men-headed households (34%).

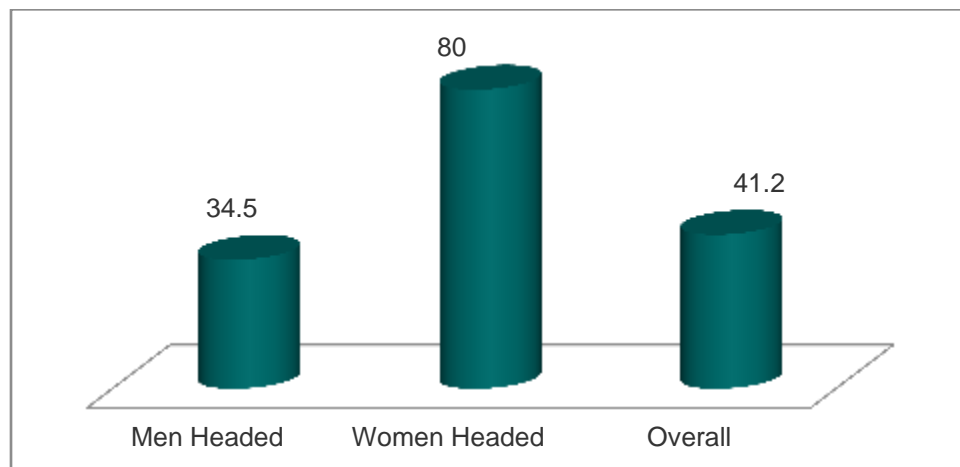


Figure 3-21: Percentage of households borrowing loans

Source: NESS Census Household Survey 2013

Still a majority of the PAFs borrow loan from informal sources such as relatives/friends (72%) and traditional money lenders (7%). Only 14% of the households are borrowing from institutional sources (Figure 3-21).

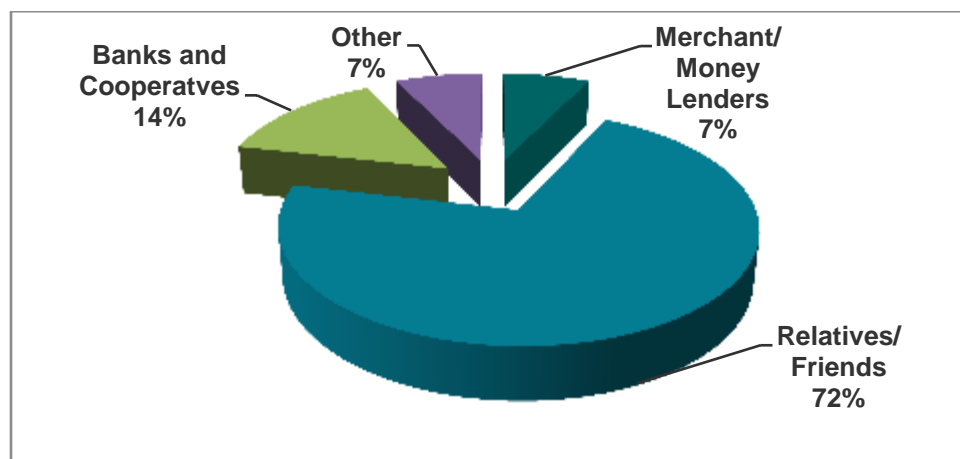


Figure 3-22: Source of Credit

Source: NESS Census Household Survey 2013

Usually, households borrow loans for more than one purpose. The common purposes of borrowing for most of the households are: education (28.6%), followed by business, foreign employment and other (14% each). An equal percentage of borrowing is also reported for land purchase, house construction/repair, medicine, and food grain purpose (7% each).

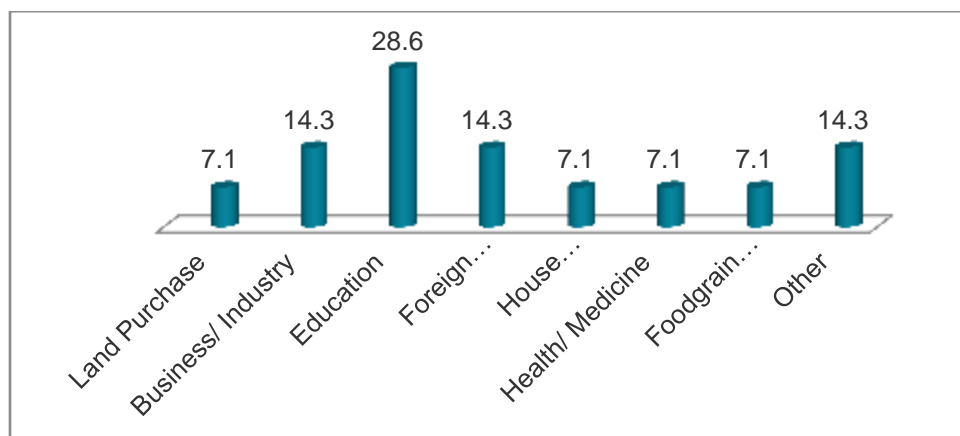


Figure 3-23: Purpose of borrowing

Source: NESS Census Household Survey 2013

The average amount of loan borrowed by a household is Rs 73,618. The average loan borrowed by women-headed households is extremely high (Rs 281,600/HH) compared to men-headed household (Rs 37,759/HH). The rate of interest varies between 12% and 24% annually for institutional sources to 24- 36% for non-institutional sources.

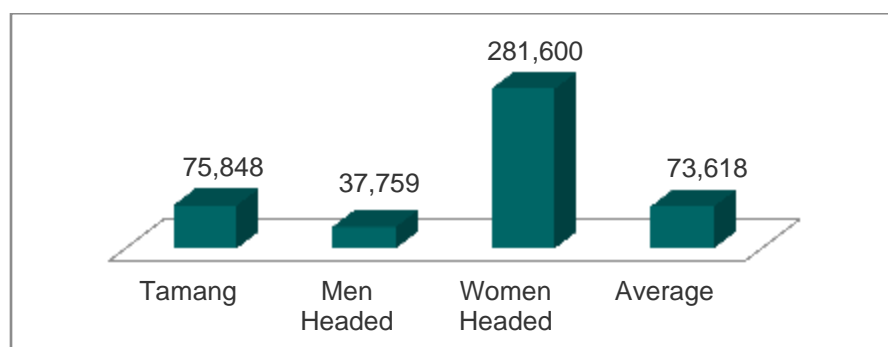


Figure 3-24: Average Amount of Loan Borrowed (Rs/HH)

Source: NESS Census Household Survey 2013

Livestock rearing

A large number of surveyed households (76%) reported raising at least one type of livestock and keeping it in separate shed (96%). 81% of the men-headed households and 56% of the women-headed households are rearing livestock. The most popular animals are buffalos (reared by 77% of the households), followed by cattle (54%) and goats (46%). Almost half of the sampled households (46%) are also keeping poultry (Figure 3-24).

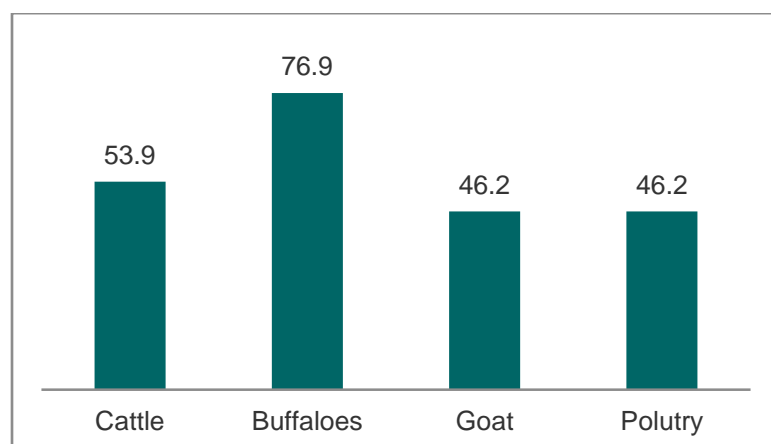


Figure 3-25: Types of Livestock Kept (% of HHs)

Source: NESS Census Household Survey 2013

The average number of animals per household is reported to be 0.53 for cattle, 0.65 for buffalo, 3.03 for goat and 1.53 for poultry (Table 3-75).

Table 3-75: Average number of animals per household

Categories	Cattle	Buffalo	Goat	Poultry
By Caste/ Ethnicity				
Tamang	0.48	0.57	2.82	0.97
Dalit (Kami)	2.00	3.00	10.00	20.00
Total/ Overall	0.53	0.65	3.03	1.53
By Gender of Household Head				
Men Headed	0.62	0.69	3.17	1.79
Women Headed		0.40	2.20	
Total/ Overall	0.53	0.65	3.03	1.53

Source: NESS Census Household Survey 2013

More than one third of the PAFs (35%) obtain some income from their livestock and sale of derived products. Goat is the main source of earning as 75% of the families reported income from the sale of goats. The average annual earnings from the livestock are estimated to be Rs 7,000 per household.

Fruit Trees

About 29% of the PAFs also own fruit trees. The average number of fruit trees grown is reported to be 9.0.

Vegetable Growing

More than half of the PAF (53%) are growing vegetable crops in an average area of 0.13 ha. The production is mostly for self-consumption (Table 3-76).

Table 3-76: Households Growing Vegetables

Categories	HH Cultivating Vegetables		Average Area Under Vegetable (Ha/HH)	Average Production of Vegetables (Kg/HH)	Average Value of Production (Rs/HH)
	NO.	%	%	%	%
Tamang	17	51.5	0.0133	59.4	848
Dalit (Kami)	1	100.0	0.0132	100.0	
Total/ Overall	18	52.9	0.0133	60.6	824

Source: NESS Census Household Survey 2013

Annual income and expenditure pattern

Tamang families have more than one source of income. However, wage labor is the major source of income as reported by 64% of the families, followed by loan (34%), livestock (30%), remittance and food grain (27% each), and business (21%). These different sources of income (as percentage of respondents reporting the type of income) are shown in 3-25. The surveyed Dalit family reported livestock (including poultry) to be their main source of income.

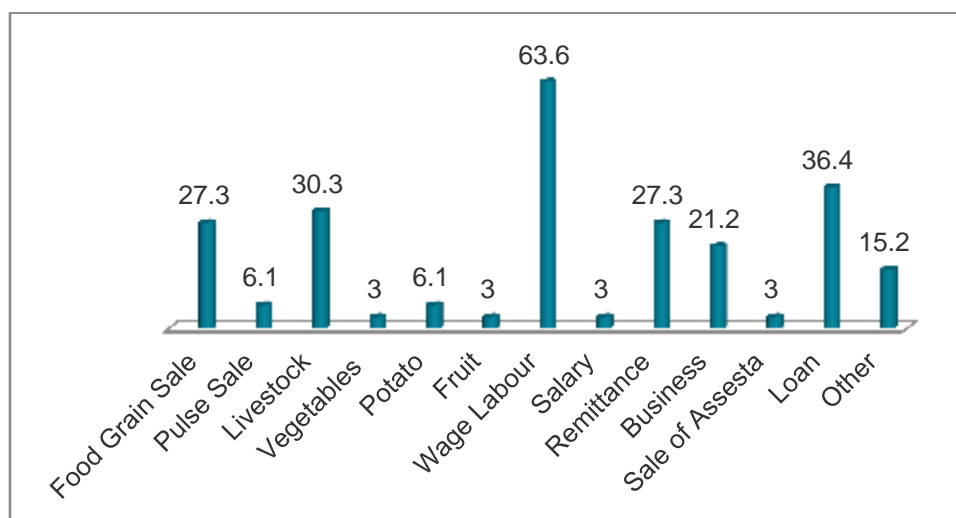


Figure 3-26: % of Tamang Families Reporting Source of Income

Source: NESS Census Household Survey 2013

The average annual income of a sample household is calculated to be NRs 236,432. The survey indicates that average income of the women-headed households is more than double (Rs 437,280/HH) that of the men-headed households (Rs 201,803/HH). This is due to the huge amount of loan borrowed by women-headed household.

Table 3-77: Average annual income (and sources of income) of households from last year

Categories	Food Grain Sale	Pulse Sale	Livestock	Vegetable Sale	Potato	Fruit	Wage Labour	Salary	Remittance	Business	Sale of Assets	Loan	Other	Total
By Caste/ Ethnicity														
Tamang	4,627	533	6,515	152	388	230	48,121	3,636	42,273	28,030	303	101,606	5,303	241,718
Dalit (Kami)	-	-	25,000	-	-	-	-	-	-	-	-	-	8,000	62,000
Total/ Overall	4,491	518	7,059	147	376	224	46,706	3,529	41,029	27,206	294	98,618	5,382	236,432
By Gender of Household Head														
Male Headed	5,017	607	7,931	172	110	-	30,207	4,138	45,862	31,897	-	73,966	897	201,803
Female Headed	1,440	-	2,000	-	1,920	1,520	142,400	-	13,000	-	2,000	241,600	31,400	437,280
Total/ Overall	4,491	518	7,059	147	376	224	46,706	3,529	41,029	27,206	294	98,618	5,382	236,432
Share %	1.9	0.2	3.0	0.1	0.2	0.1	19.8	1.5	17.4	11.5	0.1	41.7	2.3	100.0

Source: NESS Census Household Survey 2013

The average annual house expenditure (Table 3-78) of the PAFs families is estimated to be NRs 139,611. The major share of expenditure goes to health/medicine (16.5%), investment (14%), food (12%), payment of interest (10%), education (9%) and clothing (9%). The average annual expenditure of Tamang is estimated to be Rs 142,328/HH compared to Rs 49,960/HH for the Dalit family. Similarly, women-headed household has an average annual expenditure of NRs 266,612 compared to Rs 117,714 for men-headed household.

Table 3-78: Average Annual Expenditure (Rs) per Household, itemized

Categories	Food/Cash Crops	Veg/Fruits	Milk/Tea	Meat/Egg	Ghee, Oil, Salt, Spices	Beverage	Clothing	Kerosene/ Electricity/ Firewood	Agri/Livestock	Education	Health/ Medicine	Transportation	Tax and Interest	Religious/ Social	Investment (Foreign Employment, Asset Purchase)	Other	Total
By Caste/ Ethnicity																	
Tamang	16708	2221	1848	9182	5530	7339	13015	1457	2333	13130	23758	4182	13830	7036	19697	1061	142328
Dalit (Kami)	0	0	0	17000	5000	4000	6000	960	2000	12000	0	0	0	3000	0	0	49960
Total/ Overall	16216	2156	1794	9412	5515	7241	12809	1443	2324	13097	23059	4059	13423	6918	19118	1029	139611
By Gender of Household Head																	
Men Headed	16333	2424	1828	10138	5638	7379	13500	1606	2397	14252	9259	4138	15679	7283	5172	690	117714
Women Headed	15540	600	1600	5200	4800	6440	8800	496	1900	6400	103100	3600	336	4800	10000 0	3000	266612
Total/ Overall	16216	2156	1794	9412	5515	7241	12809	1443	2324	13097	23059	4059	13423	6918	19118	1029	139611
Share%	11.62	1.54	1.29	6.74	3.95	5.19	9.17	1.03	1.66	9.38	16.52	2.91	9.61	4.96	13.69	0.74	100.00

Source: NESS Census Household Survey 2013

Among the different types of assets hold by the surveyed PAFs, the most common assets is the mobile phone, owned by 85% of the families, followed by pressure cooker/rice cooker (62%), and furniture (55%), TV (29%) and radio cassette player (21%). The families have less productive and farming related assets (Table 3-79).

Table 3-79: Households holding different assets

Categories	Owning Asset		Average No. Owned	Average Value (Rs)
	No.	%		
TV	10	29.4	1.1	18,800
DVD/VCR/DVD	4	11.8	1.0	3,625
Radio/ Cassette	7	20.6	1.1	2,057
Telephone (Landline/ Mobile)	29	85.3	1.9	5,783
Private Tap	1	2.9	1.0	2,000
Furniture	19	55.9	3.7	14,947
Motor Cycle	1	2.9	1.0	250,000
Iron	1	2.9	2.0	2,000
Rice Cooker/ Pressure Cooker	21	61.8	2.3	2,857

Source: NESS Census Household Survey 2013

3.3.3 Access to Basic Services

Health services

More than half of the families (53%), reported illness of at least one family member during last year. Hospital is reported to be the most preferred health service facility by the majority of sick family members (89%). The remaining 11% patients reported use of private clinics to cure themselves (Figure 3-26).

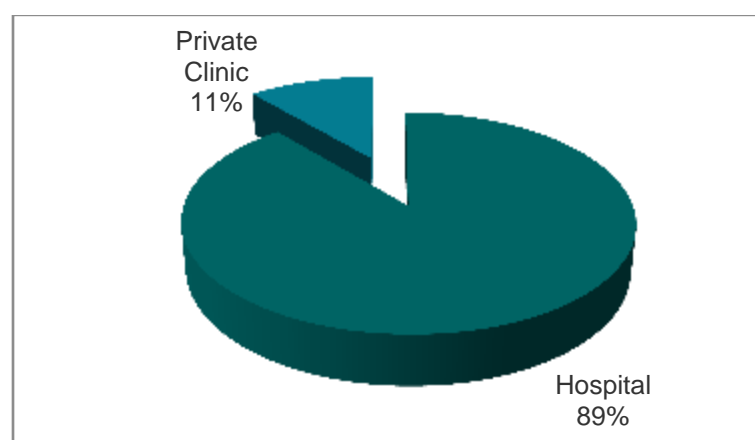


Figure 3-27: PAF families using different Health Services

Source: NESS Census Household Survey 2013

Electricity services

A majority of the surveyed PAFs (73%) are connected to the electricity network for lighting. However, the remaining 27% of households use other sources for lighting such as Diyallo (18%) and kerosene (9%).

Table 3-80: Households Reporting Lighting Sources

Categories	Kerosene		Electricity		Other (Diyalo)	
	No.	%	No.	%	No.	%
By Caste/ Ethnicity						
Tamang	3	9.1	24	72.7	6	18.2
Dalit (Kami)			1	100.0		
Total/ Overall	3	8.8	25	73.5	6	17.7
By Gender of Household Head						
Male Headed	1	3.5	23	79.3	5	17.2
Female Headed	2	40.0	2	40.0	1	20.0
Total/ Overall	3	8.8	25	73.5	6	17.7

Source: NESS Census Household Survey 2013

Access to sanitary facilities

Approximately half of the surveyed households (56%) do not have access to a toilet facility. In the case of women-headed households, only 20% have toilet facilities, compared to 48% of men headed households (Table 3-81). The majority of the families having toilet (87%) utilize a temporary type.

Table 3-81: Number and Percentage of Households Having Toilet Facility

Description	Yes		No		Total	
	No.	%	No.	%	No.	%
Men Headed	14	48.3	15	51.7	29	100.0
Women Headed	1	20.0	4	80.0	5	100.0
Total/ Overall	15	44.1	19	55.9	34	100.0

Source: NESS Census Household Survey 2013

Access to Drinking Water Sources

The majority of surveyed PAF households (91%) have access to tap water at the community level, while 9% rely on spring sources for drinking (Figure 3.27).

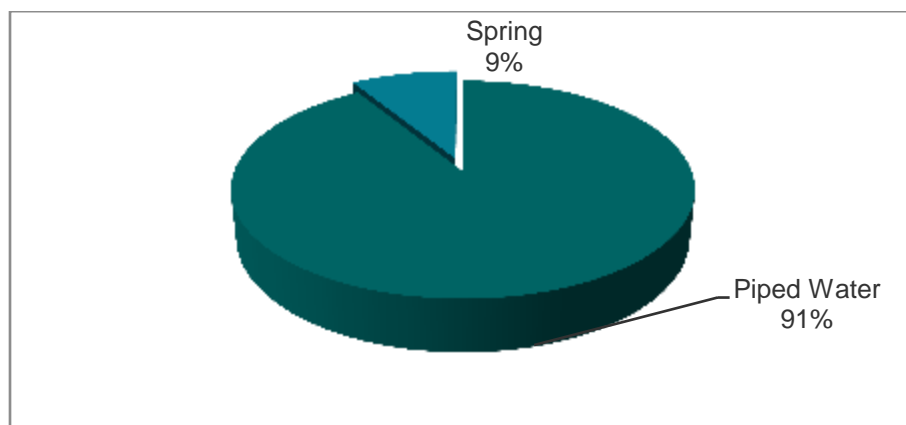


Figure 3-28: % of HHS Reporting drinking Water Sources

Source: NESS Census Household Survey 2013

Access to means of communication

Mobile phones are the most popular means of communication and is used by 88% of the surveyed PAFs. Other means of communication used by the studied families are the TV (26% of the families) and the radio (26%). A fewer number of the families (6%) reported obtaining information through integrating concerned groups/networks (Figure 3-28).

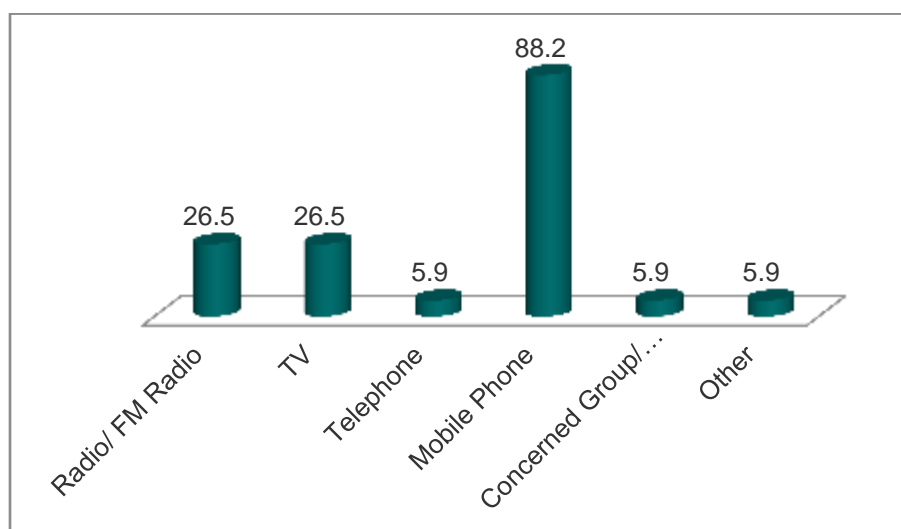


Figure 3-29: Means of communication

Source: NESS Census Household Survey 2013

Participation in social/community organizations

More than a quarter of the surveyed households (27%) claim that their family members participate in at least one social or community organization or activities. However, this participation would be limited to men.

3.3.4 Use of Natural Resources

Forest resources

As evident from Table 3-82, the most common use of forests is extraction of timber (93%), followed by firewood (90%), forage for livestock (90%), and products (bamboo, broom grass and herbs) grown through *khar* cultivation⁷. Households collect these forest products primarily from government forests.

Table 3-82: Use of forest resources

Categories	Timber		Firewood		Forage		KHAR		At Least One	
By Caste/ Ethnicity	No.	%	No.	%	No.	%	No.	%	No.	%
Tamang	27	93.1	26	89.7	26	89.7	1	3.5	29	87.9
Dalit (Kami)	1	100.0	1	100.0	1	100.0			1	100.0
Total/ Overall	28	93.3	27	90.0	27	90.0	1	3.3	30	88.2
By Gender of Household Head										
Male Headed	23	92.0	24	96.0	24	96.0	1	4.0	25	86.2
Female Headed	5	100.0	3	60.0	3	60.0			5	100.0
Total/ Overall	28	93.3	27	90.0	27	90.0	1	3.3	30	88.2

Source: NESS Census Household Survey 2013

Sources of Energy

All the surveyed PAFs reported dependency on firewood for cooking. A fewer number (3%) uses LP gas (Figure 3.29).

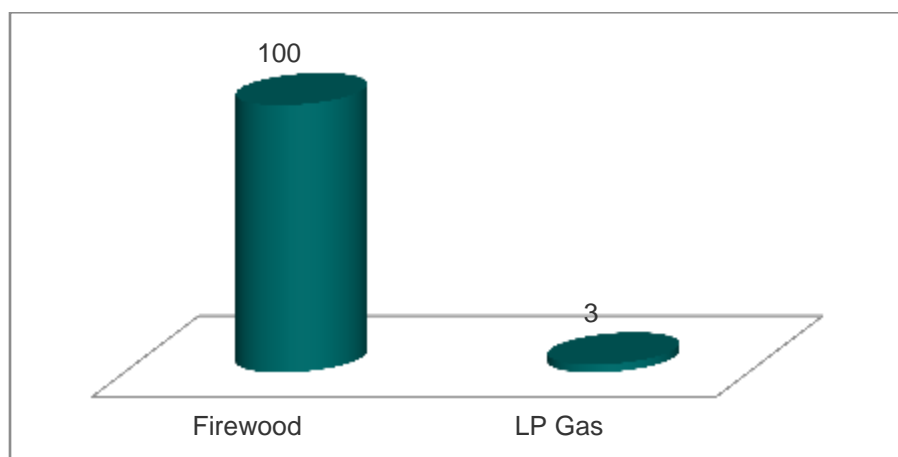


Figure 3-30: % of HHs Reporting Cooking Energy Source

Source: NESS Census Household Survey 2013

⁷ There is no agricultural land within the forest, but some community forest users have bamboo, broom grass and some herbs (*khar*) cultivation which they can harvest themselves

The average consumption per household of energy for cooking is estimated to be 2,769 kg of firewood or 0.36 LP Gas cylinders. The average consumption of firewood is highest among the Dalit community (4,200 kg/year) due to their occupation that demands high volume of firewood/charcoal (Table 3-83). The use of improved stove is limited to 6% of the Tamang families.

Table 3-83: Average Annual Consumption of Energy

Categories	Firewood (Kg)	LP Gas (Cylinder)
By Caste/ Ethnicity		
Tamang	2760	0.36
Dalit (Kami)	4200	
Total/ Overall	2796	0.36
By Gender of Household Head		
Men Headed	2796	0.48
Women Headed	2820	
Total/ Overall	2796	0.36

Source: NESS Census Household Survey 2013

Incidence of Wild Animals

Almost 73% of the surveyed PAFs reported crop damage by wild animals (Figure 3.30) in their area, with the highest incidence of damage being done by monkeys (88%), followed by Dumsi/porcupine (68%), boar (16%) and bears (16%).

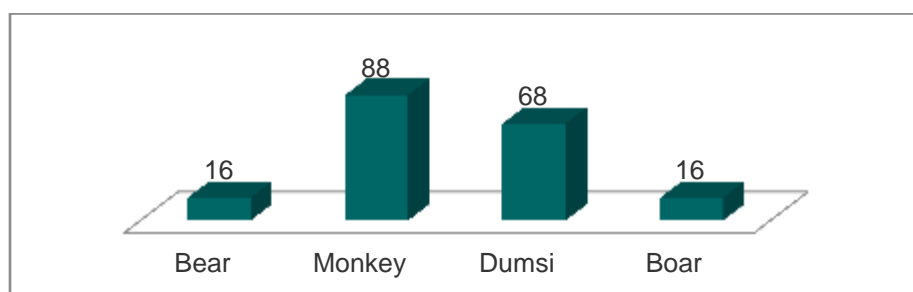


Figure 3-31: Households Reporting Incidence of Wild Animals

Source: NESS Census Household Survey 2013

3.3.5 The Vulnerable Community

As previously discussed, 40 households, all from Haku VDC, have been identified as of June 2014 as directly affected by the Project (i.e. PAF: project affected families) through economic and/or physical displacement.

Of the 34 PAF families surveyed for the complementary social baseline data, 33 (97%) are from the Tamang community (marginalized Adivasi/Janjati) and one household (2.9%) belonged to Dalit (Kami) community. All these households fall under vulnerable group due to their socio-economic status.

4 The Socioeconomic Impacts of the Project

4.1 Positive Impacts

4.1.1 Year-round road access

Most people in Haku VDC are positive towards the project. People are excited that they will have year round motorable road in their VDC. Currently, people from Wards 8 and 9 have to walk to Mailungbesi for the nearest motor transport node, while people in the rest of the VDC have to walk to Dhunche (district headquarter) for access to motor transport.

4.1.2 Creation of job opportunities

People consider that the Project will create job opportunities for locals in the form of unskilled or semi-skilled construction jobs.

4.1.3 General development and learning opportunities

Some people think that the implementation of project is good. They do not point out to any specific tangible benefit to the society due to the implementation of the project. They however think that having a large scale project in their own village is also a matter of dignity. Some people think that Korean people coming and working in their village is a matter of pride and the local people are also optimistic that the local people will certainly learn from the Korean people about the good behavior; at least people carom board playing will learn to be hardworking like Korean.

4.2 Negative Impacts

4.2.1 Direct Impacts

Baseline data indicates that the Project will have direct impacts on land, property, forest resources and livelihood-related activities of the local communities. About 40 families from Haku VDC who are mostly from Tamang community (marginalized Adivasi/Janjati) are expected to have direct impact (see Annexes 1 and 2 for a list of the private-owned and *Ghuti* land requirements). 15% of these directly affected families are headed by women. All these households fall under vulnerable group considering their socio-economic status and ethnicity (indigenous Adivasi/Janajati groups in the case of Tamangs). Two main types of impacts are envisaged on the community due to project activities as described in the following sections.

Impact on land and property

Almost 100 hectares of different categories of land are required for the construction of the different components (e.g. access road, muck disposal sites, temporary facilities, etc.) the

Project. As of June 2014, the land requirements of the Project, under different provisions and for different time periods, were as shown in Table 4-1.

Table 4-1: Summary of land requirements of the UT-1 Hdropower Project

S.N	Land Categories	Area of land (m ²)
1	Government Land (Total)	792,700.00
	a) 6 years Leasing	330,500.00
	b) 11 years Leasing	251,000.00
	c) 35 Year Leasing	171,100.00
	d) Land purchase and return to District Forest Office	14,000.00
	e) Land of Langtang National Park (Lease)	26,100.00
	f) Land purchase and return to LNP	(26,100.00)
2	Ghuthi Land (Permanent Purchases)	156,911.39
3	Private Land (Total)	39,081.50
	In hactare	98.87
4	Private Land (5 year leasing)	10,173.75
	Grand Total: (1+2+3+4)	998,866.64
	In hectares	99.89

Besides the 3.9 ha of land acquired from private owners, 11 houses were also purchased from the Tamang families in this PAF (Table 4.2).

Table 4-2: Individual houses to be replaced

S.N.	House Owner Name	House Types
1	Mal Bir Tamang	New House
2	Somar Tamang	New House
3	Phairam Tamang	New House
4	Bir Bahadur Tamang	New House
5	Sita Maya Tamang	New House
6	Pancha Tamang	New House
7	Dirgha Bahadur Tamang	New House
8	Karsang Tamang	New House
9	Pancha Tamang	Old House
10	Dirgha Bahadur Tamang	Old House
11	Sita Maya Tamang	Old House

In addition to these 11 houses from private owners, the Project proponent has also acquired 4 houses in *Guthi* land as part of the purchase of 15.7 ha (see Table 4-1) of this type of land. These houses belong to the tenants that work in Guthi land; three of the four houses belong to Dalit (lowest caste; untouchable) families and the other one belongs to a Tamang household

Additionally, NESS was notified that 14,225 square meter of land used by the Mailung Khola Hydropower Project (HPCL) will have to be leased to the Project for its usages (Table 4.3).

Table 4-3: Land to be leased from Mailung Khola HPCL

S. N	Land Owner's /Tenant's Name	Sheet no	VDC	Ward No.	Plot No.	Affected Area		Land Use/Type
						M ²	Ropani	
1	Mailung HPCL	096_1376	Haku	9	131	520.61	1.02	Maize
2	Mailung HPCL	096_1375	Haku	9	3	5913.49	11.63	Maize
3	Mailung HPCL	096_1375	Haku	9	8	4613.95	9.07	Maize
4	Mailung HPCL	096_1376	Haku	9	137	3020.33	5.94	Maize
5	Mailung HPCL	096_1376	Haku	9	138	89.42	0.18	Maize
6	Mailung HPCL	096_1376	Haku	9	139	67.56	0.13	Maize
	Total					14,225.36	27.96	

Impact on livelihood opportunities

Impact on farming activities and agriculture and livestock related income: Farming is the main occupation of the project affected families, occupying 42 % of the population in this sector. On average, each household is producing crops equivalent to Rs 40,215/annum. Altogether 21 households owning private land and 19 tenants using Guthi land for crop production will lose their agricultural land permanently (Table 4.4 and more details in Annex 1 and 2).

Table 4-4: Private and *Guthi* agricultural land required by the Project

SN	Land Type	Number of HHs owning/cultivating the land	Area (m ²)	Remarks
1	Private Land	21	39,632	Permanently required except two HHs in contract
2	Guthi Land	19	14,225.36	The plots are registered in the name of 26 persons with repetition of name

Besides the above land requirements, 54 plots of government land occupying 766,652 m², distributed in six community forests, will also be purchased by the Project to build different structures and access (see Annex 3), including 33.05 hectares that will be occupied by the access road. Table 4-5 presents the distribution of this 76.7 ha of forest land in six community forests.

Table 4-5: Government land requirements and community forests

SN	Name of community forest	Area (ha)	Number of trees/seedlings to cut down
1	Daksin Kaliika Haku-8,9	17.25	330
2	Dharnasila Kanya Haku-9	24.57	736
3	Bratar Haku-7	0.99	105
4	Lumbudanda Haku-7	9.85	138
5	Labingpakha Tutudanda Haku-3	9.49	54

SN	Name of community forest	Area (ha)	Number of trees/seedlings to cut down
6	Labingpakha Haku-3	14.51	254
Total		76.66	1617 trees/2239 seedlings (total 3856)

Forest land is vital for the affected households as it provides fuel (firewood), fodder, timber, herbal and medicinal plants, and other resources. The number of households that would be potentially affected by the loss forest resources or access to them due to this area requirement of 78.7 ha of forest for the Project has not been identified.

Impact on living standard: A majority of the PAF (73%) have connected with electricity for lighting, 44% with toilet facilities and 91% with tap water. 93% of the PAF collect timber, 90% collect firewood, 90% collect forage for livestock from the nearest forest area. As of June 2014, the relocation of three Dalit communities had been confirmed. The resettled families should receive adequate compensation so as to improve their living conditions.

The mitigation of the socioeconomic impacts caused by land acquisition and resettlement should be articulated in a Land Acquisition and Livelihood Restoration Management Plan. The proposed terms of reference for this plan are presented in Section 5.

4.2.2 Indirect Impacts

Pollution and hazards

Project construction activities will generate noise, increased traffic and erosion/sedimentation, and the influx of workers into the area would add pressure to natural resources (e.g. increase amount of solid waste and wastewater) and social services (e.g. increase demand for health services) and utilities. The impacts on local communities would be indirect and generally limited to the construction phase. Specifications to avoid this type impacts have added to the Construction Environmental and Social Management Plan (Appendix F of the Supplemental ESIA, ESSA July 2014).

Landslides and slope stability

The Project area is prone to landslides. There are currently a number of inactive landslides on the western slope of Trishuli (see Appendix B for a preliminary assessment of landslide risk in the Project area), including a significantly large area of instability around Hakebesi. Local communities are concerned that the construction of the Project will activate these landslides and trigger mass movements that could damage their properties and compromise their safety. Some inhabitants of the Tiru area (Ward no. 8, Haku VDC), which is about 300 meters above the construction area, also reported concerns about potential vibrations during the excavation of the tunnel.

5 Terms of Reference for a Land Acquisition and Livelihood Restoration Plan

5.1 Objectives

The Upper Trishuli Hydroelectric Project (UT-1) has recently completed a supplementary socioeconomic baseline study to generate data consistent with international lender requirements. During the supplementary baseline survey, key impacts on community physical assets and livelihood activities have also been identified. In order to ensure the Project's compliance with international standards, in particular with the IFC Performance Standard 5 on Land Acquisition and Involuntary Resettlement, a Land Acquisition and Livelihood Restoration Management Plan (LALRMP) is required. The LALRMP should integrate all the measures implemented to mitigate and/or compensate for the adverse impacts on displaced persons and host communities.

Specific objectives of the LALRMP include:

- Ensure that all affected persons or institutions are assisted to restore at least their pre-project income and livelihood sources.
- Identify the feasible livelihood related actions/interventions and services to be followed by the Project to uplift the livelihood opportunities of the project affected households.
- Recommend the implementation modality by identifying the ways to mainstream opportunities and services to be provided by project into local autonomous bodies (collaboration with local bodies).
- Identify the social/livelihood measures/specification to be followed by the Contractors and Supervisors during Project Construction Phase.
- Identify the training needs of different project actors (e.g. developer, contractor, supervisor and private companies) in the implementation of the LALRMP.
- Propose a compliance framework for Contractors, and a definition of major, moderate and minor non-compliance of the LALRMP.
- Propose a Monitoring and Evaluation Framework for the LALRMP.
- Proposes a grievance mechanism to enable communities to address social/livelihood related impacts, and to participate in the decision making process and the conflict resolution alternatives.
- Establish a schedule for implementation.

5.2 Scope of work / activities

The Consultant will identify and propose social/livelihood enhancement measures that are necessary to mitigate the social/livelihood impacts from the construction of the project and uplift the livelihood condition of the project affected families.

5.2.1 Activity 1: Scoping and Review

- Review of good practices in the social/livelihood restoration aspects that have been applied for other hydroelectric projects in Nepal (e.g Middle Marsyandi, Upper Jhimruk, Kabeli etc).
- Ensure land aquisition and compensation measures are compliant with national regulations (e.g. Land Acquisition Act 1977, as amended in 1992) and applicable international standards (i.e. IFC Performance Standard 5 on Land Acquisition and Involuntary Resettlement and the *Handbook on Preparing a Resettlement Action Plan*⁸).
- **Characterization of impacts:** It will be necessary to provide more detail on the impacts caused by the purchase of land by the Project, especially to determine the extent of the individual impacts on each affected household. A table listing each affected family/household/individual, the extent of the impact of land take (e.g., loss of house (physical displacement), amount loss of bari, amount loss of khet) and the percentage of this loss of land compared to each household's overall land holding will have to be documented to understand the severity of impact on each affected household. Potential impacts of tenants or sharecroppers under contract with landowners should also be identified, as well as those impacts on peoples and vulnerable groups whose livelihoods might be affected by the loss of access to community forests.
- Identification the key **target groups** of Project affected people based on type of impacts, their legal status, and the type compensation measure for which they are entitled (e.g. individuals affected by economic displacement, individuals affected by both economic and physical displacement, etc.). In this respect, the proponent will need to clearly identify the households that will be affected by the loss of community forest land or of access to it.
- Identify the final number of households that will be relocated as a result of the Project (**physical resettlement**), and the compensation and the resettlement assistance that has or will be provided. As of June 2014, only three cases of physical resettlement involving Dalit tenants in Githi land have been documented. However, another 11 houses have been acquired from private land owners (Tamang families).

⁸ IFC Handbook on Preparing a Resettlement Action Plan:

http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_handbook_rap_wci_1319577659424

- Create a **map** showing the individual affected households (PAFs), as well as the Project's land requirements, and the areas where the PAFs have relocated (i.e. new agricultural land and replacement houses).
- Confirm if the 10,173.75 m² of private land to be leased for a period of 5 years affect any household (i.e. occupation of agricultural land, existing constructions in this area).
- **Prioritize livelihood restoration/uplifting actions:** Many of environmental and social activities foreseen in the EIA could have a positive impact in contributing to restoring and uplifting the living standards of host communities. These measures should be identified and incorporated in an organized way into the LALRMP to maximize the positive impacts.

5.2.2 Activity 2: Stakeholder Consultation

For the preparation of the LALRMP the proponent will need to engage the PAFs as well as other relevant stakeholders at the local and district level. will need to take into account the consultation process, which has already started, with the relevant stakeholders at different levels:

- Project Affected Families (PAFs), including all target groups (both directly and indirectly affected);
- Communities in the Project's area of influence (Dhunche, Ramche and Haku VDCs);
- Vulnerable groups and individuals (e.g. women-headed households, families under the regional poverty line);
- Government institutions at the local or district level (e.g. VDCs, DDCs, District Forest Office, agricultural extension services, etc.);
- NGOs (women development, etc.);
- Other hydropower sponsors (for sharing of experiences and feedback).

All the stakeholder consultations, as well as the overall land acquisition and livelihood restoration process (e.g. negotiations with landowners, etc.) should be properly documented, including past negotiations and land acquisition settlements.

5.2.3 Activity 3: Preparation of Draft LALRMP

The Land Acquisition and Livelihood Restoration Management Plan (LALRMP) needs to clearly define: the procedures that the Proponent will follow and the actions that it will take to mitigate adverse effects, compensate losses, and provide development benefits to persons and communities affected by the Project.

Based on the particulars of the Project, and the scope and magnitude of the economic and physical resettlement requirements, the essential points that the LALRMP should address include the following:

1. **Identification of Projects impacts and affected population:** The LALRMP must clearly identify all PAFs, classify them into target groups as previously discussed, and assess the overall impact on their livelihoods.

2. **Compliance Framework:** The LALRMP compensation framework specifies all forms of asset ownership or use rights among the population affected by the project and the project's strategy for compensating them for the partial or complete loss of those assets.
3. **Resettlement assistance and restoration of livelihood activities:** In the case of economic displacement and impacts to livelihoods, the sponsor should assess the abilities of the affected households to use cash to restore their standard of living.
4. **Organizational responsibilities:** The LALRMP must identify and provide details on the roles and responsibilities of all organizations—public or private, governmental or nongovernmental—that will be responsible for resettlement activities.
5. **Grievances Redressal Mechanism:** The sponsor needs to ensure that affected households have access to information about the Project and opportunities to seek redress of grievances relating to land acquisition or resettlement process.
6. **Budget and Implementation Schedule:** The LALRMP budget must include a justification of all assumptions made in calculating compensation rates and other cost estimates and must take into account both physical and cost contingencies. This budget needs be linked with a detailed implementation schedule for all key resettlement and rehabilitation activities. This schedule should, in turn, be synchronized with the project's schedule.
7. **Monitoring and Evaluation Framework:** The proponent needs to monitor and report on the effectiveness of LALRMP implementation, including the physical progress of resettlement and rehabilitation activities, the disbursement of compensation, the effectiveness of public consultation and participation activities, and the sustainability of income restoration and development efforts among affected communities.

Annex 1: Details of private land permanently required for the Project

1. Private land		VDC Name	Ward No.	Previous plot no	Current lot No.	Affected Area (Ropani)				Area (m)2	Convert Ropani	Type of Land	Type of Requirement
#	Land Owners Name					Ropani	Aana	Paisa	Dam				
1	Jit Bahadur Tamang (Ash Bir Tamang)	Haku	9	149	149	3	7	3	2	1776.40	3.49	Maize	Contract
2	Antare Tamang	Haku	9	150	150	2	0	2	3	1039.20	2.04	Maize	Contract
	Sub Total:					5	7	5	5	2816	5.54		
3	Kam Tashi Tamang	Haku	9	106	106	2	14	2	1	1480.40	2.91	Paddy	Permanent
4	Bir Bahadur Tamang	Haku	9	107	107	3	13	1	1	1949.30	3.83	Paddy	Permanent
5	Kring Tamang	Haku	9	108	108	2	14	3	2	1490.30	2.93	Paddy	Permanent
6	Kale Tamang	Haku	9	109	109	3	13	1	1	1949.30	3.83	Paddy	Permanent
7	Kami Singh Tamang	Haku	9	111	111	1	13	1	0	929.90	1.83	Paddy	Permanent
8	Amrit Tamang	Haku	9	112	112	3	12	2	3	1961.20	3.79	Paddy	Permanent
9	Semsang Ghaleni	Haku	9	113	113	2	13	2	2	1959.20	2.85	Paddy	Permanent
10	Langde Ghale, Ladeu Ghale, Wande Ghale, Arjun Ghale,	Haku	9	114	114	3	3	3	2	1649.26	3.24	Paddy	Permanent
11	Talama Tamang	Haku	9	115	115	11	8	1	0	5857.85	11.52	Paddy	Permanent
12	Budhi Maya Tamangni	Haku	9	152	152	2	0	0	0	1017.40	2.00	Paddy	Permanent
13	Budhi Maya Tamangni	Haku	9	155	155	1	0	0	0	508.70	1.00	Paddy	Permanent
14	Kami Dorje, Nima Karma Tamang, Chhiring Tamang, Failama Tamang, Wang Lama Tamang	Haku	9	156	156	5	4	2	1	2696.40	5.29	Paddy	Permanent
15	Chhowan Tamang	Haku	9	117	171	5	0	0	0	2543.44	5.00	Paddy	Permanent
16	Bir Man Tamang	Haku	9	117	172	5	0	0	0	2543.44	5.00	Paddy	Permanent
17	Nima Tamang	Haku	9	117	173	4	0	2	3	2056.61	4.04	Paddy	Permanent
18	Sajan Tamang	Haku	9	118	167	3	0	0	0	1526.06	3.00	Paddy	Permanent
19	Ajaya Tamang	Haku	9	118	168	3	0	0	0	1526.06	3.00	Paddy	Permanent
20	Chandra Man Tamang	Haku	9	118	169	3	0	0	0	1526.06	3.00	Paddy	Permanent
21	Nima Dolmo Tamang	Haku	9	118	170	3	3	3	0	1645.29	3.23	Paddy	Permanent
	Sub Total:					64	110	23	16	36816	71		
	Total:					69	117	28	21	39632	77	0	

Annex 2: Swambhuguthi land permanently for the Project

Name of the Tenant			Sheet no	VDC	Ward	Plot	Affected Area (Ropani)				Area (m)2	Convert Ropani	Type of Land
#	Tenant Name as per field Book	After Tenant Deceased Valid Tenants*					Ropani	Aana	Paisa	Dam			
1	Pato Tamang	Kamisya Tamang	096-1222	Haku	3	9	6	10	0	0	3370.05	6.63	Maize
2	Chheja Lama Tamang	Dami Sangbo Tamang	096-1222	Haku	3	10	1	4	0	2	639.83	1.26	House
3	Kharpa Tamang	Kharpa Tamang	096-1222	Haku	3	11	1	2	3	2	600.09	1.18	House
4	Malang Lama Tamang	Mendo Dolmo Tamang/ chhokta Tamang	096-1222	Haku	3	12	7	12	2	1	3960.21	7.79	Maize
5	Chheju Lama Tamang	Dami Sangbo Tamang	096-1222	Haku	3	13	5	12	0	0	2924.95	5.75	Maize
6	Kami Tamang	Kami Tamang	096-1222	Haku	3	14	7	1	0	0	3592.60	7.06	Maize
7	Pato Tamang	Kamisya Tamang	096-1222	Haku	3	15	2	15	2	0	1510.17	2.97	Maize
8	Kami Tamang	Kami Tamang	096-1222	Haku	3	16	3	9	3	2	1840.02	3.62	Maize
9	Chheju Lama Tamang	Dami Sangbo Tamang	096-1222	Haku	3	17	30	2	0	2	15328.18	30.13	Maize
10	Kami Tamang	Kami Tamang Waiba	096-1261	Haku	3	19	24	3	3	3	12333.68	24.25	Maize
11	Pemba Tamang	Ujyeli Tamangni	096-1261	Haku	3	20	13	0	3	1	6638.77	13.05	Maize
12	Pasang Nurbu Tamang	Pasang Tamang Waiba	096-1261	Haku	3	21	10	2	1	3	5164.37	10.15	Maize
13	Kami Tamang	Kami Tamang Waiba	096-1261	Haku	3	22	5	4	2	2	2690.48	5.29	House
14	Sharkhe Kami	Shankhe Kami	096-1261	Haku	3	23	12	13	1	2	6529.48	12.84	House
15	Kami Tamang	Kami Tamang Waiba	096-1261	Haku	3	24	1	15	1	1	995.52	1.96	Maize
16	Pemba Tamang	Ujyeli Tamangni	096-1261	Haku	3	25	1	10	3	0	850.46	1.67	Maize
17	Pasang Nurbu Tamang	Pasang Tamang Waiba	096-1261	Haku	3	26	3	11	0	2	1879.76	3.70	Maize
18	Pemba Tamang	Ujyali Tamang	096-1261	Haku	3	27	9	15	0	2	5059.06	9.95	Maize
19	Kalo Tamang	Pembi Tamangni	096-1261	Haku	3	28	28	14	0	0	14688.35	28.88	Maize
20	Dawa Simki Tamang	Dawa Singe Tamang	096-1261	Haku	3	29	28	4	3	0	14394.26	28.30	Maize

Name of the Tenant			Sheet no	VDC	Ward	Plot	Affected Area (Ropani)				Area (m)2	Convert Ropani	Type of Land
#	Tenant Name as per field Book	After Tenant Deceased Valid Tenants*					Ropani	Aana	Paisa	Dam			
21	Furpa Tamang Waiba	Furpa Tamang Waiba	096-1261	Haku	3	46	13	4	2	2	6759.98	13.29	Maize
22	Talama Tamang	Furpa Tamang, Falam Tamang, Karsang Namgyal Tamang	096-1261	Haku	3	52	13	0	0	0	6612.94	13.00	Maize
23	Plota Tamang	Rikkoti Tamang	096-1299	Haku	7	93	19	5	1	1	9833.96	19.33	Maize
24	Suku Tamang	Suku Tamang	096-1299	Haku	7	94	21	6	3	3	10903.00	21.43	Maize
25	Urpa Tamang (Naksi Tamang)	Rikkoti Tamang	096-1299	Haku	7	95	27	13	1	3	14161.78	27.84	Maize
26	Plota Tamang	Rikkoti Tamang	096-1299	Haku	7	96	4	0	2	0	2050.65	4.03	Maize
Total							293	186	36	34	155312.60	305	

*Despite total numbers is 26, the actual number is 19 with avoiding the repeated name so should take 19 into account

Annex 3: Government Land Requirement for Different Project Structures

I. Government land (Land Requirement for weir access road)			VDC Name	Ward No.	Plot No.	Affected Area (Ropani)				Area (m) ²	Convert Ropani	Type of Land	Structure Type
S. No.	Owner's / Tenant's Name	Sheet no				Ropani	Aana	Pausa	Dam				
1	GoN/CF	096-1376	Haku	9	110	12	6	0	2	6,300.55	12.38	Forest	Access Road for weir
2	GoN/Flood Plain	096-1376	Ramche	1	186	81	0	2	0	41,219.86	81.03	Flood Plain	Access Road for weir
3	GoN/CF	096_1376	Haku	9	110	7	3	1	2	3,670.10	7.21	Forest	Access Road for weir
4	GoN/CF	096-1337	Haku	9	110	106	15	3	0	54,423.44	106.98	Forest	Access Road for weir
5	GoN/CF	096-1338	Haku	9	110	33	2	0	1	16,853.74	33.13	Forest	Access Road for weir
6	GoN/CF	096-1398	Haku	9	110	38	0	2	1	19,348.10	38.04	Forest	Access Road for weir
7	GoN/CF	096-1398	Haku	7	16	16	9	3	3	8,456.41	16.62	Forest	Access Road for weir
8	GoN/CF	096-1299	Dhunch e	4	106	46	10	2	3	23,740.30	46.67	Forest	Access Road for weir
9	GoN/CF	096-1299	Haku	7	16	33	9	0	2	17,077.00	33.57	Forest	Access Road for weir
10	GoN/CF	096-1300	Haku	7	16	26	10	2	1	13,562.60	26.66	Forest	Access Road for weir
11	GoN/CF	096-1300	Dhunch e	4	1	50	15	2	0	25,927.42	50.97	Forest	Access Road for weir
12	GoN/CF	096-1260	Dhunch e	4	1	19	9	2	3	9,973.10	19.61	Forest	Access Road for weir
13	GoN/CF	096-1261	Dhunch e	4	1	29	15	1	2	15,240.90	29.96	Forest	Access Road for weir
14	GoN/CF	096-1261	Haku	7	41	5	9	0	2	2,834.80	5.57	Forest	Access Road for weir
15	GoN/CF	096-1261	Haku	3	1	2	6	0	1	1,210.20	2.38	Forest	Access Road for weir
16	GoN/CF	096-1261	Dhunch e	3	1	10	11	1	0	5,445.00	10.70	Forest	Access Road for weir
17	GoN/CF	096-1261	Haku	3	1	9	11	0	0	4,928.00	9.69	Forest	Access Road for weir
18	GoN/CF	096-1221	Haku	3	106	4	9	1	0	2,329.80	4.58	Forest	Access Road for weir
19	GoN/CF	096-1222	Haku	3	106	19	14	3	1	10,137.70	19.93	Forest	Access Road for weir
20	GoN/CF	096-1222	Haku	3	1	3	1	3	0	1,583.00	3.11	Forest	Access Road for weir

1. Government land (Land Requirement for weir access road)			VDC Name	Ward No.	Plot No.	Affected Area (Ropani)				Area (m) ²	Convert Ropani	Type of Land	Structure Type
S. No.	Owner's / Tenant's Name	Sheet no				Ropani	Aana	Paisa	Dam				
21	GoN/CF	096=1222	Haku	3	I	25	10	3	I	13,061.90	25.68	Forest	Access Road for weir
22	GoN/CF	096=1222	Haku	2	I	0	6	0	0	192.60	0.38	Forest	Access Road for weir
23	GoN/CF	096-1222	Haku	I	I	3	2	0	0	1,591.50	3.13	Forest	Access Road for weir
24	GoN/CF	096-1222	Dhunchu	7	314	61	12	3	0	31,435.60	61.80	Forest	Access Road for weir
Total of Government land for Access Road						637	194	34	25	330,543.62	649.75	-	-
2. Government Land Temporary leasing			VDC Name	Ward No.	Plot No.	Affected Area (Ropani)				Area (m) ²	Convert Ropani	Type of Land	Structure Type
S. No.	Land Owners / Tenant Name	Sheet no				Ropani	Aana	Paisa	Dam				
1	GoN/ River	096_I 376	Ramche	I	186	10	3	0	0	5,184.24	10.19	Flood Plain	Spoil area #1
2	GoN/River	096_I 376	Ramche	I	186	11	12	0	0	5,977.08	11.75	Flood Plain	Spoil area #2
3	GoN/CF	096-1376	Haku	9	110	13	1	0	3	6,650.69	13.07	Forest	Spoil area # 3
4	GoN/CF	096-1337	Haku	9	110	8	6	2	1	4,278.14	8.41	Forest	Spoil area # 4
5	GoN/CF	096-1337	Haku	9	110	2	8	1	3	1,285.63	2.53	Forest	Spoil area # 5
6	GoN/CF	096-1337	Haku	9	110	20	9	0	2	10,464.72	20.57	Forest	Spoil area # 6
7	GoN/CF	096-1337	Haku	9	110	6	12	2	2	3,453.51	6.79	Forest	Spoil area # 7
8	GoN/CF	096-1338	Haku	9	110	46	14	0	1	23,846.73	46.88	Forest	Spoil area # 8
9	GoN/CF	096-1298	Haku	9	110	37	1	3	1	18,880.00	37.11	Forest	Spoil area # 9
10	GoN/CF	096-1299	Haku	7	16	19	2	2	2	9,750.50	19.16	Forest	Spoil area # 10
11	GoN/CF	096-1261	Dhunchu	4	2	8	15	2	0	4,562.29	8.97	Flood Plain	Spoil # 11
12	GoN/CF	096-1261	Haku	3	I	71	2	3	0	36,206.00	71.17	Gullay	Gullay (Spoil # 12)
13	GoN/CF	096-1221	Haku	3	106	23	11	2	0	12,065.43	23.72	Flood Plain	Construction Road # 11
14	GoN/ Forest	096-1222	Dhunchu	7	314	34	11	0	2	17,651.00	34.70	Flood Plain	Spoil # 13
15	GoN/ River Flood Plain	096-1376	Ramche	2	186	17	7	3	0	8,895.08	17.48	Flood Plain	Construction Road # 2
16	GoN/ River Flood Plain	096-1376	Ramche	I	186	11	6	1	2	5,798.33	11.40	Flood Plain	Construction Road # 5
17	GoN/ River Flood Plain	096-1378	Haku	9	110	8	4	3	1	4,222.53	8.30	Forest	Construction Road # 6

1. Government land (Land Requirement for weir access road)			VDC Name	Ward No.	Plot No.	Affected Area (Ropani)				Area (m) ²	Convert Ropani	Type of Land	Structure Type
S. No.	Owner's / Tenant's Name	Sheet no				Ropani	Aana	Paisa	Dam				
18	GoN/CF	096-1338	Haku	9	110	44	12	2	1	22,782.69	44.79	Forest	Construction Road # 7
19	GoN/CF	096-1338	Haku	9	110	17	4	0	1	8,777.99	17.25	Forest	Construction Road # 8
20	GoN/CF	096-1222	Dhunche	7	314	25	6	1	0	12,917.78	25.39	Forest	Construction Road # 12
21	GoN/CF	0	Dhunche	7	314	8	5	0	0	4,230.00	8.31	Forest	Construction Road # 13
22	GoN/CF	096-1223	Dhunche	7	314	9	10	3	3	4,927.00	9.68	Forest	Construction Road # 14
23	GoN/CF	096-1223	Dhunche	7	314	36	5	0	1	18,473.70	36.32	Forest	Construction Road # 15
Total of Required Government Land for construction period						483	166	30	26	251,281.06	493.95	-	-
3. Government land (Permanent Requirement)			VDC Name	Ward No.	Plot No.	Affected Area (Ropani)				Area (m) ²	Convert Ropani	Type of Land	Structure Type
S. No.	Owner's / Tenant's Name	Sheet no				Ropani	Aana	Paisa	Dam				
1	GoN/ River Flood Plain	096-1261	Dhunche	7	314	76	13	2	3	39,097.10	76.86	River	Intake
2	GoN/ River Flood Plain	096-1376	Haku	1	186	108	11	0	3	55,295.07	108.70	River	Switchyard and Power house Camp
3	GoN/CF	096-1376	Haku	9	110	18	3	0	3	9,259.61	18.20	Forest	Access Road for surge shaft
4	GoN/CF	096-1376	Haku	8	10	12	13	3	2	6,545.80	12.87	Forest	Access Road for surge shaft
5	GoN/CF	096-1336	Haku	8	10	32	11	2	0	16,644.50	32.72	Forest	Access Road for surge shaft
6	GoN/CF	096-1337	Haku	8	10	13	10	3	0	6,948.40	13.67	Forest	Access Road for surge shaft
7	GoN/CF	096-1337	Haku	9	110	100	5	1	0	51,036.74	100.33	Forest	Access Road for surge shaft
Nepal Government						359	66	11	11	184,827.22	363.34	-	-

Annex 4: Classification of Adivasi/Janajati in Nepal

Ecological Region	Classification of Adivasi/Janajati					Total
	Endangered	Highly Marginalized	Marginalized	Disadvantaged	Advantaged	
Mountain		Siyar (Chumba), Lhomi (Shingsaba), Thudam (Thudamba)	Bhote (Bhutiya), Dolpo, Walung, Mugali, Larke (Nupriwa), Lhopa (Lhyopa), Tokpegola (Dhokpya)	Bahragaunle, Byansi (Sauki), Tingaunle Thakali, Sherpa, Tangbe (Tangbetani), Marphali Thakali, Chhaintan	Thakali	18
Hill	Bankariya, Hayu, Kusunda, Surel, Kuswadiya, Lepcha	Chepeng (Praja), Thami (Thangmi), Baramu	Gharti/Bhujel, Dura, Phree, Pahari, Sunuwar, Tamang	Limbu (Yakthumba), Chhantyal, Jirel, Rai, Magar, Yakhkha, Gurung (Tamu), Hyolmo	Newar	24
Inner Terai	Raji, Raute	Bote, Danuwar, Majhi	Darai, Kumal			7
Terai	Meche (Bodo), Kisan	Dhanuk (Rajbansi), Jhangad/Dhangad, Satar/Santhali	Dhimel, Gangai, Tharu, Rajbansi (Koch), Tajpuriya			10
Total	10	12	20	15	2	59

Source: Nepal Federation of Indigenous Nationalities (Adivasi/Janajati) (NEFIN), 2004.

Annex 4: Regional poverty lines in Nepal

SN	Analytical Domain	Poverty Lines Per Capita Annual Income (Rs)			Poverty Rate
		Food-Item	Non Food Item	Total	
1	Mountains	13,295	6,564	19,859	42.27
2	Urban-Kathmandu	14,610	26,323	40,933	11.47
3	Urban-Hill	11,805	7,772	19,577	8.72
4	Urban –Terai	11,743	9,390	21,133	22.04
5	Rural Hills-Eastern	12,297	4,254	16,551	15.93
6	Rural Hills-Central	12,240	6,448	18,688	29.37
7	Rural Hills-Western	12,537	5,891	18,428	28.01
8	Rural Hill- Mid & Far Western	11,772	4,583	16,355	36.83
9	Rural Terai-Eastern	11,333	5,524	16,857	20.97
10	Rural Terai-Central	11,257	6,283	17,540	23.13
11	Rural Terai-Western	10,600	5,398	15,998	22.21
12	Rural Terai- Mid & Far Western	10,998	6,321	17,319	31.09
Nepal		11,929	7,332	19,261	25.13

Source: Poverty in Nepal, CBS, National Planning Commission, 2068

Annex 5: List of Key Informants Contacted During the Field Visit

S. No.	Name of Key Informant	Position/ Designation	Address	Contact Number
1	Ms. Jyoti Timilsina	Secretary, Haku VDC	Dhunche, Rasuwa	9849464660
2	Mr. Tikam Bahadur Shahi	Secretary, Dhunche VDC	Dhunche, Rasuwa	9849883128
3	Ms. Gangadevi Sunar	Secretary, Ramche VDC	Dhunche, Rasuwa	9846139642
4	Mr. Dipendra Shrestha	Officer, DEO, Rasuwa	Dhunche, Rasuwa	9845022763
5	Mr. Radhakrishna Das	DFO, Rasuwa	Dhunche, Rasuwa	9844198115
6	Mr. Ritman Tamang	Principal, Tiru Primary School	Haku-8, Rasuwa	9841087509
7	Mr. Mangal Tamang	Social Worker, Nepali Congress, Rasuwa	Dadagaun, Rasuwa	9741120634
8	Mr. Bom Bahadur Tamang	Social Worker, UCPN - Maoist,	Haku-9, Gagane, Rasuwa	9741275326
9	Mr. Kami Chhiring Tamang	Social Worker- CPN UML	Haku-3, Hakubesi	9849488892
10	Mr. Buchung Tamang	Assistant, Haku VDC	Haku, rasuwa	9841893178
11	Mr. Dittha Tamang	Dittha, Swyambhu Guthi	Haku-3, Hakubesi, Rasuwa	9849984757
12	Mr. Lakpa Tamang	President, Rasuwa Chapter of NEFIN / Principal, Saraswati L. S. School,	Dhunche, Rasuwa	9741040490
13	Mr. Yosinki Tamang	Local (Disabled)	Ramche-9, Rasuwa	9843507925
14	Mr. Nim Bahadur Titung	Social Worker, Nepali Congress	Ramche-9, Rasuwa	
15	Er. Ishwor Raj Pandey	Site Engineer, KSMS	Mailungbesi, Haku-9, Rasuwa	
16	Tirtha Bahadur Gurung	President, VDC Unit of Nepali Congress	Dadagaun, Rasuwa	9741086456
17	Buddhi Bahadur Tamang	President, School Management Committee, Haku-8, Tiru, Rasuwa	Haku-8, Tiru, Rasuwa	9843404268
18	Sonam Phindo Tamang	Farmer	Haku-3, Phulbari, Rasuwa	
19	Panchabir Tamang	Local Entrepreneur	Haku-9, Mailungbesi	9741275233
20	Parma Singh Tamang	Secretary, Dakshinkali CF	Haku-9, Gogane	9741237757

Annex 6: List of Participants in the Focus Discussion Groups (FDG)

SN	Name	VDC-Ward
1	Dawa Tamang	Haku-9
2	Rebba Tamang	Haku-8
3	Chonggum Tamang	Haku-8
4	Kale Tamang	Haku-9
5	Budhising Tamang	Haku-9
6	Kesang Tamang	Haku-9
7	Semsang Tamang	Haku-9
8	Dam Bhadur Tamang	Haku-9
9	Wangde Ghale	Haku-9
10	Purchi maya Tamang	Haku-8
11	Rita Tamang	Haku-9
12	Sirjana Tamang	Haku-9
13	Rupa Maya Tamang	Haku-9
14	Sonam Tamang	Haku Besi-3
15	Furwa Lama	Haku Besi-3
16	Chiring Dolma Tamang	Haku Besi-3
17	Sumitra Gurung	Haku Besi-3
18	Rejina Tamang	Haku Besi-3
19	Faijam Tamang	Haku Besi-3
20	Ranjung Tamang	Haku Besi-3
21	Teji Mendro Tamang	Haku Besi-3
22	Kami Dola	Haku Besi-3
23	Aang Temba Tamang	Dhunche-4
24	Mingmar Tamang	Dhunche-3
25	Subba Tamang	Dhunche-4
26	Pasang Chiring Tamang	Dhunche-4
27	Aaeram Tamang	Dhunche-4
28	Situla Tamang	Dhunche-4
29	Dawa Tamang	Dhunche-4
30	Pasang Tamang	Dhunche-4
31	Kippa Gyalmo Tamang	Dhunche-4
32	Lakpa Tamang	Dhunche-5
33	Lapkpa Ghale	Dhunche-1
34	Santa Bdr Ghale	Dhunche-2
35	Furpa Ghale	Dhunche-2
36	Nema Ghale	Dhunche-2
37	Sundar Ghale	Dhunche-1
38	Suku Thokra	Dhunche-1
39	Santosh Ghale	Dhunche-2
40	Dawa Thokra	Dhunche-1
41	Sonam Chiring Thokra	Dhunche-1
42	Rinjen Dawa Tamang	Dhunche-1

SN	Name	VDC-Ward
43	Ihakang Tamang (Ghale)	Dhunche-1
44	Pasang Deki Ghale	Dhunche-2
45	Suku Tamang	Dhunche-1
46	Senam Ghale	Dhunche-2
47	Yayalmo Ghale	Dhunche-2
48	Gombo Tamang	Dhunche-1
49	Lawang Gyalbo Tamang	Dhunche-2
50	Hira B.Ka	Dhunche-2
51	Kami Lapdin Tamang	Dhunche-1
52	Suku Maya B.Ka	Dhunche-2
53	Maya Kumari B.Ka	Dhunche-2
54	Seder Ghale	Dhunche-1
55	Balaram B.Ka	Dhunche-2
56	Norsang Budhi Ghale	Dhunche-1
57	Domo Ghale	Dhunche-1
58	Chiring Yalmo Ghale	Dhunche-1
59	Kami Subba Ghale	Dhunche-1
60	Lal Bdr Ghale	Dhunche-1
61	Sanu Kaji Shrestha	Dhunche-1
62	Kalu Tamang	Dhunche-1
63	Junkiri Lama	Ramche-1
64	Pasang Butti Tamang	Ramche-1
65	Narsi Yalmo Tamang	Ramche-1
66	Furwa Yalmo Ghale	Ramche-1
67	Nim Tasi Tamang	Ramche-1
68	Mindra Yalmo Tamang	Ramche-1
69	Chiring Jippa Tamang	Ramche-1
70	Nem Butti Tamang	Dhunche-1
71	Man Maya Tamang	Dhunche-1
72	Kumari Tamang	Dhunche-1
73	Nim Bahadur Titung	Ramche-9
74	Yosinki Tamang	Ramche-9
75	Urpa Titung	Ramche-9
76	Setti Titung	Ramche-9
77	Pasang Chhiring Tamang	Ramche-9
78	Mento Palmo Tamang	Ramche-9
79	Mento Karmo Tamang	Ramche-9
80	Kesang Tamang	Ramche-9
81	Mingmar Lhamo Tamang	Ramche-9
82	Pasang Tamang	Ramche-9
83	Jite Tamang	Ramche-9
84	Bijesh Tamang	Ramche-9

Annex 7: List of Sampled Households Interviewed

HHID	Name of VDC	Village/ Settlement	Name of Household Head	Family Size	Land Owned (Ha)	Annual Family Income (Rs)
1	Ramche	Badible	Dawa Lopchen Tamang	8	0.2632	175000
2	Ramche	Paleb	Dorje Tamang	6	0.4211	65000
3	Ramche	Ramche	Sete Tamang	8	0.2105	254000
4	Ramche	Grang	Lakpa Tamang	7	0.7895	266000
5	Ramche	Jong	Kami Sherpa Tamang	4	0.1579	260000
6	Ramche	Grang	Ugren Tamang	6	0.2632	51000
7	Ramche	Gochet	Dawa Sherpa	5	0.1579	54000
8	Ramche	Namsa	Cheyalbo Ghale	5	0.2105	160000
9	Ramche	Bungdrang	Sancha Bdr Waiwa	3	0.3158	43000
10	Ramche	Grang	Dolma Waiwa Tamang	4	0.1579	196000
11	Ramche	Grang	Pemba Syanba	4	0.1579	40000
12	Ramche	Nauranga	Sete Tamang	5	0.2105	80000
13	Ramche	Gochet	Chebande Tamang	5	0.3158	78000
14	Ramche	Grang	Kami Sherpa Tamang	4	0.3684	64000
15	Ramche	Grang	Wandi Lopchan	3	0.1579	160000
16	Ramche	Numrang	Rajan Lopchan	3	0.1579	200000
17	Ramje	Grang	Sonam Si Lopchan	6	0.1579	60000
18	Ramche	Grang	Sede Sanba Tamang	5	0.3684	200000
19	Ramche	Grang	Gombo Lopten Tamang	6	0.2105	36000
20	Ramche	Gochchet	Pasang Chiring Tamang	5	0.2632	56000
21	Ramche	Grang	Pemba Sherpa Tamang	3	2.1053	44400
22	Ramche	Grang	Dansigi Tamang	5	0.1579	48000
23	Ramche	Grang	Sanu Waiwa	5	0.3158	43000
24	Ramche	Grang	Siga Lama	6	0.0526	300000
25	Ramche	Gumchet	Labhu Ram Moktan	8	0	90000
26	Ramche	Gumchet	Gara Sinke Tamang	4	0.9736	75000
27	Ramche	Temang	Man Bdr Lopchan	4	0.6579	83000
28	Ramche	Jebang	Garbe Thokra	7	0.2368	84000
29	Ramche	Sherpa Kyu	Pasang Fijjo Lama	4	0.2105	178000
30	Ramche	Ramche	Som Prasad Adhikari	13	0.0132	1078000
31	Ramche	Batilbhe	Urba Tamang	9	0.9474	379500
32	Ramche	Jong	Mar Lama	7	0.3421	230000
33	Ramche	Ramche	Pasang Nurpu Tamang	5	0.1316	76000
34	Ramche	Ramche	Chiring Muktan	5	0.1842	230000
35	Ramche	Tobolyo	Karsinki Thokra	6	0.1842	130000

HHID	Name of VDC	Village/ Settlement	Name of Household Head	Family Size	Land Owned (Ha)	Annual Family Income (Rs)
36	Ramche	Brabachet	Unnaitram Tamang	4	0.1052	300000
37	Ramche	Temarang	Sarki Lotchang	6	0.3684	90000
38	Ramche	Serpo Kyu	Nim Bdr Titung	8	0	246000
39	Ramche	Temrang	Sanubudhe Tamang	9	0.1579	106800
40	Ramche	Gumchet	Mendo Yalmu Tamang	8	0.3158	75000
41	Ramche	Gumchet		7	0	67000
42	Ramche	Babrachet	Tulu Tamang	7	0.3158	404400
43	Ramche	Topalpo	Jim Bdr	4	0.2632	130000
44	Ramche	Babrachet	Sete Tamang	9	0.5263	523000
45	Ramche	Brabra	Kami Lamo	4	0.2632	228200
46	Ramche	Bapible Tol	Chamsing Tamang	4	0.1579	200750
47	Ramche	Bhumiyen	Lakpa Tamang	5	0.3158	251501
48	Ramche	brabrachet	Furba Lamo Tamang	5	0.4211	204700
49	Ramche	Kharihang	Sanu Budhe Tamang	14	0.2105	226200
50	Ramche	Bhumisthan	Tuluthin Tamang	5	0.3158	258750
51	ramche	hadifor	Ralpa Tamang	8	0.3158	242500
52	ramche	Badiple	Jite Tamang	9	0.9474	643500
53	Ramche	Dobomwa	Kame Tamang	7	0.704	404500
54	Ramche	Dobonawa	Chiring Tamang	3	0.2632	50000
55	Ramche	Grang	Sancha Wanti Tamang	8	1	200000
56	Ramche	Grang	Lama Sinki Tamang	7	0.6842	190000
57	Ramche	Grang	Bandilo Lopchang	5	0.1053	50000
58	Ramche	Rume Gaun	Risang Tamang	6	0.4211	154000
59	Ramche	Grang	Nurpa Lopchang Tamang	3	0.1053	175000
60	Ramche		Jayaba Lama	7	0.6316	250000
61	Ramche	Gijen	Lakpa Tamang	9	0.4211	78225
62	Ramche	Gijet	Mensinki Syanba	8	1.0526	325000
63	Ramche	Lumrang	Gore Lopchang	9	0.4211	229000
64	Ramche	Grang	Rappa Thokra	6	0.3158	40000
65	Ramche	Grang	Pasang Butti Ronchan	4	0.2105	155000
66	Ramche	Numrang	Gyamawa Lopcha	5	0.4737	366000
67	Ramche	Grang	Bangjyal Tamang	11	0.6842	120000
68	Ramche	Grang	Tar Lama	7	0.2105	70000
69	Ramche	Grang	Ramawa Tamang	5	0.2632	72000
70	Ramche	Grang	Chiring Tamang	6	0.3684	20000
71	Ramche	Grang	Nema Chewang Tamang	5	0.1053	50000
72	Ranche	Hadifor	Butti Tamang	7	0.3158	50000

HHID	Name of VDC	Village/ Settlement	Name of Household Head	Family Size	Land Owned (Ha)	Annual Family Income (Rs)
73	Ramcho	Dakipur	Mar Lama	3	0.2632	50000
74	Ramcho	Temrang	Lakpa Tamang	4	0.1579	300000
75	Ramcho	Temrang	Nembar Tamang	5	0.2632	103200
76	Ramche	Temrang	Subba Tamang	6	0.1579	50000
77	Ramche	Temrang	Faktam Tamang Lopchang	6	0.2632	204000
78	Ramche	Temrang	Kami Chiring Tamang	5	0.2105	250000
79	Ramche	Ramche Temrang	Urpa Tamang Titung	2	0.1053	551000
80	Dhunche	Dade	Dawa Dolma Ghale	5	1.2105	310000
81	Dhunche	Thade	Sen Nurpu Tamang	5	0	310000
82	Dhunche	Thade	Sap Jyalpo Ghale	6	0.9474	86000
83	Dhunche	Thade	Kamendo Tamang	5	0.8421	90000
84	Dhunche	Thake	Son Bdr B Ka	8	0	220000
85	Dhunche	Thade	Besakta Ghale	8	3.6842	565000
86	Dhunche	Dhade	Lakta Bdr Ghale	6	1.1053	406000
87	Dhunche	Dhade	Sonam Chiring Tamang	7	1.2106	231000
88	Dhunche	Thade	Supar Ghale	10	0.8947	116000
89	Dhunche	Thade	Cheyal Ghale	9	1.0526	232200
90	Dhunche	Thade	Kalu Tamang	7	1.0526	229000
91	Dhunche	Dhade	Reppa Tamang	5	0	270000
92	Dhunche	Dhade	Sarki Tamang	4	1.3158	218000
93	Dhunche	Thade	Hira B Ka	5	0	376000
94	Dhunche	Dhade	Furba Gyalpo Ghale	7	1.8421	361000
95	Dhunche	Dhade	Aaitaram Tamang	5	0.2632	257000
96	Dhunche	Dhade	Karpu Singi Tamang	5	0.2105	58200
97	Dhunche	Dhade	Santa Bdr Ghale	8	1.8421	253000
98	Dhunche	Dhade	Lakpa Ghale	6	0.5263	184000
99	Dhunche	Dhade	Furba Sotar Tamang	7	0.3684	298400
100	Dhunche	Chande	Gyal Chiring Tamang	5	0	177500
101	Dhunche	Chyanre	Bhim Bdr Tamang	5	0.7895	180000
102	Dhunche	Bokejunda	Risande Ghale	4	0.3684	66000
103	Dhunche	Bokejunda	Shri Tindingmar Gyalmo Ghale	8	0.1579	137000
104	Dhunche	Bokejunda	Labang Gyalbo Ghale	12	1.0526	2467000
105	Dhunche	Thunche	Bikash	3	0.4211	216000
106	Dhunche	Dhunche	Yokhima Lama	6	0	700000
107	Dhunche	Dhunche	Rinchen Nurpu Ghale	3	0.6842	75200
108	Dhunche	Dhunche	Sonam Nurpu Ghale	4	0.6316	47000

HHID	Name of VDC	Village/ Settlement	Name of Household Head	Family Size	Land Owned (Ha)	Annual Family Income (Rs)
109	Dhunche	Nayabajar dhunche	Ram Pakhrin	4	0.0197	940000
110	Dhunche	Nayabajar Dhunche	Man Bdr Thapa Magar	4	0.0132	102000
111	Dhunche	Dhunche	Lawang Tamang	5	0	111200
112	Dhunche	Naya Bajar		4	1.5789	1467500
113	Dhunche	Nagung	Man Bdr Tamang	4	0.4211	76600
114	Dhunche	Nabung	Rinchen Chobang Ghale	4	0.9474	242000
115	Dhunche	Nau	Furba Pasang Tamang	6	0.6316	89400
116	Dhunche	Ghandel Tol	Riki Lamo Tamang	2	0.1053	180000
117	Dhunche	Dhandel Tol	Mina Shrestha	2	0.0132	104000
118	Dhunche	Dhundel	Kisang Tamang	7	0.0658	160000
119	Dhunche	Dhongle Tole	Karpu Sonam Tamang	5	0.2368	81000
120	Dhunche	Sole	Alisha Tamang	3	0.5263	197100
121	Dhunche	Sole	Angatamba Tamang	4	3.1579	448100
122	Dhunche	Sole	Mingmar Tamang	6	3.1579	320000
123	Dhunche	Sole	Nuptasi Tamang	7	0.5263	193000
124	Dhunche	Sole	Pasang Chiring Tamang	4	0.6579	81850
125	Dhunche	Sole	Aaita Ram Tamang	7	1	156600
126	Dhunche	Sole	Dawa Tamang	7	0.3421	180000
127	Dhunche	Get Tol	Tar Kel	2	0.1053	162000
128	Dhunche	Get Tol	Dub Dorje Tamang	5	0.1184	350000
129	Dhunche	Dogme	Dinesh Lamichane	4	0.0526	220000
130	Dhunche	Dhonde	Anju Thokra	2	0.1711	132000
131	Dhunche	Bhimali	Chiring Gyamjo	6	0.6579	383600
132	Dhunche	Belkam get	Kami Tamang	2	0.1711	198000
133	Dhunche	Chandani	Khanka Bdr Bogati	6	0.0526	536000
134	Dhunche	Swagat Tol	Kam Chiring Tamang	4	0.3947	150000
135	Dhunche	Bhimali	Lendup Tamang	8	1.0526	366800
136	Dhunche	Bhimari	Jaibo Lama	3	0.2895	519800
137	Dhunche	Bhimali	Shrilal Tamng	6	1.0527	336000
138	Dhunche	Bhimali	Tabam Rim Damchi Dalmo Tamang	6	0.5	307200
139	Dhunche	Bhimili	Buddhi Bdr Tamang	4	1.2336	26455
140	Dhunche	Manekot	Risibang Diki	7	0.4342	444000
141	Dhunche	Ghumtitol	Lakpa Ghale	3	0	204000
142	Dhunche	manekor	Aatmasing Waiwa	5	0.3816	240000
143	Dhunche	Manekor	Bangel D M	2	0	182000

HHID	Name of VDC	Village/ Settlement	Name of Household Head	Family Size	Land Owned (Ha)	Annual Family Income (Rs)
144	Dhunche	Manekor	Pema Cheki	1	0.4211	7500
145	Dhunche	Dhonde	Pempa Tamang	3	0.2368	120000
146	Dhunche	Dhungle	Samden Ghale	5	0.3816	227000
147	Dhunche	Dhungle	Lama Tenjig Ghale	5	0.75	436200
148	Dhunche	Bidepar	Amit Lama	5	1.227	344000
149	Dhunche	Sole	Subba Tamang	11	1.4737	118000
150	Dhunche	Bhimali	Raj Kumar Lama	4	0.5263	109300
151	Dhumche	Bimali	Rinjing Tamang	5	0.7368	131500
152	Dhunche	Bhimali	Temba Sarki Tamang	6	0	235000
153	Dhunche	Bhimali	Suba	7	1.5789	378000
154	Dhumche	Bimalo	Nurba Chiring	5	0.8421	420900
155	Dhunche	Sole	Dawa Pemba	7	1.0526	347000
156	Dhunche	Bhimali	Dopche	6	0.6316	136200
157	Dhumche	Malekot	Shanta Bdr Gurung	5	0	460000
158	Dhunche	Gyanten	Karsang Tamang	4	0.3684	149000
159	Dhunche	Gyanten	Kabro Tamang	5	0.3158	192000
160	Dhunche	Gyanten Tol	Gonchu Ghale	4	0.2632	132000
161	Dhunche	Gyanten	Bhunima Tamang	6	0.2632	267000
162	Dhunche	Nabejir	Furpa Chebang Ghale	6	0.1053	348000
163	Ghunche	Manekor	Nima Dundup	6	0.5263	400000
164	Dhunche	Gyanten Tol	Dudrake	5	0.1579	564000
165	Dhunche	Get Tol	Bishwo Ghale	5	0	1520000
166	Dhunche	Bhimali	Suk Bdr Tamang	5	0.5263	264500
167	Dhunche	Mankor	Lakpa	3	0.3684	180000
168	Dhunche	Jende Tol	Norbu Ghale	6	0.6316	347000
169	Dhunche	Manekor	Nima Waijyu	5	0.5263	327500
170	Dhunche	Manikot	Dawa Tamang	5	0.6316	300000
171	Dhunche	Dhonme	Karsang	2	0.5263	840000
172	Dhunche	Dhonme	Men Dolma	5	0.6842	144000
173	Dhunche	Dhongme	Lama Kharpo Ghale	4	0.5263	134800
174	Dhunche	Cha oda	Pasang Tamang	3	0	184000
175	Dhunche	Boke Jhunda	Gyami Ghale	5	1.0526	100000
176	Dhunche	Boke jhunda	Ram Ji Yekta	12	3.3158	586000
177	Dhunche	Dhonde	Rinjen Chobang Tamang	3	0.4474	456000
178	Haku	Mailung	Bir Bdr Tamang	6	0.0066	805000
179	Haku	Sano Haku	Gonga Tamang	9	0	150000
180	Haku	Tiru	Siga Lama Tamang	4	1.0526	125000
181	Haku	Tulo Haku	Temba Chiring Tamang	5	1.0527	250000

HHID	Name of VDC	Village/ Settlement	Name of Household Head	Family Size	Land Owned (Ha)	Annual Family Income (Rs)
182	Haku	Tiru		6	0.6316	30000
183	Ramche	Gumchet	Laburam Tamang	12	0.5264	125000
184	Haku	Gogane	Dhanpati Tamang	8	0.4737	400000
185	Haku	Thulo haku	Buddha Singh Tamang	6	1.0526	105000
186	Haku	Thulo Haku	Gar Dorje	6	0.5263	90000
187	Haku	Dute Haku	Che Nurpu Tamang	7	0.7368	84000
188	Haku	Pukta Haku	Tasi Dev Tamang	7	1.0526	300000
189	Haku	Thulo Haku	Minu Lasi Tamang	5	0.8421	100000
190	Haku	Thulo Haku	Pemba Banjing Tamang	4	0.2632	120000
191	haku	Sano Haku	Sukuman B Ka	5	0.1579	70000
192	Haku	Suryajet	Aaita Ram Tamag	2	0.7007	40000
193	Haku	Tiru	Birman Tamang	9	0.3158	66500
194	Haku	Gogane	Kami Tamang	8	3.6842	282000
195	Haku	Gogane	Puri Tamang	5	0.6316	122000
196	Haku	Gogane	Dawa Tamang	7	1.5789	154000
197	Haku	Gogane	Reppa Tamang	4	0.7368	61000
198	Haku	Sano Haku	Chiring Gambo	6	1.0526	112000
199	Haku	Mailung Besi	Param Sing Tamang	17	0.3289	230000
200	Haku	Sano Haku	Aaite Tamang	4	0.5526	37000
201	Haku	Sano haku	Kesing Lama	6	0.75	47200
202	Haku	Sano Haku	Tenba Dharke Tamang	3	0.7072	253400
203	haku	Braku	Kami Ghale	4	0.5263	52000
204	Haku	Sano haku	Pasang Tamang	5	0.1053	150000
205	Haku	Sano haku	Dhili Byandi Tamang	6	0.2632	61000
206	Haku	Sano haku	Dawa Finjo Tamang	5	0.4211	43000
207	Haku	Sano Haku	Nikhal Tamang	4	0.2105	42000
208	Haku	Sano haku	Nima Mangyal Tamang	5	0.3158	73000
209	Haku	Braku	Gamaha Ghale	11	0.5263	258000
210	Haku	Mailung	Pancha Tamang	9	0.0132	1096000
211	Haku	Mailung Besi	Supimaya Tamang	5	0.1842	48000
212	Haku	Gogane	Chenam Tamang	9	0.2632	48000
213	Haku	Gogane	Krishna Bdr Tamang	7	0.3158	193500
214	Haku	Gogane	Bhim Bdr Tamang	2	0.2105	28000
215	Haku	Gogane	Tarkasing Tamang	4	0.2105	36000
216	Haku	Gogane	Risang Ghale	12	0.2632	51400
217	Haku	Gogane	Sekh Tamang	11	0.2105	72000
218	Haku	Gogane	Dawa Minmar Tamang	4	0	48000
219	Haku	Thulo Haku	Dumdup Tamang	7	0.5263	144000

HHID	Name of VDC	Village/ Settlement	Name of Household Head	Family Size	Land Owned (Ha)	Annual Family Income (Rs)
220	Haku	Thulo Haku	Norche Tamang	6	0.1579	132000
221	Haku	Gogane	Kami Norbu Tamang	7	0.1579	36000
222	Haku	Gogate	Khaseb Tamang	6	0.4737	260000
223	Haku	Gogane	Singbir Tamang	5	0.4276	300000
224	Haku	Gogane	Charko Gombu Tamang	7	0.6316	95000
225	Haku	Gogane	Furba	6	0.2631	92000
226	Haku	Gogane	Krishna	5	0.6316	94000
227	Haku	Gogane	Sukuman Tamang	6	0.3685	35000
228	Haku	Gogane	Man Bdr Tamang	5	0.3685	138000
229	Haku	Gogane	Man Bdr	6	0.3684	110000
230	Haku	Thulo Haku	Norbu Lanbu	7	1.3158	205600
231	Haku	Thulo Haku	Dawa Dorje	9	1.2632	966000
232	Haku	Thulo Haku	Pemba Dorje	5	0.421	375000
233	Haku	Thulo Haku	Risang	4	0.4211	219200
234	Haku	Thulo Haku	Sing Bdr	4	0.5264	206400
235	Haku	Thulo Haku	Kadyul	5	0.4737	100000
236	Haku	Gokane	Lyampa	3	0.3684	85000

Annex 8: List of PAF Households Interviewed

#	HHID	Name of VDC	Village/ Settlement	Name of Household Head	Family Size	Land Owned (Ha)	Annual Family Income (Rs)
1	1001	Haku	suchet	Pandish Tamang	6	0.6316	682000
2	1002	haku	suchet	Mingma Dorje Tamang	9	0.6316	720000
3	1003	Haku		Chumsi Tamang	6	2.1053	100000
4	1004	haku	Fulbari	Dami Sang Lama	10	0.7895	1600000
5	1005	Haku	Fulbari	Kharpa Tamang	8	0.8948	100000
6	1006	Haku	Bajet	Gompo Tamang	11	2.7368	271500
7	1007	Haku	Mailing-Besi	Antare Tamang	7	0.6974	627600
8	1008	haku	Tikhu	Dundup Tamang	7	2.5812	80000
9	1009	Haku	Gogane	Dordo Ghale	9	0.3811	120000
10	1010	Haku	Bajet	Suku Tamang	9	1.1281	103000
11	1011	Haku	Syuchet	Kami Sing Tamang	7	1.5789	58000
12	1012	Haku	Thanku	Sankha Kami	5	0.6756	62000
13	1013	Haku	Haku besi	Dawa Sinki Tamang	8	1.5948	108600
14	1014	Haku	haku Besi	Kalo Tamang	7	1.5197	134000
15	1015	Haku		Sonam Finjo Tamang	7	0.8421	36000
16	1016	Haku	Hakubesi	Pasang Norbu Tamang	7	0.7204	182400
17	1017	Haku	Mailungbesi	Aasabari Tamang	10	0	715000
18	1018	Haku	Haku besi	Talma Tamang	6	0.125	180000
19	1019	Haku	Gokane	Bir Bdr Tamang	9	0.0099	334000
20	1020	Haku	Gogane	Nursing Tamang	10	0.3684	112000
21	1021	Haku	Tikhra	Budhi Bdr Tamang	9	0.3289	50000
22	1022	Haku	Tiru	Sonmani Tamang	8	0.1743	130000
23	1023	Haku	Gokane	Bang Lama	7	0.2368	355000
24	1024	Haku	Khochyanba	Niyam Tolma	6	1.2632	210000
25	1025	Haku	Haku Besi	Kami Tamang Waiwa	6	2.9474	291600
26	1026	Haku	Haku Besi	Chiring Narbo	6	1.2632	88000
27	1027	Haku	Gogane	Sing Lama Tamang	6	0.3684	80200
28	1028	Haku	Gogane	Risha Tamang	6	0.5264	100000
29	1029	Haku	Gogane	Gaturche Tamang	7	0.4211	120000
30	1030	Haku	Gogane	Semsang Chaleni	1	0.7895	76800
31	1031	Haku	Hakubesi	Dorje Tamang	7	0.1579	48000
32	1032	Haku	Gogane	Gyalma Dorje Tamang	5	0.2632	48000
33	1033	Haku	Gogane	Bir Bdr Tamang	5	0.2632	90000
34	1034	Haku	Tiru	Talama Tamang	10	0.8166	25000

Appendix A: Final Report