



# **Social Assessment (SA) of Kabeli-A Hydroelectric Project**

**JULY 2013**

Submitted to  
**WORLD BANK**

Submitted by  
**KABELI ENERGY LIMITED**  
Buddha Nagar, Kathmandu, Nepal

Prepared by  
**HYDRO-CONSULT ENGINEERING LIMITED**  
Buddha Nagar, Kathmandu, Nepal

## Table of contents

|  | <b>Page No.</b> |
|--|-----------------|
| <b>EXECUTIVE SUMMARY .....</b>                             | <b>1</b>        |
| <b>I INTRODUCTION OF THE PROJECT .....</b>                 | <b>2</b>        |
| 1.1 Background context of the KAHEP .....                  | 3               |
| 1.2 Project proponent .....                                | 4               |
| 1.3 Organization responsible for preparing the report..... | 4               |
| 1.4 Objectives of SA study.....                            | 5               |
| <b>2 DESCRIPTION OF THE PROJECT .....</b>                  | <b>7</b>        |
| 2.1 Project location .....                                 | 7               |
| 2.2 Accessibility.....                                     | 7               |
| 2.2.1 Overall accessibility.....                           | 7               |
| 2.2.2 Project component accessibility .....                | 8               |
| 2.3 Project features.....                                  | 8               |
| 2.3.1 Headworks.....                                       | 9               |
| 2.3.2 Waterways.....                                       | 10              |
| 2.3.3 Powerhouse.....                                      | 10              |
| 2.3.4 Tailrace .....                                       | 11              |
| 2.3.5 Access road .....                                    | 11              |
| 2.3.6 Salient features of the project.....                 | 11              |
| 2.4 Construction planning.....                             | 15              |
| 2.4.1 Construction schedule.....                           | 15              |
| 2.4.2 Camp area.....                                       | 15              |
| 2.4.3 Construction materials and quarry sites .....        | 15              |
| 2.4.4 Spoil and muck disposal area.....                    | 15              |
| 2.4.5 Construction power .....                             | 16              |
| 2.4.6 Manpower requirement.....                            | 16              |
| <b>3 APPROACH AND METHODOLOGY .....</b>                    | <b>18</b>       |
| 3.1 Study team.....  | 18              |
| 3.2 Study approach and process.....                        | 18              |
| 3.2.1 Approach.....  | 18              |
| 3.2.2 Process.....   | 19              |
| 3.3 Methods and tools of data collection .....             | 20              |
| 3.3.1 Desk study .....                                     | 20              |
| 3.3.2 Field study .....                                    | 21              |
| 3.4 Mode of data analysis.....                             | 23              |

|          |  |           |
|----------|--|-----------|
| 3.5      | Preparation of SA .....  | 23        |
| <b>4</b> | <b>DESCRIPTION OF THE SOCIO-CULTURAL ENVIRONMENT ...</b>         | <b>26</b> |
| 4.1      | Eastern Development Region (EDR) .....                           | 26        |
| 4.1.1    | Population and demography .....                                  | 26        |
| 4.1.2    | Health and sanitation.....                                       | 27        |
| 4.1.3    | Development indicators .....                                     | 27        |
| 4.2      | Project districts.....   | 28        |
| 4.2.1    | Physical location.....   | 28        |
| 4.2.2    | Demography .....   | 28        |
| 4.2.3    | Literacy .....   | 30        |
| 4.2.4    | Religion .....   | 30        |
| 4.2.5    | Language .....   | 31        |
| 4.2.6    | Land use pattern.....  | 31        |
| 4.2.7    | Economic activities.....   | 32        |
| 4.2.8    | Access to civic amenities.....                                   | 33        |
| 4.3      | Project VDCs .....   | 34        |
| 4.3.1    | Settlement patterns .....  | 34        |
| 4.3.2    | Demography .....   | 35        |
| 4.3.3    | Literacy .....   | 36        |
| 4.3.4    | Economy, livelihood patterns and practices .....                 | 37        |
| 4.3.5    | Cultural background of the project VDCs.....                     | 37        |
| 4.4      | Profile of surveyed households .....                             | 38        |
| 4.4.1    | Demography .....   | 38        |
| 4.4.2    | Literacy and education .....                                     | 40        |
| 4.4.3    | Religion and language.....                                       | 40        |
| 4.4.4    | House-ownership and kind of house occupied.....                  | 41        |
| 4.4.5    | Household economy and livelihood practices.....                  | 42        |
| 4.4.6    | Access to facilities .....                                       | 48        |
| 4.5      | Development and challenges .....                                 | 51        |
| 4.5.1    | National development priority.....                               | 51        |
| 4.5.2    | Local development and challenges .....                           | 52        |
| 4.6      | Adivasi Janajati .....   | 54        |
| 4.6.1    | Definition of <i>Adivasi Janajati</i> (Indigenous Peoples) ..... | 54        |
| 4.6.2    | National legal and policy framework.....                         | 55        |
| 4.6.3    | International legal and policy framework.....                    | 56        |
| 4.6.4    | Socioeconomic status of <i>Adivasi Janajati</i> .....            | 56        |
| 4.6.5    | <i>Adivasi Janajatis</i> in the project VDC.....                 | 57        |

|          |  |           |
|----------|--|-----------|
| 4.7      | Gender, disadvantaged and vulnerable groups .....                            | 62        |
| 4.7.1    | Vulnerable communities in Nepal.....   | 62        |
| 4.7.2    | Vulnerable communities in the project area.....                              | 63        |
| <b>5</b> | <b>ASSESSMENT OF PROJECT ADVERSE IMPACTS .....</b>                           | <b>66</b> |
| 5.1      | Land acquiring.....  | 66        |
| 5.1.1    | Impact on agricultural land and loss of production.....                      | 67        |
| 5.2      | Impacts on fishing .....   | 67        |
| 5.3      | Socio-cultural impacts .....   | 68        |
| 5.3.1    | Impacts on physical cultural resources .....                                 | 68        |
| 5.3.2    | Impacts on cremation sites .....   | 68        |
| 5.3.3    | Impacts on religious practices .....   | 69        |
| 5.3.4    | Impacts on customary use of fauna.....                                       | 69        |
| 5.3.5    | Impacts on ritual practices .....  | 69        |
| 5.4      | Impacts on water supply, sanitation and health.....                          | 69        |
| 5.5      | Impacts on occupational health and safety .....                              | 69        |
| 5.6      | Impacts on civic amenities and institutions .....                            | 70        |
| 5.7      | Possible conflict between local and outsider .....                           | 70        |
| 5.8      | Impacts on Adivasi Janajati and disadvantaged groups.....                    | 70        |
| <b>6</b> | <b>ASSESSMENT OF PROJECT BENEFITS AND DEVELOPMENT OPPORTUNITIES .....</b>    | <b>72</b> |
| 6.1      | Health care facilities.....  | 72        |
| 6.2      | Employment opportunities.....  | 72        |
| 6.3      | Strengthening of local economy.....  | 72        |
| 6.4      | Drinking water .....   | 73        |
| 6.5      | Rural electrification.....   | 73        |
| 6.6      | Training and financial services .....  | 73        |
| 6.7      | Education .....  | 74        |
| 6.8      | National level benefits .....  | 74        |
| <b>7</b> | <b>PUBLIC CONSULTATION, PARTICIPATION AND DISCLOSURE .....</b>               | <b>76</b> |
| 7.1      | Project stakeholders identification .....                                    | 76        |
| 7.2      | Mechanisms for stakeholders' participation.....                              | 77        |
| 7.3      | Consultation methodologies.....  | 77        |
| 7.4      | Consultations and stakeholder engagement .....                               | 78        |
| 7.4.1    | Perception and Expectation towards KAHEP.....                                | 79        |
| 7.4.2    | Perceptions and major Concerns of Adivasi Janajati towards the project ..... | 79        |
| 7.5      | Information discloser and dissemination.....                                 | 81        |

|           |   |            |
|-----------|---|------------|
| 7.6       | Local government endorsement.....   | 82         |
| <b>8</b>  | <b>DEVELOPMENT OF PROJECT RESETTLEMENT AND REHABILITATION POLICY .....</b>      | <b>84</b>  |
| 8.1       | Review of relevant laws and policies of Nepal.....                              | 84         |
| 8.1.1     | Resettlement policy in the context of Nepal.....                                | 84         |
| 8.2       | International policy guidelines and conventions.....                            | 89         |
| 8.2.1     | World Bank Policy Guidelines .....  | 89         |
| 8.2.2     | International Labor Organization (ILO) Convention (169), 1989 and UNDRIP .....  | 91         |
| 8.3       | Comparison of GoN and World Bank Policies.....                                  | 91         |
| 8.4       | IFC's Performance Standards on Social and Environmental Sustainability.....     | 92         |
| 8.5       | Compensation and resettlement practices on Hydroelectric Projects in Nepal..... | 93         |
| 8.5.1     | Kulekhani Hydroelectric Project.....  | 93         |
| 8.5.2     | Marsyangdi Hydroelectric Project.....   | 94         |
| 8.5.3     | Khimti Khola Hydroelectric Project.....   | 94         |
| 8.5.4     | Kali Gandaki 'A' Hydroelectric Project.....                                     | 94         |
| 8.6       | Resettlement and rehabilitation policy framework for KAHEP.....                 | 95         |
| 8.6.1     | KAHEP resettlement policy.....  | 95         |
| 8.6.2     | Compensation policy for KAHEP.....  | 97         |
| <b>9</b>  | <b>PROPOSAL FOR MITIGATION AND DEVELOPMENT MEASURES .....</b>                   | <b>100</b> |
| <b>10</b> | <b>CONCLUSION .....</b>   | <b>106</b> |
|           | <b>BIBLIOGRAPHY .....</b>   | <b>108</b> |

**List of Annexes****No. of pages**

|         |   |    |
|---------|---|----|
| ANNEX A | PROJECT LOCATION MAP .....                        | 1  |
| ANNEX B | PROJECT LAYOUT MAP .....                          | 1  |
| ANNEX C | CHECKLISTS .....                                  | 16 |
| ANNEX D | SUMMARY OF FOCUS GROUP DISCUSSIONS.....           | 36 |
| ANNEX E | LIST OF PARTICIPATIONS IN CUNSLTATIONS/FGDS ..... | 12 |

| <b>List of tables</b>   | <b>Page No.</b> |
|---|-----------------|
| Table 2-1: Salient features of KAHEP.....   | 11              |
| Table 3-1: Study team for SA .....  | 18              |
| Table 3-2: Impacted settlements in the project affected VDCs.....                             | 20              |
| Table 4-1: Demographic features of EDR .....  | 26              |
| Table 4-2: Health and sanitation status of EDR.....   | 27              |
| Table 4-3: Various development indicators for EDR.....  | 27              |
| Table 4-4: Demographic features of the project districts .....                                | 28              |
| Table 4-5: Caste/ ethnic composition of the project districts.....                            | 29              |
| Table 4-6: Age structure of the project districts.....  | 30              |
| Table 4-7: Five major languages spoken in the project districts .....                         | 31              |
| Table 4-8: Land use patterns in Panchthar and Taplejung districts .....                       | 31              |
| Table 4-9: Area, production and yield of major crops in the project districts, 2008/2009..... | 32              |
| Table 4-10: Distribution of health institutions in project districts (2005/06).....           | 33              |
| Table 4-11: Demographic characteristics of the project affected VDCs.....                     | 35              |
| Table 4-12: Age structure of the population of the project affected VDCs.....                 | 36              |
| Table 4-13: Literacy population (6 years and above) of project VDCs.....                      | 36              |
| Table 4-14: Population by mother tongue and religion of the project VDCs.....                 | 37              |
| Table 4-15: Demographic features of surveyed households.....                                  | 38              |
| Table 4-16: Educational status of population (six years and above) .....                      | 40              |
| Table 4-17: Households by religion and mother tongue .....                                    | 40              |
| Table 4-18: Type of house by ethnicity.....   | 41              |
| Table 4-19: Surveyed households by occupation.....  | 42              |
| Table 4-20: Households by land holding sizes.....   | 42              |
| Table 4-21: Total landholding by caste/ethnic groups in surveyed households .....             | 43              |
| Table 4-22: Rented-in and Rented-out land by cast and ethnicity.....                          | 43              |
| Table 4-23: Livestock ownership by caste/ethnic groups.....                                   | 44              |
| Table 4-24: Average annual household income by caste/ethnic groups.....                       | 44              |
| Table 4-25: Annual expenses on different items by caste/ethnic groups.....                    | 45              |
| Table 4-26: Households by source of loan by caste/ ethnicity.....                             | 46              |
| Table 4-27: Households food sufficiency by caste/ ethnicity .....                             | 46              |
| Table 4-28: Distribution of migrants of surveyed HHs by destination and VDC.....              | 47              |
| Table 4-29: Household population by skill and caste/ethnicity .....                           | 47              |
| Table 4-30: Desired/preferred skill trainings by households .....                             | 48              |
| Table 4-31: Affected HHs by sources of drinking water and caste/ethnicity.....                | 48              |
| Table 4-32: Households by toilet facility and caste/ethnicity.....                            | 49              |
| Table 4-33: Households by source of lighting by caste/ ethnicity.....                         | 49              |

|  |     |
|--|-----|
| Table 4-34: Households by mode of communication and VDC .....  | 50  |
| Table 4-35: Households by occurrence of diseases during previous year .....                                | 50  |
| Table 4-36: Households by health seeking behaviors and VDC .....   | 50  |
| Table 4-37: Households preference over maternity health care by VDC.....                                   | 51  |
| Table 4-38: Classification of <i>Adivasi Janajatis</i> .....   | 57  |
| Table 4-39: Indigenous Population in the project VDCs, 2001 .....  | 58  |
| Table 4-40: Cultural and archaeological sites of <i>Adivasi Janajati</i> located in the project VDCs ..... | 62  |
| Table 5-1: Land required for construction of project (in ha) .....   | 66  |
| Table 5-2: Annual production in cultivated land in terms of agricultural production.....                   | 67  |
| Table 5-3: Loss of trees in private land.....  | 67  |
| Table 7-1: Expectation of project benefits from Local residents.....                                       | 79  |
| Table 7-2: Details of Focused Group Discussion with <i>Adivasi Janajati</i> .....                          | 80  |
| Table 8-1: Comparison between World Bank Policy and the Government Legal Framework .....                   | 91  |
| Table 8-2: Principles and corresponding guidelines to execute resettlement policy .....                    | 95  |
| Table 9-1: Mitigation measures .....   | 101 |
| Table 9-2: Development measures for vulnerable groups .....  | 104 |

## List of photos

## Page No.

|  |    |
|--|----|
| Photo 1: Proposed headworks area .....   | 8  |
| Photo 2: Proposed surge shaft area.....  | 10 |
| Photo 3: Proposed powerhouse location at right bank of Piple Khola near the confluence with Tamor<br>River ..... | 10 |
| Photo 4: Household survey carried out in Amarpur-6.....  | 21 |
| Photo 5: Consultation meeting with Kabeli Concern Group Amarpur-6.....   | 22 |
| Photo 6: Kabeli Bazar on the left bank of Kabeli River .....   | 34 |
| Photo 7: Jogidanda downstream settlement.....  | 34 |
| Photo 8: A <i>Kachhi Majhi</i> House in Majhitar, Pinasi.....  | 41 |
| Photo 9: A <i>Rai</i> woman fetching water from natural well ( <i>Kuwa</i> ).....                                | 49 |
| Photo 10: A <i>Dhami</i> in Majhitar, Pinasi .....   | 51 |
| Photo 11: <i>Limbu Adivasi Janajati</i> .....  | 58 |
| Photo 12: <i>Tamang Adivasi Janajati</i> .....   | 59 |
| Photo 13: <i>Srijanga</i> Script.....  | 60 |
| Photo 14: Interaction with <i>Dalits</i> at Amarpur-4, Bhaluchowk.....   | 63 |
| Photo 15: Panchayan Shivalaya Temple, Kabeli Bank.....   | 68 |
| Photo 16: Rest house ( <i>Pati</i> ) at Pinasi Ghat.....   | 68 |
| Photo 17: Trout fish required for rituals.....   | 69 |
| Photo 18: Joint group discussion with <i>Adivasi Janajati</i> of the project affected VDCs.....                  | 80 |



| <b>Lists of charts</b>                                       | <b>Page No.</b> |
|--|-----------------|
| Chart 4-1: Religion of the project districts .....           | 30              |
| Chart 4-2: Family structure of the surveyed households ..... | 39              |
| Chart 4-3: Household strategy to food sufficiency .....      | 47              |

| <b>List of figure</b>                                   | <b>Page No.</b> |
|---|-----------------|
| Figure 2-1: Location of the KAHEP in national map ..... | 7               |

## List of abbreviations and acronyms

|      |   |
|------|---|
| ACRP | Acquisition, Compensation and Rehabilitation Plan |
| ADB  | Asian Development Bank                            |
| AP   | Affected Person                                   |
| ARI  | Acute Respiratory Infections                      |
| BOOT | Build, Own, Operate and Transfer                  |
| BP   | Bank Procedure                                    |
| BPC  | Butwal Power Company                              |
| CA   | Constitutional Assembly                           |
| CBD  | Convention on Biological Diversity                |
| CBO  | Community Based Organizations                     |
| CBS  | Central Bureau of Statistics                      |
| CCV  | Community Consensus Valuation                     |
| CDC  | Compensation Determination Committee              |
| CDMA | Code Division Multiple Access                     |
| CDO  | Chief District Officer                            |
| CF   | Community Forest                                  |
| CFC  | Compensation Fixation Committee                   |
| CFUG | Community Forest User Group                       |
| cm   | Centimeter  |
| CPR  | Common Property Resource                          |
| DDC  | District Development Committee                    |
| DFO  | District Forest Office                            |
| dia  | Diameter  |
| DoED | Department of Electricity                         |
| EDR  | Eastern Development Region                        |
| EIA  | Environmental Impact Assessment                   |
| EPA  | Environmental Protection Act                      |
| EPR  | Environmental Protection Rules                    |
| FGD  | Focus Group Discussion                            |
| FPIC | Free Prior Informed Consent                       |
| GoN  | Government of Nepal                               |
| GRC  | Grievances Redress Committee                      |
| Ha   | Hectare   |
| HCE  | Hydro-Consult Engineering Limited                 |
| HCPL | Hydro Consult Private Limited                     |
| HDI  | Human Development Index                           |

|                   |   |
|-------------------|---|
| HH                | Household   |
| HPI               | Human Poverty Index   |
| hrs               | Hours   |
| ICCPR             | International Covenant on Civil and Political Rights                |
| ICIMOD            | International Center for Integrated Mountain Development            |
| IEE               | Initial Environmental Examination                                   |
| IIPP              | International independent power producer                            |
| ILO               | International Labour Organization                                   |
| INPS              | Integrated Nepal Power System                                       |
| IP                | Indigenous People   |
| ISRSC             | International Sector Research and Study Centre                      |
| IUCN              | World Conservation Union  |
| IVCDP             | Indigenous and Vulnerable Community Development Plan                |
| KAHEP             | Kabeli-A Hydroelectric Project                                      |
| KEL               | Kabeli Energy Limited   |
| kg                | Kilogram  |
| km                | Kilometer   |
| kV                | Kilovolt  |
| kW                | Kilowatt  |
| kWh               | Kilowatt hour   |
| LAA               | Land Acquisition Act  |
| LACFC             | Land Acquisition and Compensation Fixation Committee                |
| LF                | Leasehold Forest  |
| LFUG              | Leasehold Forest User Group   |
| LRA               | Land Reform Act   |
| LRO               | Land Revenue Office   |
| m                 | Meter   |
| m/s               | Meter per second  |
| m <sup>2</sup>    | Square meter  |
| m <sup>3</sup> /s | Cubic meter per second  |
| masl              | Meter above sea level   |
| MT                | Metric ton  |
| MW                | Mega Watt   |
| NEA               | Nepal Electricity Authority   |
| NEFIN             | Nepal Federation of Indigenous Nationalities                        |
| NFDIN             | National Foundation for the Development of Indigenous Nationalities |
| NGO               | Non-Governmental Organization                                       |
| NHRC              | National Human Rights Commission                                    |

|        |  |
|--------|--|
| NPC    | National Planning Commission                                   |
| NTFP   | Non Timber Forest Product                                      |
| OP     | Operational Policy   |
| PAF    | Project Affected Family  |
| PAP    | Project Affected People  |
| PCI    | Per Capita Income  |
| PCPD   | Public Consultation, Participation and Disclosure              |
| PDA    | Project Development Agreement                                  |
| PPE    | Personal Protective Equipments                                 |
| PRO    | Project Relation Office  |
| PRoR   | Peaking Run-of-the-river                                       |
| SA     | Social Assessments   |
| SAP    | Social Action Plan   |
| SCP    | Safe Construction Practices                                    |
| SIA    | Social Impact Assessment                                       |
| SLC    | School Leaving Certificate                                     |
| SPSS   | Statistical Package for Social Science                         |
| STD    | Sexually Transmitted Disease                                   |
| ToR    | Terms of Reference   |
| UNDP   | United Nations Development Program                             |
| UNDRIP | United Nations Declaration on the Rights of Indigenous Peoples |
| VAW    | Violence Against Women   |
| VDC    | Village Development Committees                                 |
| WN     | Ward Number  |
| ZC     | Zonal Commissioner   |

## Definition of the Nepali terms

|                             |  |
|-----------------------------|--|
| <i>Abal</i>                 | In Nepal, land are classified into four major categories viz. <i>Abal</i> , <i>Doyam</i> , <i>Sim</i> and <i>Chahar</i> according to the productivity of the land. According to this classification <i>Abal</i> land is the best quality of land with good and moist soil. The entire plot can be irrigated by means of irrigation canal or other means and where water used once stay for three to four days.   |
| <i>Adivasi Janajati</i>     | A tribe or community having its own territory, own mother tongue, traditional rites and customs, distinct cultural identity, distinct social structure and written or unwritten history (NFDIN Act 2001). It is further divided into Hill <i>Adivasi Janajati</i> and <i>Terai Adivasi Janajati</i> .  |
| <i>Ardha-pakki Ghar</i>     | A semi-permanent house. Central Bureau of Statistics (CBS) Nepal defines it as a category of house where either the wall or the roof is constructed with permanent construction materials and other is constructed with temporary materials.   |
| <i>Aushi</i>                | New moon day.  |
| <i>Bari</i>                 | These are the un-irrigated lands where the cultivation of rain-fed crops like maize, millet and pulses is done.  |
| <i>Brahmin (Bahun)</i>      | Highest caste of the four major castes of Hindu caste system.  |
| <i>Chahar</i>               | Land which cannot be irrigated by means of irrigation channels and is dependent upon rainfall and water does not stay at all.  |
| <i>Chhetri (Kshatriyas)</i> | The second highest caste of the four major castes of Hindu caste system.   |
| <i>Dalit</i>                | <i>Dalit</i> is a self-designation for a group of people traditionally regarded as untouchables. The <i>Dalits</i> are a mixed population which are divided into two major groups, i.e. Hill cast <i>Dalits</i> ( <i>Kami</i> , <i>Sarki</i> , <i>Damin</i> , <i>Gaine</i> and <i>Badi</i> ) and <i>Terai cast Dalits</i> ( <i>Tamata</i> , <i>Khatwe</i> , <i>Cahamar</i> , <i>Dushad</i> , <i>Mushaha</i> , <i>Batar</i> , <i>Dhobi</i> , <i>Dom</i> and <i>Halkhor</i> ). |
| <i>Dhamil/Jhakri</i>        | Traditional shamanic healers who are supposed to exort evil spirit from the body of sick people.   |
| <i>Doyam</i>                | Good quality land with moist soil. Only 3/4th of the plot can be irrigated by means of irrigation canal or other means and water used once, stays on the land for 2-3 days.  |
| <i>Ganga</i>                | A Hindu holly River.   |
| <i>Ghat</i>                 | Hindu cremation place.   |
| <i>Guthi</i>                | Refers to the land allocated for the purpose of covering certain religious, charitable and cultural or social function.  |
| <i>Halliya</i>              | Agricultural bounded labourer who works on another person's ( <i>Jamindar</i> ) land. It is officially abolished but still exists in the western part of Nepal.  |

|                              |  |
|------------------------------|--|
| <i>Hat Bazar</i>             | Temporary markets that are opened on the particular week or days or occasions (national and local festivals).  |
| <i>Hill Adivasi Janajati</i> | Hill <i>Janajati</i> includes 24 caste groups, which are <i>Bankariya, Hayu, Kusbadiya, Kusunda, Lepcha, Surel, Baramu, Thami (Thangmi), Chepang, Bhujel, Dura, Pahari, Phree, Sunuwar, Tamang, Chantyal, Gurung (Tamu), Jirel, Limbu (Yakthumba), Magar, Rai, Yakkha, Hyolmo</i> and <i>Newar</i> .   |
| <i>Jamindars</i>             | The local landlords.   |
| <i>Kacchi Ghar</i>           | A temporary house. CBS Nepal define it as a type of house that is made with non durable materials like wooden flake, bamboo, straw/thatch, mud. Unbaked bricks are mainly used in walls and roof.  |
| <i>Kharbari</i>              | A marginal land that is used to grow grasses and fodder trees.   |
| <i>Khet</i>                  | These are the irrigated lands, where paddy is the primary crop.  |
| <i>Kipat</i>                 | Traditional land tenure system. In this system, a <i>Kipat</i> owner derives rights by virtue of his membership in a particular ethnic group, and/or its location in a particular area.  |
| <i>Kipatiya</i>              | Individual or community holding <i>Kipat</i> .   |
| <i>Kirat</i>                 | <i>Kirat</i> or <i>Kirati</i> (also spelled as <i>Kirant and Kiranti</i> ) are indigenous ethnic groups of the Himalayas (mid-hills).  |
| <i>Kirat religion</i>        | Religion by <i>Kirat</i> people which is based on of shamanism.  |
| <i>Kuse Aushi</i>            | A religious festival that falls in new moon day of 5 <sup>th</sup> month, <i>Bhadra</i> (August/September) of the Nepali Year. This festival is observed in the commemoration and respect of the Father.   |
| <i>Makar Sakaranti</i>       | A religious festival that falls on the first day of the 10 <sup>th</sup> month i.e. <i>Magh</i> (15 <sup>th</sup> January) of the Nepali Year. <i>Sankranti</i> is the Sanskrit word in Nepalese and Indian Astrology and refers to the transmigration of the Sun from one <i>Rashi</i> (sign of the zodiac) to another. <i>Makar Sankranti</i> refers to the transition of the Sun from <i>Dhanu Rashi</i> (Sagittarius) to <i>Makar Rashi</i> (Capricorn). |
| <i>Matatirtha Aushi</i>      | Festivals that falls on the new moon day of the first month i.e. <i>Baisakh</i> (April/May), of the Nepali Year. This festival is observed in the commemoration and respect of the mother.   |
| <i>Mechi Zone</i>            | One of the 14 zones of Nepal that lies in the Eastern part of the country.   |
| <i>Muri</i>                  | Measurement of unit of the volume of crops.  |
| <i>Nuwagi</i>                | A rituals performed during the harvesting of new crops.  |
| <i>Pakho</i>                 | A generic term used to denote the <i>Bari</i> where maize and millet is cultivated.  |

|                               |   |
|-------------------------------|---|
| <i>Pakki Ghar</i>             | A permanent house. According to CBS Nepal, it refers to a house with walls and roof made of permanent construction material like cement, bonded bricks, concrete, stone, slate tile and galvanized sheet.   |
| <i>Parbati</i>                | Hindu Goddesses.  |
| <i>Pati</i>                   | Rest house made for the traveller especially near the religious and cultural places.  |
| <i>Raikar</i>                 | Land on which taxes are payable to the government and are listed in the official recodes. Rights on <i>Raikar</i> land are limited to occupancy rights, vis-a'-vis state. However, these rights can be freely sold or transmitted to any person. It is similar to ownership in practice |
| <i>Ropani</i>                 | Commonly used unit of measurement of area of land in the hills of Nepal. One Ropani is equals to 5476 square feet or 508.72 square meters.  |
| <i>Sanasti and Dhuli Puja</i> | A rituals performed by the <i>Majhi</i> community.  |
| <i>Shiva</i>                  | Hindu God also known as <i>Mahadev</i> .  |
| <i>Sim</i>                    | Land where only half of the plot can be irrigated by means of irrigation channels or other means and water used once stays for only one day.  |
| <i>Srijanga script</i>        | Written script of <i>Kirat</i> language, a branch of Sino-Tebetan language family.  |
| <i>Sudeni</i>                 | Local midwife.  |
| <i>Tamor Basa</i>             | <i>Majhi's</i> deity worship during <i>Ubhauri</i> .  |
| <i>Terai Adivasi Janajati</i> | <i>Terai Adivasi Janajati</i> includes <i>Kisan</i> , <i>Meche (Bodo)</i> , <i>Dhanuk (Rajbansi)</i> , <i>Jhangad</i> , <i>Santhal (Satar)</i> , <i>Dhimal</i> , <i>Gangai</i> , <i>Rajbansi (Koch)</i> , <i>Tajpuriya</i> and <i>Tharu</i> .   |
| <i>Thakurani</i>              | <i>Majhi's</i> deity worship during <i>Ubhauri</i> .  |
| <i>Tukimara</i>               | <i>Tukimara</i> is an electronic torch used for lighting.   |
| <i>Ubahuli</i>                | Also known as <i>Sakela/Sakewa Ubhauri</i> , a festival celebrated during crop plantation season by the <i>Kirat</i> people of eastern Nepal.   |
| <i>Udyouli</i>                | Also known as <i>Sakela/Sakewa Udyouli</i> , a festival celebrated during crop harvesting season by the <i>Kirat</i> people of eastern Nepal.   |

## **EXECUTIVE SUMMARY**

### **I DESCRIPTION OF THE PROJECT**

Kabeli Energy Limited (KEL) is the proponent of Kabeli-A Hydroelectric Project (KAHEP). KAHEP was opened for global bidding to develop under Build, Own, Operate and Transfer (BOOT) model. A joint venture led by Butwal Power Company Limited won the bid and formed KEL to develop the project. KEL, in the status of a Project Company, signed a Project Development Agreement (PDA) with Department of Electricity (DoED) for the development of KAHEP.

KAHEP is a 37.6 MW peaking run-of-the-river hydropower project on the Kabeli River in Eastern Nepal. KAHEP is located about 800 km east of Kathmandu. Kabeli River forms a natural border between the Panchthar and Taplejung districts. The project area of KAHEP covers four Village Development Committees (VDCs), namely, Amarapur and Panchami of Panchthar district and Thechambu and Nangkholyang of Taplejung district. KAHEP has been classified by the World Bank as a 'Category A' project. Hydro-Consult Engineering Limited (formerly Hydro Consult Private Limited) has carried out the Social Assessment (SA) in accordance with the Nepal Government's statutory framework, international conventions the government of Nepal has ratified, such as International Labor Organization Convention 169, World Bank's Policies and Guidelines and International Finance Corporation (IFC)'s Performance Standards. On the basis of SA study a Social Action Plan (SAP) report is prepared.

The major project features of the KAHEP are diversion barrage, side intake, settling basin, headrace tunnel, surge shaft, surface penstock and surface powerhouse. The diversion barrage of 14.3 height with provision for ponding will be constructed at 2.5 km upstream of Kabeli Bazaar in Dhuseni village of Amarapur VDC on the left bank and Khudurke of Thechambu VDC on the right bank. The water will be conveyed by 60.2 m long pair tunnels followed by a 4326.8 m long headrace tunnel to a surface powerhouse located adjacent to the Piple Khola on the left bank of the Tamor River.

About 600 to 800 of skilled, semi skilled and unskilled human resources are expected to be required during the proposed project implementation. The overall estimated construction time is about 4 years. It is expected that the implementation of this project will help to reduce the power shortage to some extent by providing electricity to the Integrated Nepal Power System (INPS).

### **2 OBJECTIVES OF THE STUDY**

The overall objective of SA study is to assess and analyze the likely social issues arising from the implementation of the project and to recommend mitigation and enhancement measures for adverse and beneficial impacts. The SA report will act as a main document to prepare SAP during the detailed project planning exercise. An interdisciplinary core team of experts carried out the SA study.

### **3 APPROACH AND METHODOLOGY OF THE STUDY**

An issue-focused multi stage study approach has been adapted for the study. Series of the consultation with the technical team and representative of the World Bank before and the after the field visit were made to exchange information and highlight potential issues relevant for the SA. Both primary and secondary source of data have been used as required. The primary data were collected through household survey, Focused Group Discussion (FGD), in depth interview and consultation meetings with the various stakeholders. Comprehensive household Interview schedule for the potentially affected households and specific checklists for FGD were used to elicit the information. Similarly, review of published and unpublished reports like CBS reports, District Development Committee (DDC) and VDC profiles, all the relevant information about the project VDCs and project district collected by various organization along with the Environmental Impact Assessment (EIA) study carried out by Nepal Consult (P) Limited in 1998 were the important Source of secondary data for this SA study.



## 4 EXISTING SOCIO-CULTURAL ENVIRONMENT

### 4.1 The Eastern Development Region

Eastern Development Region (EDR) is one of Nepal's five development regions. The total population of this region is 5,344,476 (2,670,622 male and 2,673,854 female) having population density 188 person/km<sup>2</sup> with annual population growth rate of 1.84% per year. The average family size for this region is 5.28. The *Adivasi Janajati* groups (indigenous people) constitute about 48.5% of the population followed by Hindu high caste groups (25.3%), *Dalits* (10.7%) and others various cast groups (15.5%). About 84.3% households have access to safe drinking water and 46.1% have the access to toilet. Firewood and Kerosene are the major household energy sources for cooking and lighting respectively. The literacy rate of EDR is 55.7 % (CBS, 2001).

### 4.2 Project districts

The project districts, Panchthar and Taplijung, provide habitat to about a population of 3,36,654 having population density 163 person/km<sup>2</sup> and 36.39 person/km<sup>2</sup> respectively. The average population growth rate for Panchthar and Taplejung is 1.0 % 1.45 % respectively. *Limbu* constitute the highest percentage of population in both the districts. *Kirat* and Hindu are the two major religions of the project districts. The literacy rate for Taplejung and Panchthar districts is 55.40% and 52.43% respectively. Both the districts have limited transportation and electricity facilities. The overall economic structure of the project districts is characterized by a mixture of farm and nonfarm activities. Farm activities are subsistence in nature that are characterized by fragmented land-holding and low farming inputs. Only about 7.58% of the land in Taplejung district and about 48% in Panchthar district can be used for agricultural cultivation. Paddy, maize, wheat, millet, and barley are the major crops of these districts. Remittance, small trade and businesses, cottage industries, agro and forest based enterprises and service represent the major non-farm activities of the project districts. Remittance plays a major role in the overall economy of these districts.

### 4.3 Project VDCs

Amarpur and Panchami VDCs of Panchthar district and Thechambu and Nangkholyang VDCs of Taplejung district are the project affected VDCs. Major Project structures like headwork, surge shaft, waterways and powerhouse are located in Amarpur VDC. Population of these project VDCs is 21,098 (48.1% male and 51.88% female) having sex ratio of 1:1.07. Average household size is 5.54. The project VDCs has mixed communities including various caste and ethnicities. These communities reflect a wide range of cultural, linguistic and religious background. *Adivasi Janajati (Limbu, Rai, Tamang, Newar and Majhi)* constitute about 53.38% followed by 39.47% Hindu High Caste (*Brahmin/Chettri*) and 6.13% *Dalits (Damai, Kami and Sarki)*. *Limbu* is the dominant group in all four VDCs. Nepali, *Limbu* and *Bantawa* are the major mother languages spoken by the local population. Similarly, Hindu (53.06%), *Kirat* (37.05%) and Buddhism (9.52%) are the major religions practiced by the local residents. The literacy rate is 49% (55.3% male and 44.7% female). Like the project districts, the overall economic structure of these project VDCs is characterized by a mixture of farm and nonfarm activities.

### 4.4 Surveyed households

In total 46 households from the impact zone of three project VDCs (Amarpur 30 HHs, Panchami 2 HHs and Thechambu 14 HHs) were taken for detailed socio-economic survey. The total population of the surveyed household is 363 (51.24% male and 48.76% female) with an average household size of 7.89 that is higher than the national and project VDCs average. Majority of the households (62%) represent joint family structure followed by nuclear (29%) and extended (9%). About 50% of the households follow *Kirat* religion followed by 34.78% Hindu and 15.22% Buddha religion. The literacy rate of the surveyed household is 84.39%, that is better compared to the average literacy rate of the project VDCs and districts.

About 64.46% of the populations are economically active and most of them are involved in subsistence agriculture. About 43.48% reported agriculture as their only one livelihood source whereas rest of the households are involved in secondary occupations like foreign employment, services and daily wages in addition to agriculture. The average land holding of the surveyed

household is 1.59 ha that is higher than the districts (Panchthar 0.81ha and Taplejung 0.89 ha) and national averages (0.80 ha). In terms of caste and ethnicity, land holding is the highest among *Limbu* (1.74 ha/HHs) and the lowest among *Tamang* (1.24 ha/HHs). Of the total cultivated land, about 54.70% is *Khet* (irrigated land) and 45.29% *Bari* (non irrigated land). Paddy, maize, wheat, and pulses are the major crops produced in the area. Households rear cattle, goats, buffalo, pigs, duck and poultry as an important subsistence activity and source of income. The average annual income of these households is NRs. 163,852.17. It is highest (NRs 301,100.00) for *Brahmin* and lowest (NRs. 86,000.00) for *Majhi*. This average household income is better in comparison to the national figure. Even though most of the households are engaged in agriculture, remittance has the highest contribution (44.92%) in the income of these households. The average annual expenditure is NRs. 121,921.00 that is highest for *Brahmin* (NRs. 225,648.00) and lowest for *Majhi* (NRs. 77,476.00). Among the various expenditure sources, people spent highest amount on food (30.52%) followed by clothing, health and education.

The situation of sanitation in the project areas except Pinasi village is satisfactory. About 65.21% households have access to safe drinking water and about 87% of households have toilet facilities. Typhoid, asthma, anemia, blood-pressure, sugar, lung related diseases and worms are the common disease among the surveyed households. Health facilities in the project area consist of only few health post and sub-health posts. Majority of the population prefer *Dhamil/Jhankri* (local healers) for treatment. Firewood is the only fuel used for cooking by all the households. Most of the households (87%) have the access to telephone/mobile service provided through various service provider companies. The Mechi Highway is the only one road network that connects the area with respective district headquarters.

#### 4.5 *Adivasi Janajati*

The project VDCs as well as project area is a mixed community including various caste and ethnicities. *Limbu*, *Tamang* and *Majhi* are the *Adivasi Janajati* groups that are directly affected by the project activities. These communities reflect a wide range of cultural, linguistic and religious background. Among them, *Adivasi Janajati* groups have special relationship with the land and territory. They have their attachment to the natural resources and show a sense of ancestral territory.

#### 4.6 **Gender, disadvantaged and vulnerable groups**

In the context of KAHEP vulnerability, refers to households and communities that may have considerable difficulties in participating in the livelihood restoration process and benefit sharing due to serious lack of required skills, resources, experience and organization. In the project area Indigenous Peoples, *Dalits* and women are regarded as the disadvantaged and vulnerable groups.

### 5 **ASSESSMENT OF PROJECT ADVERSE IMPACTS**

The execution of KAHEP will have an impact on four VDCs-Amarpur and Panchami of Panchthar district and Thechambu and Nangkholyang of Taplejung district.

- **Land acquiring:** The project will require 47.718 ha of land (22.508 ha permanent and 25.21 ha temporary). In terms of land use, 61.10% is the riverine area including riverbeds, river flood plains and elevated banks. Agricultural land (cultivated and marginal) required is 35.60 % followed by 3.30% of the forestland including Community, communal and Leasehold Forests. Of the land use types acquired permanently, only 7.678 ha is agricultural land and 1.57 ha is forest land. Out of total 1.57 ha forest land required, 0.21 ha belongs to Thulo Dhuseni CF, 0.12 belongs to Kabeli Garjite CF, 0.97 belongs to LF and 0.27 is communal forest land. The agricultural land required temporarily are the sites of construction camps and storage facilities totaling to 9.31 ha. As per the local production practice, about 14.784 Metric Ton (MT) of agricultural production will be annually lost due to permanent land acquisition. The project will remove 141 trees and poles from the private lands.
- **Impact on Fishing:** Diversion of the Kabeli River will have effects on riverine fish resources of the Kabeli from November through June for nearly 5.6 kilometers downstream of dam. There are no professional fishermen in this zone. However, occasional fishing by the

downstream communities to collect fish for household consumption will experience some impact from the reduced flow.

- **Socio-Cultural Impacts:** One rest house and two ritual sites of *Majhi* at the powerhouse site are in close proximity of construction that will experience induced pressure. Similarly, the Panchyan Shivalaya Temple at Kabeli Bazar and three cremation sites in the dewater zone (5.6 km) will be affected by the reduced flow. Moreover, the reduced flow will have impacts on religious practices and fish species that are used for customary and ritual practices by *Adivasi Janajati* and local population.
- **Construction related/contractor operation related impacts:** During construction, the project area will witness an increase in population due to an influx of workers and service providers. The increased population will further stress the local water supply, health, and sanitation facilities, especially around the construction camps. In addition, lack of proper sanitary measures and increases in water pollution and waste can lead to outbreak of epidemics and diseases such as jaundice, typhoid and sexually transmitted diseases. The construction activities such as blasting, using heavy equipment and working in dangerous areas may cause accidents and injuries. The influx of large number of people with different social and cultural backgrounds and the sudden inflow of cash at the same time may result into social abuse such as alcohol consumption, prostitution (illegal) etc. These impacts may lead to resentment and friction among local residents and the incoming workers that will affect the peace and harmony of the project area.
- **Impact on Adivasi Janajati and disadvantage groups:** The *Adivasi/Janjati* and disadvantaged groups of the project area, though belong to a different ethnicity and/or group, share common approach and patterns in their economic and livelihood activities. The project area is a mixed community where *Adivasi/Janjati* and other groups live together. The Indigenous Peoples, women, children and vulnerable groups of the project area are expected to experience the similar physical and economic impacts from the project in spite of their caste, and there are no specific impacts especially for this group. However, the magnitude of these impacts for these groups might be higher because of their low marketing skills and lack of professional competencies.

## 6 ASSESSMENT OF PROJECT BENEFITS AND DEVELOPMENT OPPORTUNITIES

KAHEP facility will result in many community benefits at the national, regional and community levels. In addition to the resettlement and compensation package that each directly affected household and person will receive, KAHEP is committed to provide community benefits in a sustainable manner by implementing the SAP. The SAP measures are expected to benefit the wider communities in the project area, beyond those individuals and households who have been or will be directly affected.

KAHEP is committed to strengthen health, drinking water and education facilities so that the wider project-affected-population can enjoy improved health care, drinking water and educational services. KAHEP will provide training and financial services to develop and strengthen the existing cooperatives, savings, and credit association in the project area. It is expected that a minimum of 50 % of the unskilled workforce will originate from the affected villages for the construction phase of the project. KAHEP, in partnership with potential local NGOs, will develop skills refresher courses to meet the needs of interested project affected persons. The project will cause an economic spin-off in the project impact area.

The project will provide 37.6 MW of power to the much needed electricity grid of Nepal. This will have large positive impact on the macro-economic growth of the country and will reduce load shedding. Moreover, hydropower is a source of clean renewable energy. As per the Electricity Act, 50% of the royalty that Government of Nepal (GoN) will receive during the 30 year license period will be given to the districts where the project is located. KEL is in discussion with the government and the World Bank to explore the options of rural electrification. KAHEP will undertake a need

assessment within the affected villages, and identify individual households who have desire and have ability to pay for the electricity.

## **7 PUBLIC CONSULTATION, PARTICIPATION AND DISCLOSURE**

A Public Consultation, Participation and Disclosure (PCPD) framework is developed for the KAHEP to develop and maintain avenues of communication between the project and stakeholders in order to ensure that their views and concerns are incorporated into project design and implementation with the objectives of reducing or offsetting negative impacts and enhancing benefits from the project. PCDP constitutes of following activities:

- Project stakeholders identification;
- Mechanism for stakeholders' participation;
- Consultation methodologies;
- Consultations and stakeholder engagement;
- Information disclosure and dissemination; and
- Local government endorsement.

## **8 DEVELOPMENT OF PROJECT RESETTLEMENT AND REHABILITATION POLICY**

The resettlement principles of KAHEP adopted the Land Acquisition Act, 2034 (1977), the requirements of the World Bank policy on Involuntary Resettlement, Indigenous People and other relevant acts, policies and guidelines related to hydropower development. The Resettlement Policy has been prepared based on the general findings of the census survey of APs, FGDs with local stakeholders, field visits, and meetings with various affected persons residing in the different locations in the project area. The principals adopted to execute the resettlement policy of KAHEP includes: (i) minimization of the human displacement and resettlement, (ii) identification of all project impacts, (iii) resettlement planning, budgeting and implementation, (iv) meaningful public consultation, (v) assisting to restore, and improve the livelihoods of the affected persons, (vi) special consideration for indigenous community and vulnerable groups, (vii) procedures for grievance and monitoring, (viii) accounting the resettlement planning with regional socio-economic development context and (ix) complying resettlement policy with all legal and policy provisions. Consequently, the compensation policies of KAHEP have been formulated as a part of the overall policy on resettlement/relocation. This covers the identification of types of loss and corresponding modes of payment of compensation to the project affected parties.

## **9 PROPOSAL FOR MITIGATION AND DEVELOPMENT MEASURES**

Landowners of the permanently acquired lands of project components and project facility sites will be compensated in cash at the replacement cost. The counseling services and trainings on scientific agriculture technologies will be provided to the affected parties. The forest loss will be compensated on the basis of the government policy.

To mitigate the potential impacts caused by the reduced water flow, 10 % of the mean monthly flow of the driest month will be released downstream during the dry season. Additionally, the environmental flows thus released will be canalized at the stretch of the cremation. The fish ladder will be constructed for the free migration of the fishes and a cold water fish hatchery will be constructed. The project will support livelihood restoration of affected households due to reduced water flows through employment, skill training and capacity development.

The project will allocate adequate funds for improvement of existing infrastructure as needed. Provision of better and higher levels of services including water supply, sanitation, health and drainage will be carried out. Project will allocate funds for the support of schools and health posts. To prevent and mitigate labor force impacts, developing measures will be proposed with the participation of affected communities and incorporating these into contractual implementation arrangements with

adequate financial provision. The local people will be given priority for jobs during the construction period.

For the occupational health and safety issues an emergency response contingency plan will be prepared and the contractor(s) will be made responsible to adopt Safe Construction Practices (SCP) in order to minimize construction related accidents. The pondage area will be fenced or closed as a precautionary measure. Similarly, warning signs/posts, siren system will be installed to inform the local people about the potential dangerous areas.

In order to address impact on the vulnerable and disadvantage group, an Indigenous and Vulnerable Community Development Program will be designed and implemented as a part of SAP. It is recommended to implement the project under the condition that the social safeguard measures outlined in the SAP are fully and effectively implemented followed by its monitoring process in action.

## **CHAPTER I**

# **INTRODUCTION OF THE PROJECT**

## I INTRODUCTION OF THE PROJECT

Hydroelectricity generation projects in Nepal and elsewhere are facing increasing competition for use of the water resources from irrigation, urban use, tourism, conservation and recreation. They are being challenged over the disruption they cause to existing communities. The hydroelectric power generation requires the construction and operation of large-scale production facilities (dams, reservoirs and canals/tunnels) and the huge amount of capital investment. The development of such projects is usually justified in terms of the benefits they are expected to provide for the national economy, yet many of their economic, social, cultural and environmental costs are borne by the regions and rural districts in which they are located. Hydro electricity developers therefore need to bring affected communities on board through an impact assessment process, including Social Assessment (SA) that contribute to the decision framework which ultimately help to build social trust<sup>1</sup> between the developers, people affected by their developments and other stakeholders.

For the purpose of the study, SA has been defined as the efforts to assess or estimate, in advance, the socioeconomic and cultural consequences that are likely to happen as the result of specific project or development interventions. SA is a process that provides a framework for gathering, prioritizing, analyzing, and incorporating social and cultural information and participation into the design and implementation of development interventions. It ensures that development interventions: (a) are informed and take into account the key relevant social issues; and (b) incorporate a participation strategy for involving a wide range of stakeholders.

The SA exercise aims to assess and identify the likely social impacts<sup>2</sup> of the proposed Kabeli-A Hydroelectric Project (KAHEP) on local communities, giving particular attention to the mitigation of adverse or unintended aspects and enhance the positive effects. The purpose of this document is to report on the findings of the SA carried out by Hydro-Consult Engineering Limited (formerly Hydro Consult Private Limited) on Kabeli Energy Limited's (KEL's) KAHEP. This SA report will provide a guiding document to identify the likely impacts of the interventions of KAHEP during its whole project cycles and come up with appropriate mitigation measures to address them.

The SA and planning of the social aspects of KAHEP has been carried out in accordance with the Nepal Government's statutory framework, World Bank's Policies and Guidelines and International Faineance Corporation (IFC) Performance Standards. The main aim of these statutory framework, policies and guidelines is to direct the SA exercise of whether the proposed project would promote the sustainable management of resources in a way or at a rate that enables people and communities to provide for their social, cultural and economic well being. In essence, the framework aims to ensure realistic rehabilitation and compensation of the acquired assets of the affected persons such as loss of land, loss of livelihood, loss of standing crops/ trees, loss of access to Common Property Resources (CPR) and facilities, and additional benefits for vulnerable population. The framework provides mitigation measures against losses for titleholders. Accordingly, the likely impacts of the KAHEP on local communities have been identified and corresponding measures for mitigation, monitoring and management over the project life cycle at the community, district and regional levels have been recommended. In particular, measures of maximization of the benefits to the local community (e.g. additional employment, increased business turnover, better amenities) have been suggested while minimizing the social and environmental costs (e.g. negative environmental effects, social dislocation).

---

<sup>1</sup>According to E7 Working Group Report ( 2000), for the purposes of the energy industry, social trust can be defined as the quality of a relationship between a company and its stakeholders, where any action performed, service provided, or information given will meet the needs, expectations, and concerns of all parties involved (<http://www.e7.org>).

<sup>2</sup> For the propose of this study, social impacts have been defined as the consequences to the local communities of any proposed action of KAHEP that changes the way they live, work, relate to one another, organize themselves and function as individuals and members of society. This definition also includes social-cultural aspects, for example to people's values, attitudes and perceptions of themselves and their community and environment.

KAHEP is a 37.6 MW peaking run-of-river hydropower project on the Kabeli River in Eastern Nepal. Kabeli River is a tributary of the Tamor River which is one of the major tributaries of the Kosi River system. The Kabeli River is located about 620 km east of Kathmandu, forming a natural border between the Panchthar and Taplejung districts in the middle mountains of Nepal. The Project area of KAHEP covers four Village Development Committees (VDCs): Amarpur and Panchami of Panchthar district and Thechambu and Nangkholyang of Taplejung district. Amarpur VDC is the most affected VDC as the major project structures like Headworks, Surge shaft, Waterways and Powerhouse are located in this VDC. The camp area is located in Amarpur VDC. Thechambu VDC experiences impacts due to the dam construction and dewatering. The total length of dewater zone stretch from the headworks to Kabeli-Tamor confluence and it is about 5.6 km. The left bank of the dewater zone lies in Amarpur VDC, and along the right bank there are Thechambu and Nangkholyang VDCs. The KAHEP has been classified by the World Bank as a 'Category A' project and the project specific SA report has been prepared within the framework of World Bank's Policies, IFC Performance Standards and relevant and applicable statutory provisions of Nepal Government.

## **1.1 Background context of the KAHEP**

Nepal has potentiality of 83000 MW of hydroelectricity (Shrestha 1966) of which 43000 MW are supposed to be viable from technical and economical point of view (MoWR 1981). However, the country has not been able to harness this natural advantage even up to 2 % of its available capacity. The first hydropower project in Nepal, Pharping Hydropower Project with a capacity of 500 kilowatt of electricity was installed in 1911 AD. It was one of the largest hydropower projects in the south Asia during that time.

Nepal's hydropower development underwent two district phases: the first from 1911 to 1995 and the second from 1995 to the present. In 1995 the World Bank withdrew from the proposed one billion-dollar Arun III hydroelectric project and it was a watershed in Nepal's hydropower history (Dixit and Basnet, 2005). Till 1995, most of Nepal's power projects, except Tinau and Jhimruk, which were developed by Norwegian missionaries were built with support from donors, multilateral banks and other funding sources. From 1911 to 1995, Nepal installed about 300 MW of power by establishing both hydro and diesel plants. Additionally, 300 MW was added in the seven years from 1995 to 2002. This fast-paced doubling of the installed capacity took place under three types of institutional arrangements: International Independent Power Producers (IIPPs), national IPPs, and public sector undertakings (Dixit, 2006).

Nepal's hydropower sector has seen a major shift in approach in the last 15 years. The promulgation of the Electricity Act of 1992 paved the way for private investment. In 1998, the NEA Board announced the rates at which Nepali entrepreneurs who developed hydropower plants in the range of 1 to 10 MW, could sell electricity to the grid. The main purpose of the announcement was to encourage Nepali entrepreneurs to invest in and sell electricity to the national grid. In 2001, Government of Nepal started disbursing 50 % of the total royalties obtained from hydropower projects to the District Development Committee (DDC) that house the project. Initially, 10 % was handed over but later the amount of the royalty was increased through a ministerial decision to 12 % for the district housing the plant and 38 % to the districts in the Development Region (ibid). Despite these efforts, Nepal has managed to develop only about 688 MW of hydropower by 2009 ([http://www.nepalhydro.org.np/nha\\_db.pdf](http://www.nepalhydro.org.np/nha_db.pdf) accessed on June 11, 2010). On the other hands, the demand for internal consumption of electricity is more than 800 MW. During the dry season, electricity generating capacity has halved or more depending on the level of water in the reservoir. The deficit power has to be managed by importing from India or by load-shedding. At present around forty percent of the population have access to electricity and most of them are the urban population.

Larger hydropower projects bring several inherent problems like submergence of large area of land, consequential rehabilitation of the displaced masses and damage to flora and fauna. Reconciling competing demands for water, avoiding disputes over water rights are other issues. Under such circumstances, it is judicious to implement small and medium sized projects for meeting the demands of the people. These small-scale projects are more eco-friendly, have short development period and do not involve large submergence or rehabilitation.



With initial identification during the Koshi River Basin Master Plan Study (1983-85), successive studies formulated the 30 MW Kabeli-A Hydroelectric Project. On this backdrop, the KAHEP was firstly identified by Nepal Electricity Authority (NEA) in 1998 as a part of identification of potential small hydroelectric projects in the Eastern Development Region of Nepal. It is a pondage Run-of-the-river (PRoR) type scheme with the proposed installed capacity of 37.6 MW with mean annual estimated energy of 190.2 GWh excluding 6% outage. The major project features of KAHEP are diversion weir, side intake, settling basin, headrace tunnel, surge shaft, surface penstock and surface powerhouse. Furthermore, KAHEP will require up-gradation of the tracks that are under construction by the participation of the local people to access to the headworks and the powerhouse areas. It is expected that the implementation of this project will help to reduce the power shortage to some extent; provide stability to the Integrated Nepal Power System (INPS).

## 1.2 Project proponent

Butwal Power Company (BPC), a prominent hydropower company in Nepal, is promoting green energy since 1966. BPC owns and operates 12 MW Jhimruk Hydropower Project and 5.1 MW Andkikhola Hydropower Project. Moreover, BPC has 16.88 % and 60 % of shares in 60 MW Khimti Hydropower Project and 4 MW Khudi Hydropower Project respectively. In addition, BPC is developing several new projects, which are under various stages of development.

KAHEP was opened for global bidding to develop under Build, Own, Operate and Transfer (BOOT) model. A joint venture led by BPC won the bid and formed Kabeli Energy Limited (KEL) to develop the project. KEL, in the status of a Project Company, signed a Project Development Agreement (PDA) with Department of Electricity Development (DoED) for the development of KAHEP on 31 January 2010. The address of the project proponent is given below:

### **Kabeli Energy Limited (KEL)**

Ganga Devi Marga-313, Buddha Nagar

P. O. Box: 11728, Kathmandu, Nepal

Tel: +977-1- 4781776/4784026/ Fax: +977-1- 4780994

Email: [kel@bpc.com.np](mailto:kel@bpc.com.np)

Website: <http://www.kel.com.np>

## 1.3 Organization responsible for preparing the report

Hydro-Consult Engineering Limited (HCE)<sup>3</sup>, formerly Hydro Consult Private Limited (HCPL), a sister organization of BPC, has conducted the SAP of the KAHEP. HCE specializes in engineering, environment and social consultancy in hydropower, irrigation and other infrastructure development sectors. The address of the consultant is given below:

### **Hydro-Consult Engineering Limited (HCE)**

Buddha Nagar

P. O. Box: 14408, Kathmandu, Nepal

Tel: +977-1-4782507/ Fax: +977-1-4785920

Email: [service@bpch.com.np](mailto:service@bpch.com.np)

Website: <http://www.bpch.com.np>

---

<sup>3</sup> In 1986 BPC established BPC Hydroconsult as the company's consulting wing for engineering and consulting services in hydropower, water and irrigation sector. BPC Hydroconsult was restructured as a separate entity, Hydro-Consult Private Limited (HCPL) in 2009 that was again converted to a public company; Hydro-Consult Engineering Limited (HCE) in 2012. HCE is a subsidiary of BPC and is recognized as a leading consulting organization and it undertakes multi-disciplinary projects

## **I.4 Objectives of SA study**

The overall objective of SA study is to assess and analyze the likely social issues arising from the implementation of the project and to recommend mitigation and enhancement measures for adverse and beneficial impacts. The key purpose of the study is to suggest a realistic compensation and rehabilitation of the acquired properties like land (agriculture, homestead, communal), loss of structure (residential, commercial, community), loss of livelihood, loss of access to common pool resources, and additional benefit to vulnerable population. The SA report will act as a main document to prepare Social Action Plan (SAP) during the detailed project planning exercise. The SAP shall prescribe mitigation measures against the losses of physical properties and social and cultural assets, livelihood, access to common pool resources and recommend enhancing measures where there is a benefit to the community in ensuring the achievement of expected positive effects. The specific objectives of the SA study are to:

- Collect baseline data on socio- economic and cultural environmental condition of the project area and to identify all social issues under the construction of KAHEP, including land acquisition, cultural, public health impacts and resettlement plan if necessary;
- Identify indigenous community in the project areas, and carry out an assessment of their social, economic, cultural and institutional characteristics;
- Identify the key stakeholders and carry out stakeholder analysis over their interests, attitudes and expectations from KAHEP;
- Carryout public consultations and seek their feedback in addressing social impacts and enhancing project benefits;
- Review relevant current legal framework to address social impacts, and develop a project policy to address them;
- Develop a SAP that includes all measures to address the identified impacts and enhance project benefits;
- Review current institutional setups, including government and company, and propose measures to strengthen the current system to manage the implementation of the SAP; and
- Ensure that the affected persons are effectively informed and provided opportunities to participate in the planning and implementation stages of the SAP in order to incorporate their inputs.

## **CHAPTER 2**

# **DESCRIPTION OF THE PROJECT**

## 2 DESCRIPTION OF THE PROJECT

### 2.1 Project location

KAHEP is a 37.6 MW peaking run-of-river hydroelectric project on the Kabele River in Eastern Nepal. The Kabele River forms a natural border between Panchthar and Taplejung districts in the middle mountains of Nepal (Figure 2-1).



**Figure 2-1: Location of the KAHEP in national map**

The headwork of the project is located in the border of Amarpur and Thechambu VDCs. The approximate longitude and latitude of the proposed intake are  $87^{\circ} 44' 56''$  E and  $27^{\circ} 16' 40''$  N respectively. The tunnel alignment will pass through Amarpur VDC. The powerhouse is located at Pinasi village of Amarpur VDC at an approximate longitude and latitude of  $87^{\circ} 44' 03''$  E and  $27^{\circ} 14' 11''$  N respectively. The construction and engineer's camps will be located at Amarpur VDC. The geographic location of the project is as follows:

East:  $87^{\circ} 45' 50''$  E,

West:  $87^{\circ} 40' 55''$  E,

North:  $27^{\circ} 17' 32''$  N, and

South:  $27^{\circ} 13' 41''$  N.

Kabele is one of the tributaries of the Tamor River. It joins the Tamor River approximately 5.6 kilometers downstream of the proposed intake. The Project area of KAHEP will cover four VDCs: Amarpur, and Panchami of Panchthar district, and Thechambu and Nangkholyang of Taplejung district.

### 2.2 Accessibility

#### 2.2.1 Overall accessibility

The project area is about 800 km away from Kathmandu. It is about 600 km by Tribhuvan, Prithvi and Mahendra Highway up to Birtamod in Jhapa district. Mechi Highway starts from Charali, located 4 km east from Birtamod Bazaar in Jhapa district along Mahendra Highway and reach Kabele Bazaar (202 km north) on the left bank of Kabele River after crossing Phikkal, Ilam, Ranke, Phidim and Gopetar market areas. The 60 km Phidim-Kabele sector of Mechi Highway is gravel road. Apart from this road,

seasonal air services are available from Biratnagar to Taplejung that is further 26 km (gravel road) north from Kabeli Bazaar along the Mechi Highway.

### 2.2.2 Project component accessibility

Project has reviewed different alternatives for access roads to headworks and powerhouse. Various consultations were held with communities over the alternative road alignments. There were two options considered for the access road to headworks. The first option of the access road alignment to the headworks branches from Mechi highway near the Kabeli Bazaar at Chainage 59+900 km along the left bank of the Kabeli river as proposed by the NEA feasibility study with an approximate length of 2.3 km. The second option of the alignment for headworks branches from Mechi Highway (chainage 50 km) near Bijulibhanjyng of Amarpur VDC along the left bank of the Kabeli River with an approximate length of 7.4 km. These two options are all existing tracks used by the local population. In discussing these options, local villagers wanted their tracks to be used as the access road so that they could have improved access. Out of the two alternatives, the second option seems to be promising from all aspects and has been considered as the project road to headworks area.

There were altogether three options considered for the access road to powerhouse. Alternative 1 is to take off from Mildanda near Singhapur bazaar (around 52 km from Phidim) of Mechi Highway with estimated length of 12.2 km to powerhouse area that involves large number of hairpin bends. Alternative 2 is from Bhanuchowk (48 km from Phidim) of Mechi Highway to Panchami VDC which consists of total 15 km long track. The road is opened by the local communities to Pinasi (Majhitar) village with a cost sharing mechanism agreed by the adjoining communities. This road also includes a number of hairpin bends and stream (*Kholsi*) crossings. Alternative 3 is from Salleri of Bharapa VDC (19 km from Phidim) at Mechi Highway to powerhouse area. Out of the three alternatives, alternative 2 from Bhanuchowk bazaar to Pinasi seems to be promising from all aspects and has been considered as the project road to powerhouse area. Local peoples' preferences were given full considerations in deciding the alignment. The decision was made to use existing community tracks at their request.

## 2.3 Project features

The project features description in this report is as per the Updated Feasibility Study Report (UFSR), 2011. The project is PRoR type with a proposed installed capacity of 37.6 MW. The diversion barrage with provision for ponding will be constructed at 2.5 km upstream of Kabeli Bazaar in Dhuseni village of Amarpur VDC on the left bank and Khudurke jungle of Thechambu VDC on the right bank. The two tunnel intakes on the left bank will feed two underground settling basins and the water will be conveyed by 60.2 m long pair tunnels followed by a 4326.8 m long headrace tunnel. A surge shaft will be connected to the headrace tunnel through an offset tunnel near the tunnel outlet. Thereafter, 250.5 m long buried penstock follows the tunnel and feeds water into two Francis turbine in a surface powerhouse located adjacent to the Piple Khola on the left bank of the Tamor River. Water will be discharged back to the Tamor River through a tailrace canal. The gross head and design discharge of the project are estimated to be 116.80 m and 37.73 m<sup>3</sup>/s respectively. Major components of the project are briefly described below. The project location map and layout map are given in ANNEX A and ANNEX B respectively.



Photo 1: Proposed headworks area

### 2.3.1 Headworks

The proposed headworks site is located at an elevation of 560 masl, 5.6 km upstream of Kabeli – Tamor confluence (Photo 1). The headworks will consist of a 14.3 m high barrage, two tunnel intakes, approach tunnels, two underground stilling basins, and an access tunnel. Left bank of dam axis is at Dhuseni village, Amarpur-5 of Panchthar district while the right bank is located at Khudurke Ban, Thechambu-6 of Taplejung district along Kabeli River. The construction of headworks will require the diversion of the river during the construction time. Therefore, a diversion tunnel has been proposed in the design. The diversion tunnel will be a D-shaped tunnel of 4.8 m diameter. Two coffer dams will be constructed, one each at upstream and downstream end. The top of the coffer dam will be 5 m wide with elevations of 573 masl for the upstream dam and 565.5 masl for the downstream dam.

#### *Diversion barrage*

A 14.3 m high barrage with floor at 561 masl elevation with a provision for ponding will be constructed. The barrage consists of a low crested Breast Wall Type Barrage with five weir bays and one sluiceway bay with width of 8 m and height of 5.5 m each.

The operating platform has been set at 578.3 m elevation, which is 3 m above the full supply level. The right end of the barrage has been designed at 575.8 masl level so as to act as an emergency spillway during extreme flood events. The length of the crest at most narrow section is at least 15 m.

The peaking reservoir in this project has been designed for a total of 6 hour peaking at reduced capacity and in two slots of 4 and 2 hours. The live storage of the reservoir is 0.315 million m<sup>3</sup>. The area of the reservoir at 575.3 masl is 10.60 ha. Also, the minimum drawdown level has been kept at 570.5 masl which is 9.5 m above the river bed. The area of the reservoir for this level is 6.92 ha. The live storage of the reservoir will not be inundated during the monsoon season for four months from June to September to preserve the live volume from deposition. Therefore, the monsoon operating level has also been set at 570.5 masl. Reservoir will not need any drawdown during this season. Therefore, the level should not go below this level even during peak hours. The reduced full supply level in monsoon time will rather be compensated by drawing some more water from the river as river will have abundant water during this time.

#### *Intake and approach tunnel*

The approximate longitude and latitude of the proposed intake are 87° 44' 56" E and 27° 16' 40" N respectively. Two side intakes will directly feed two approach tunnels. Two tunnel intakes have been designed to draw 115% of the design flow from the reservoir. The intakes are on the left bank of the river and will take off at a favorable orientation with respect to the barrage axis. The intake sill is at 564.7 masl and has a bell mouth opening to join a D-shaped approach tunnel of 3.2 m diameter. The centre line of the intake is at 566.3 masl elevation. Each intake consists of one gate with one stop log. Two intakes can run independently and will feed two different settling basins through two approach tunnels. Two approach tunnels, each following the intakes are 80.9 m long up to the settling basin.

#### *Settling basin*

Two underground settling basins with two hoppers in each have been proposed on the left bank of the Kabeli River. The rock proposed for settling basin comprises granite of fairly good quality. For KAHEP, intermittent flushing system with 60 minutes time interval between two consecutive flushing cycles have been adopted. Patented flushing system called S4 will be used. The length of flushing tunnel is 150 m.

#### *Access tunnel*

Access to the settling basin is required for scheduled and emergency monitoring and maintenance. Access tunnel of D-shaped, 4 m diameter has been proposed. The total length of the access tunnel is 437 m and the tunnel outlet portal is located on the downstream left bank of the barrage.



### 2.3.2 Waterways

#### Converging pair tunnels

Inverted D-shaped, concrete lined with 3.2 m diameter and 60.2 m long converging pair tunnels has been proposed from the outlet of the settling basin to start of Headrace tunnel.

#### Headrace tunnels

A 4326.8 m long D-shaped headrace tunnel of internal diameter of 5.65 m has been proposed to convey the flow after the pair tunnels. It will pass through granite (65%), gneiss, schist, quartzite and phyllite rocks. Maximum rock cover is about 800 m. Rock bolting and concrete lining will be done at some stretches.

#### Surge shaft and outlet portal

An underground surge shaft is proposed at Pinasi village of Amarpur VDC on the left bank of the Tamor River (Photo 2). The topmost part of the surge shaft will be exposed at ground. Surge shaft of the project is 51.7 m high with 10 m diameter. Surge shaft location comprises phyllite with intercalation of thin quartzite laminae, which are exposed few meter downhill slope at a rock cliff. It will be located near the outlet portal of the headrace tunnel and is placed at few meters offset from headrace tunnel. Outlet portal of the tunnel is proposed in rock outcrop on the right bank slope of the Piple Khola.



**Photo 2: Proposed surge shaft area**

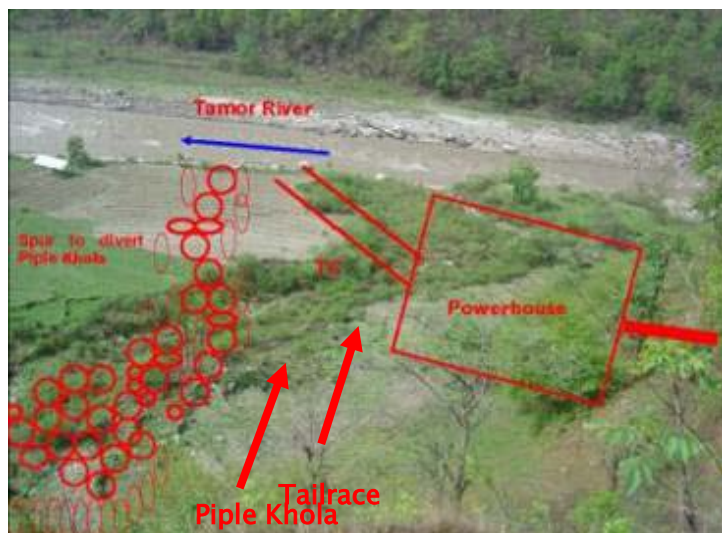
#### Penstock

The penstock alignment entails 223.3 m long penstock pipe from the tunnel outlet portal to bifurcation, and 27.2 m long pipe from bifurcation to powerhouse. The internal diameter of pipe is 3.55 m with different thicknesses (10 mm-20 mm) at different sections between tunnel outlet portal to bifurcation point and varies thereafter. The penstock starts at the tunnel outlet portal at an elevation of 539.7 masl (centre level of penstock at tunnel outlet portal) and passes through the hill slope and terminates at the connection to the turbine at an elevation of 457.6 masl. The penstock will be buried in trench. Landscaping of the surface will be carried out after backfilling.

### 2.3.3 Powerhouse

The approximate longitude and latitude of the proposed powerhouse site are 87° 44' 03" E and 27° 14' 11" N respectively. The proposed powerhouse is semi underground

located on almost flat alluvial deposit on the right bank of Piple Khola (left bank of Tamor River), Ward number



**Photo 3: Proposed powerhouse location at right bank of Piple Khola near the confluence with Tamor River**

9 in Amarapur VDC, Panchthar district (Photo 3). The outside dimension of powerhouse is 34.8 m long and 18.6 m wide. Protection of Piple Khola and some scaling to hill slope is required. Powerhouse complex contains two set of butterfly valves, two units of vertical axis Francis turbines, generators and electromechanical accessories. The elevation of the turbine axis is set at 457.64 masl. The outdoor switchyard area is located close to the powerhouse. The switchyard covers 55.4 m x 38.75 m total area upstream of powerhouse at an elevation of 472.6 masl.

Since the area available for powerhouse is narrow and very close to seasonal tributary Piple Khola, it is necessary to train Piple Khola by pushing it on the left side. Two long retaining walls are proposed to channelize Piple Khola longitudinally on both sides. The width of Piple varies along its longitudinal profile. It is a narrow gully at the upper stretch and it widens at lower stretch adjacent to Tamor River. Likewise, it is necessary to train the Tamor River to prevent powerhouse from flooding even though it lies at safe location on the leeward side of the hill ridge. The earthen bund will be constructed along the left bank of the Tamor River from the end of hill ridge-line down to the Tamor River to protect powerhouse area from flood.

#### 2.3.4 Tailrace

The water will be discharged back to the Tamor River at Pinasi through a 93.1 m long rectangular box culvert type tailrace. The slope of tailrace is maintained at 1:1500. Tailrace canal passes through the active channel of the Piple Khola. Shifting of the Piple Khola along the left bank by emplacement of spur with the tunnel muck will allow the space for tailrace canal. The channel deposits at the place are moderately compact alluvial materials mostly derived from the Tamor River. The alluvium contains boulders and cobbles of granite, gneiss, schist, phyllite and quartzite with the matrix of pebbly sand.

#### 2.3.5 Access road

Project has reviewed different alternatives for access roads to headworks and powerhouse. Various consultations were held with communities over the alternative road alignments. Local peoples' preferences were given full considerations in deciding the alignment. The decision was made to use existing community tracks at their request. These tracks have been under expansion by the local communities. Upon request from the local communities, these tracks (about 15 km for powerhouse and about 7.4 km for headworks) from the Mechi Highway will be upgraded to access the powerhouse and the headworks area. The upgradation activities for the track roads will include backfilling, drainage maintenance, construction of protecting walls etc. Community has widened the original tracks and the project will do the surface upgradation. Local peoples' preferences were given full considerations in deciding the alignment. The decision was made to use existing community tracks at their request.

##### **Access road to headworks**

The existing track for headworks branches from Mechi Highway near Bijulibhanjyng (around 50 km from Phidim) of Amarapur VDC along the left bank of the Kabeli River with an approximate length of 7.4 km.

##### **Access road to powerhouse**

The existing track to powerhouse takes off from Bhanuchowk (around 48 km from Phidim) of Mechi Highway with estimated length of 15 km to powerhouse area.

#### 2.3.6 Salient features of the project

The salient features of the project is presented in Table 2-1.

**Table 2-1: Salient features of KAHEP**

| SN | Items               | Description   |
|----|---------------------|---|
| 1. | <b>Project Name</b> | Kabeli-A Hydroelectric Project  |
| 2. | <b>Location</b>     | Amarapur and Panchami VDCs of Panchthar District and Thechambu and Nangkholyang VDCs of Taplejung |



|           |  |  |
|-----------|--|--|
|           |  | District   |
| 2.1       | Project Boundaries                                   | East 87° 45' 50" E<br>West 87° 40' 55" E<br>North 27° 17' 32" N<br>South 27° 13' 41" N |
| <b>3</b>  | <b>Type of Development</b>                           | Peaking Run-of-the-river (PROR)  |
| <b>4</b>  | <b>Hydrology at intake</b>                           |  |
|           | Catchment area                                       | 862.3 km <sup>2</sup>  |
|           | 100 year flood (Q100)                                | 1860 m <sup>3</sup> /s   |
|           | Probable maximum flood (Q1000)                       | 2650m <sup>3</sup> /s  |
|           | Mean monthly flow                                    | 61.4 m <sup>3</sup> /s   |
|           | 40 percentile flow                                   | 37.73 m <sup>3</sup> /s  |
|           | Monsoon Design Discharge                             | 40 m <sup>3</sup> /s   |
| <b>5.</b> | <b>Headworks</b>                                     |  |
|           | Type/Length of weir/height                           | Barrage with 4 radial gates; 3 weir bays and one sluice bay                            |
|           | Full supply level                                    | 575.3 m  |
|           | Peaking reservoir net live storage capacity          | 0.335 million m <sup>3</sup>   |
|           | Crest elevation                                      | 561.5masl for barrage bays and 561.0 for sluice bay                                    |
|           | Gate Size  | 10 m Width * 9.0 m Height each   |
|           | Intake type  | Tunnel intake on left bank   |
|           | Intake size at trash rack                            | 2 nos. 5.4m Width * 5.8m Height  |
|           | Riparian/downstream Release                          | 0.86 m <sup>3</sup> /s (10% of average monthly minimum)                                |
| <b>6.</b> | <b>Diversion during construction</b>                 |  |
|           | Diversion flood (5 year dry season flow)             | 154 m <sup>3</sup> /s  |
|           | Diversion tunnel                                     | 240m long; 4.8m diameter D-shaped tunnel   |
|           | Coffer Dams  | 80m at upstream side<br>90m long at downstream side                                    |
| <b>7.</b> | <b>Approach Tunnel from Intake to Settling Basin</b> |  |
|           | Number   | 2 (1 each starting from either intake)   |
|           | Length   | 80.9 m   |
|           | Type   | Inverted D shaped; Concrete lined  |
|           | Cross section  | Internal Finished Diameter 3.2 m   |
| <b>8.</b> | <b>Settling basin</b>                                |  |
|           | Type   | Underground settling basin   |
|           | Number   | 2 basins with 2 hoppers in each  |
|           | Length of uniform section                            | 76 m   |

|             |  |   |
|-------------|--|---|
|             | Total length including transition  | 113 m   |
|             | Width  | 15.8 m each   |
|             | Height   | 17 m  |
|             | Flushing system  | S4 system   |
|             | Flushing tunnel length and size  | 150 m long; 2.25 m D-shaped tunnel with 1.75 m dia. MS pipe |
| <b>9.</b>   | <b>Access tunnel</b>   |   |
|             | Length   | 437 m   |
|             | Type   | Inverted D shaped; shotcrete and rock bolt lined            |
|             | Cross section  | Internal diameter 4 m                                       |
| <b>10.</b>  | <b>Waterways</b>   |   |
| <b>10.1</b> | Covering Pair Tunnels from outlet of settling basin to start Headrace Tunnel |   |
|             | Length   | 60.2 m  |
|             | Type   | Inverted D shaped; Concrete lined                           |
|             | Cross section  | Internal Finished Diameter 3.2 m                            |
| <b>10.2</b> | Headrace Tunnel  |   |
|             | Length after pair tunnels  | 4327 m  |
|             | Type   | Inverted D shaped; Shotcrete lined and Concrete lined       |
|             | Cross section  | Internal Finished Diameter 5.65 m                           |
| <b>10.3</b> | Surge Shaft  |   |
|             | Type   | Underground and exposed to surface                          |
|             | Internal diameter  | 10 m  |
|             | Height   | 51.7 m  |
| <b>10.4</b> | Penstock   |   |
|             | Material   | Mild steel  |
|             | Length before bifurcation  | 223.3 m   |
|             | Length after bifurcation   | 27.2 m each   |
|             | Internal Diameter  | 3.55 m  |
|             | Shell Thickness  | 10-20 mm; partly ribbed                                     |
| <b>11</b>   | <b>Powerhouse</b>  |   |
|             | Powerhouse type  | Semi-underground  |
|             | Powerhouse size (L*B*H)  | 34.8 x 18.6 x 31.8 m  |
| <b>12</b>   | <b>Tailrace</b>  |   |
|             | Design tailwater level   | 458.5 masl  |
|             | Length   | 93.1 m  |

|            |   |   |
|------------|---|---|
|            | Cross-section   | 4.9 m wide * 4.65 m high Rectangular box culverts |
|            | Longitudinal slope  | 1 in 1500   |
|            | 100 year flood (Q100) in Tamor River                                  | 5800 m <sup>3</sup> /s                            |
|            | Probable maximum flood (Q1000) in Tamor River                         | 8260 m <sup>3</sup> /s                            |
| <b>13.</b> | <b>Turbine</b>  |   |
|            | Turbine type  | Vertical Axis Francis                             |
|            | Number of units   | 2   |
|            | Rated speed   | 375 rpm   |
|            | Turbine Axis Level  | 457.64 masl                                       |
| <b>14.</b> | <b>Power and energy output</b>  |   |
|            | Gross head  | 116.8 m   |
|            | Rated net head  | 111.64 m  |
|            | Design discharge  | 37.73 m <sup>3</sup> /s                           |
|            | Installed capacity  | 37.6 MW   |
|            | Annual estimated energy per excluding 6% outage                       | 201.0 GWh   |
|            | Firm energy excluding outage  | 149.4 GWh   |
|            | Secondary energy excluding outage                                     | 51.6 GWh  |
| <b>15.</b> | <b>Transmission line</b> (Not part of the project)-to be built by NEA |   |
|            | Voltage   | 132 kV  |
|            | Length  | 77 km   |
| <b>16.</b> | <b>Access road</b>  |   |
|            | To headworks  | 7.4 km from Mechi highway                         |
|            | To powerhouse   | 15 km from Bhanuchowk at Mechi Highway            |
| <b>17.</b> | <b>Project Cost</b>   |   |
|            | Total cost  | 70.84 Million US\$                                |
|            | Per kW cost   | 1884 US\$   |
| <b>18.</b> | <b>Financial analysis</b>   |   |
|            | Net present value (NPV)   | 13.09 Million US\$                                |
|            | Simple payback period   | 6.9 years   |
|            | Return of interest (RoE)  | 15.38 %   |
|            | Internal rate of return (IRR)   | 12.71 %   |

Source: Source: UFSR, 2011 and Additional Report to UFSR, 2011

## **2.4 Construction planning**

### **2.4.1 Construction schedule**

Construction schedule has been prepared for the major construction activities and some preparatory work at the site. The overall estimated construction time is about 4 years.

The construction of the project will involve work at four sites simultaneously; work at headworks, work along tunnel alignment including surge shaft, work along penstock alignment and powerhouse area. Since the diversion tunnel has been proposed for diverting water at the weir, the weir/barrage care should be taken to finish the work in shortest possible duration. Similarly, headrace tunnel has no intermediate adits and it has to be progressed from two ends. Therefore, the tunnel construction will be taking very long time. Construction of headrace tunnel and construction of headworks structure are the most critical activities in this project with longest duration.

### **2.4.2 Camp area**

The contractors are responsible for the construction of camps for its work force. The construction camps shall be well-managed to comply with the environmental integrity. It is envisaged that two such camps will be required, one at the headworks area near Kabeli bazaar and another one at the powerhouse area on the left bank of the Tamor River and nearby the powerhouse area. Separate permanent housings will have to be constructed by the employer which shall be converted to permanent facilities for operation and maintenance of Kabeli Power Plant. The area for permanent camp has been envisaged at an area close to the surge shaft location (at Pinasi village).

### **2.4.3 Construction materials and quarry sites**

The construction materials such as sand, aggregates and boulders required for the project will be sourced from the Tamor and Kabeli River's flood plains. For the headworks area, three locations have been identified along the Kabeli River. The total aggregate production capacity of the three sites is estimated to be 426,000 m<sup>3</sup> with 164,700 m<sup>3</sup> of boulders, 171,400 m<sup>3</sup> of cobbles and 25,000 m<sup>3</sup> of sand sufficient to meet the headworks aggregate requirements.

For the powerhouse site, two sites have been identified at the Tamor River flood plain for construction aggregate. Of the two sites, the site located on the left bank of the Tamor River with a total aggregate production potential of 190,000 m<sup>3</sup> with 104,500 m<sup>3</sup> of boulders, 57000 m<sup>3</sup> of cobbles and 28500 m<sup>3</sup> of sand will be used. The site located on the right bank of the Tamor River is an optional site proposed which will be used only if the tunnel spoil considered to be good for aggregate use does not meet the requirements of the aggregate as envisaged. Nearly 60% of the tunnel muck is considered to be good for the aggregate usage.

As the proposed site are river flood plain areas, trenching operation for material quarrying will be prohibited. Quarrying of aggregates will be carried out through striping operations such that the landscape after the quarry will be same as before, however, the land level will change. Besides, quarry operations will be conducted up to the water level of the river.

### **2.4.4 Spoil and muck disposal area**

The total amount of the excavation spoil from the barrage, settling basin, headrace tunnel, surge tank, powerhouse and tailrace tunnel is estimated to be 520,000 m<sup>3</sup>. Nearly 60% of the excavated material is envisaged to be used for aggregates. However, if all of the excavated material is found to be unsuitable, these have to be disposed safely. Based on this assumption, the spoil disposal sites for the excavated muck have been planned.

In the headworks site with a potential total muck of 270,000 m<sup>3</sup>, two sites have been identified on the flood plain area on the left bank of the Kabeli River. Similarly, for the powerhouse area, one site has been identified on the flood plain of the Tamor River slightly upstream of the proposed powerhouse site.

Spoil placement in these sites will be planned in such a way that, the fill surface and outward filling slopes will be protected from erosion by runoff and river flood by installing adequate drainage, toe

protection against river erosion, and bioengineering measures as required. After the completion of spoil filling these sites will be developed as sites for recreation or afforestation through proper landscaping after obtaining the consent of the local communities.

#### **2.4.5 Construction power**

For the construction power a 450 kVA, 425 kVA and 550 kVA diesel generators will be stationed at powerhouse audit, tunnel intake audit and headwork area. The generator sets will be established and operated following best standard practices avoiding risks from electrical shocks, fuel leakages, and noise.

#### **2.4.6 Manpower requirement**

A reasonable estimate for skilled, semi skilled and unskilled work force requirement during the proposed project implementation is expected to be 600 to 800. Local people will be given employment opportunity based on their skills and qualifications.

## **CHAPTER 3**

# **APPROACH AND METHODOLOGY**

### 3 APPROACH AND METHODOLOGY

#### 3.1 Study team

An interdisciplinary team of experts comprising of Senior Anthropologist/Resettlement Expert, Socio-Environmental, Indigenous People Specialist and Anthropologist carried out the SA study. In addition, the environmentalists have contributed their expertise for the finalization of report (Table 3-1).

**Table 3-1: Study team for SA**

| S. N. | Name  | Expertise                                 |
|-------|---|---|
| 1     | Pranav Acharya                                  | Team Leader                               |
| 2     | Hari Prasad Bhattarai                           | Senior Anthropologist/Resettlement Expert |
| 3     | Amrit Poudel                                    | Task Manager/Socio-Environmental          |
| 4     | Hom Prasad Yamphu (Rai)                         | Indigenous Peoples Specialist             |
| 5     | Prakash Poudel                                  | Anthropologist                            |
| 6     | Krishna Das Shrestha                            | Public Relation Officer                   |
| 7     | Balram Bhattarai                                | Environmental                             |
| 8     | Pradip Gautam                                   | Environmental                             |
| 9     | Enumerators for socio-economic household survey |   |

#### 3.2 Study approach and process

##### 3.2.1 Approach

The SA of KAHEP employed an interactive approach in which potential socio-economic issues have been examined in detail at each successive level in the process. The SA of the project and planning of the social aspects has been carried out in accordance with the Nepal Government's statutory framework, World Bank's Policies and Guidelines and IFC Performance Standards.

The SA of KAHEP began with the adoption of an environmental and social screening procedure during the feasibility stage. The purpose of the screening was to identify the level of socio-environmental study to be carried out as per the requirement of the World Bank policy. The screening exercise defined the project as 'Category A' project based on the World Bank classification. Because of the classification SA study and development of SAP have been proposed for the social aspects of the project design.

Various workshops were organized at the beginning of the study where various stakeholders were invited to use their intimate knowledge of the study. An issue-focused approach was adopted. The assessment focused particularly on actual and potential effects and issues that are most critical from the perspective of the stakeholders involved, rather than being encyclopedic and merely descriptive in nature. The approach adopted also involved a staged sequence of assessment activities, aimed at integrating progressively the findings of the various assessment exercises. Project scoping exercise, including a visit to the proposed KAHEP site during April - May 2010 made available the range of issues to be analyzed in the SA study. During the Scoping exercise, series of public consultations meetings were carried out at the field level and at district levels to inform about the project features and its implementation, to collect the information about the project area and to know the local population's views, suggestions and comments regarding the implementation of the project. Similarly, series of consultations were carried out with the Feasibility Study and Technical Assessment teams of

the project, World Bank team and an interactive meeting with team members of World Bank was organized prior to the field visit which provided the opportunity to exchange information and highlight potential issues relevant to further assessments during SA. The output of these technical assessments, combined with the findings of the SA Scoping visit, provided the informational basis for more detailed SA work during September- October 2010. After socio-economic survey of September-October 2010, first asset inventory was carried out in December 2010 and final asset inventory was carried out in March 2011 after the adoption of alternative headwork access road alignment to prepare a complete inventory of households affected by the project construction. The final inventory has been considered as cut-off date for the survey.

Detail SA study and planning of the social aspects of KAHEP has been carried out based on the Terms of Reference (ToR) documents and in accordance with the World Bank's Policies and Guidelines.

The SA draws variety of information, including the in-depth knowledge of the affected communities. Both primary and secondary source of the data have been used as required. Central Bureau of Statistics (CBS) reports, District Development Committee (DDC) and VDC profiles, all the relevant information about the project VDCs and project district collected by various organization along with the EIA study of the project carried out by Nepal Consult (P) Limited in 1998 were the important source of secondary data for this SA study.

### **3.2.2 Process**

The study process includes different activities performed during the whole SA study period, including the development of the conceptual model of the SA study, developing the tools and parameters, field preparation, field work, data collection, data analysis, and report writing.

#### **a) SA indicators:**

The SA study themes and indicators were developed based on the likely impact of the project activities at different stages mentioned in the ToR.

#### **b) Developing questionnaire and checklists**

A semi structured household survey schedule for surveying all permanently and temporarily physically affected households were prepared on the basis of the ToR and SA indicators. Based on the World Bank's policies and guidelines, a separate questionnaire was developed to assess the existing socioeconomic and cultural status of indigenous community of the project areas. The draft questionnaires were discussed with team members of World Bank and Hydro Consult for further improvement and finalization. Similarly, a separate checklist to conduct Focus Group Discussions (FGDs) with different groups and population were prepared to complement the data collected through household surveys.

#### **c) Pre-testing and finalizing questionnaire**

In order to verify the set of questions developed, a pre-testing exercise was done in another project site of BPC having more or less similar socioeconomic setting. Based on the feedback received from the pre-testing, the questionnaire and checklist were finalized.

#### **d) Hiring and training of enumerators**

The reliability of data heavily depends upon the quality of questionnaire and the skill and tactfulness of the enumerators. Hence, four local enumerators were hired to conduct the household surveys apart from the core study team. While selecting the enumerators, due consideration was given to their educational background, field experience and their familiarity and easy access to the assigned areas. One of the team members' having greater experience in field coordination was assigned to train, mobilize and supervise the local enumerators. The SA study team provided two days intensive orientation and training to the enumerators to make them familiar with the semi structured interview schedules and enumeration techniques at project sites before conducting the household survey. After the field test, the enumerators started household survey under the supervision of the field coordinator assigned to them.



### e) Study universe and sampling procedures

All the communities of Amarapur, Panchami, Thechambu and Nang Kholyang VDCs residing in the project area were taken as the universe of the SA study. All the households who will lose their physical assets (permanently and temporarily) and properties (crop land, forest, houses etc) due to the proposed project activities have been included in detail socioeconomic household survey by using the census method. The households for census survey were identified and further verified by using a combination of tools comprising of the cadastral map analysis, technical survey findings, scoping findings and key informant interviews. Socioeconomic household survey questionnaire has been used to collect required information from all households of this category. An additional questionnaire was used for the Indigenous People households to enumerate Indigenous People specific information.

Moreover, a number of settlements were identified as communities of interest within the impacted VDCs for further investigation of the likely impacts of the proposed project. The communities of interest were defined in terms of factors such as geographic location, landownership and residence, caste, ethnicity and gender, patterns of livelihood and employment, business relationships, service delivery and access, and recreational patterns associated with Kabeli River. The communities of interest included for investigation were from both the direct and indirect impact areas of the project. The direct impact area includes the areas where most of the construction activities of the project take place and high level of impacts are anticipated. The surrounding area or the indirect impact area consists of areas that will not be directly affected by the construction activities. It consists of forest areas and settlements which are within 3 to 4 hours walking distance from the project site. Table 3-2 gives the details of the settlements under direct and indirect impact areas.

**Table 3-2: Impacted settlements in the project affected VDCs**

| Districts | VDCs         | Settlements in the Direct Impact Area   | Settlements in the Indirect Impact Area   |
|-----------|--------------|---|---|
| Panchthar | Amarapur     | Dhuseni (HW, TA), Rajabesi (HW, DS), Kabeli Bazaar (DS), Dubichaur (TA), Phodarpati (TA), and Pinasi (PH) | Bhaluchowk, Kurledanda, Simle (Aapegaunda), Bhadaure (Jogidanda), Jarayotar, Madibung |
|           | Panchami     | Kodekpa (PH)  | Tilhar  |
| Taplejung | Thechambu    | Kharelgaun (DS)   | Khalte, Chiphewa  |
|           | Nangkholyang | Khaharegaun (DS)  | Myakha  |

Source: Field survey, 2010

Note: HW: Headwork, TA: Tunnel Alignment, PH: Power House, DS: Dewatered Stretch

## 3.3 Methods and tools of data collection

The SA was primarily focused around delineating impact areas and identifying project affected individuals, families, communities, and then investigating potential social effects and issues related to them. Accordingly, the SA study adopted an approach of systematic collection of information, both quantitative and qualitative, both macro (regional/district/VDC) and micro (household) level data from both the primary and secondary sources. Therefore, the study was primarily based on the firsthand data collected through field study and the data generated through desk study by reviewing of the available and relevant literatures.

### 3.3.1 Desk study

The review of literatures was mainly concentrated to the past similar studies related to social and environmental assessment for hydropower development. Existing policies, legislation and guidelines related to the hydropower development and World Bank's policies and guidelines have been reviewed and documented in the appropriate sections of the SA report. Similarly, available published literature, documents and maps (topographic maps, land use maps, aerial photographs and cadastral survey maps etc.) related to the project have been reviewed and documented. Macro level demographic data on the various ethnic/caste groups, including demographic information on vulnerable groups, were collected from secondary data published by the DDC of the affected Districts. Publications of the Central Bureau of Statistics (CBS) in Kathmandu were extensively used

to establish baseline information of the project area, districts and VDCs. In addition, a series of consultations to get updated information on project development were made with the technical team that had undertaken the updated feasibility study of the project. In similar vein, published or unpublished documents, records, profiles and reports available at the local and district level particularly VDC, and DDC offices, District Forest Office (DFO) and District Land Revenue Office (DLRO) have been collected and reviewed to cross-check and solicit site specific information. Furthermore, the local, national and international organizations working in the project have been visited to collect the project specific information.

### 3.3.2 Field study

Required firsthand data for SA study were collected through various field methods usually employed in social and biological science researches adopting a participatory approach. The socio-economic and cultural environment related information of demography, economic status, education and skill level, health and sanitation, land use and agricultural practices, income generating activities, land loss and preferred mode of compensation, project affected households, gender issues, ethnicity and indigenous community, Dalits and disadvantaged groups, community infrastructure like schools, temples, post offices, health posts etc., local resources and their utilization, historical, archaeological and religious sites, water supply, water uses and amount of the riparian release during dry season, trade, commerce and industries, transportation and communication, and tourism were collected. The main tools of field research included household survey questionnaire, Indigenous Peoples survey questionnaires, FGDs, formal and informal discussions, field observation, interactions and workshops.

#### *Household survey*

A semi structured interview schedule has been prepared and administered to the sampled households (all the households who will lose their physical assets and properties permanently and temporarily due to the proposed project activities) to get in-depth responses about demographic and socioeconomic data, data related physical properties and assets acquired by the project, preferred mode of compensation and rehabilitation, agricultural practices, use of natural resources, energy use, agricultural production and sell, health and sanitation, information related to project and



perceptions towards the project. Similarly the Indigenous Peoples survey interview schedule was administered to collect responses about the identities and cultures of Indigenous Peoples, their attachment and relation to the land, natural resources and territory, likely impacts from the projects, including loss of identity, culture, and customary livelihoods, as well as exposure to disease and other risks. The household survey and survey of Indigenous Peoples have been carried out by a researcher and local enumerators under the supervision of the SA study team of experts. The personal interview techniques have been used to interview the household head/respondent while enumerating the each household. About 46 households of different locations and having various caste/ethnic, gender and economic background were surveyed.

#### *Focus Group Discussion*

The FGDs were organized by the SA study team of experts by giving a prior verbal notice and written letter through a runner to the entire project affected VDCs. The purposes of the FGDs were:

- To provide factual information on the project location, particularly the main project structures such as dam, tunnel, adit portals, powerhouse, surge tank, tailrace and the project access roads besides tentative locations of the quarry sites, construction camps and operation camps of the project.
- To clarify the objective of the SA study of KAHEP and its procedures
- To discuss on the likely potential impacts of the project from technical considerations during project construction and operation in the project area's physical, biological, social, socio-economic and cultural domain.
- To collect information related to socio-economic and cultural environments of the project areas
- To collect opinion, perception and attitudes of the people towards KAHEP
- To get feedback on the likely impacts of the project from local people's perspective particularly on the cultural traditions, customary practices, self identity and attachment to the land and territory, social norms and values of the indigenous community and other groups of the project areas
- To get baseline information on the cultural, religious, recreational and livelihood dependence of the local people on the dewater stretch of the Kabeli River and corresponding likely impacts due to project development
- To solicit opinion of the local people on the alternative mitigation measures to abate, or avoid the potential impacts
- To solicit opinion of the local people with regard to the development aspiration of the project.

A total of 14 FGDs have been conducted with the local people in different locations of the project areas to identify the various issues related to the hydropower project development and its socioeconomic consequences and corresponding mitigation measures. A total of 251 individuals representing different impact areas and groups such as dam site, dewatering zone, access road, powerhouse site, Community Forest User Groups (CFUGs), Leasehold Forest User Group (LFUG), *Dalits*, Indigenous community and women were participated in the FGDs. Out of the 14 FGDs, 2 were with women, 1 with *Dalits*, 3 with Indigenous community, 1 with Kabeli Concern Committee, 1 with CFUG, 1 with LFUG, 1 with local school teachers and the rest 4 FGDs were conducted with mixed group comprising of male, female, Indigenous community, *Dalits*, *Brahmin*, *Chhetri* and so on.



**Photo 5: Consultation meeting with Kabeli Concern Group Amarpur-6**

Land purchase and mode of compensation, livelihood related issues due to the loss of land, dewatering, prior information dissemination practices, International Labor Organization (ILO) 169 and rights of the Indigenous community, rural electrification, current various uses of the Kabeli River, perceptions towards project, socio-cultural practices associated with Kabeli River, local development needs, likely impacts due to the various project structures and corresponding mitigation measures were the major issues discussed during the FGDs. The participants freely discussed on the issues and expressed their ideas, views, suggestions, and comments on the various components of projects. The moderator (study team member) introduced the issues and agendas of the discussion and kept the

discussion going, and tried to prevent domination of the discussion by a few participants. Major issues rose during the FGD and corresponding findings are summarized and are presented in the ANNEX D. FGD Checklists prepared to orient and conduct the FGDs for different groups are presented in the ANNEX C.

#### *Formal and informal consultations and discussions*

Informal discussion with local stakeholders and people of different backgrounds and social identities have been conducted to identify key actors and agents associated with various issues of the project and explored the underlying socioeconomic, cultural and political situation that have shaped the life styles of the communities of the project areas. These discussions were helpful to recommend community participation, consultation policy, institutional arrangement for project implementation and to suggest grievance hearing mechanism. These discussions were also helpful to identify roles and responsibilities of different stakeholders to develop equitable benefit-sharing mechanisms.

Formal consultation meetings with identified stakeholders (VDC, DDC, NGOs, political parties, ethnic organizations, DFO, DADO) working at local and district levels have been conducted to know their views on the likely impacts of the project on local people and community, development infrastructure and the project induced economic and social development opportunities. More specifically, these consultations meetings were useful to formulate SAP particularly to develop resettlement and rehabilitation policy.

#### *Field observation*

The SA team of experts observed and recorded what they saw and hear at the research sites. Site observations were made to obtain supplementary information on different socio-economic and cultural activities in the dam site, dewater stretch, access road, tunnel alignment and power house site. This included recording of physical surroundings, religious sites/structures, ongoing cultural religious activities, processes, and discussions. A field note with daily recordings was maintained.

#### *Workshop/Interaction*

The SA team debriefed the preliminary findings with the stakeholders at different level. The comments and suggestions gathered during the workshop have been incorporated into the report.

### **3.4 Mode of data analysis**

The data collected through various tools and sources were analyzed using both descriptive and statistical methods. Qualitative data like socio-cultural characteristics, knowledge, practices and attitudes and perceived need and problems expressed, suggestions and comments made by the people of the study areas have been analyzed under appropriate context under different categories and sub-headings. Quantitative data collected from household survey have been edited, validated and updated before the start of data analysis. The commonly used Statistical Package for Social Science (SPSS), latest version (16) has been used to enter and analyze data. Necessary maps, tables and charts have been presented in the appropriate sections.

### **3.5 Preparation of SA**

The data collected through various tools and sources and feedback from various consultations have been analyzed by a team of experts and used to develop the SA that includes assessment of likely social issues arising from implementation of the project and proposal for mitigation and development measures to be considered during SAP preparation in detailed project planning exercise.

The SA report, apart from findings of 2010 and 2011 field works and analysis, have been updated based on findings from additional field works, supplementary studies and revisions. These supplementary studies and revisions were done only for the critical issues where ambiguity was encountered. These studies have been listed below in chronological order.

- **Review by Panel of Experts (PoE):** PoE of KAHEP comprised of five members including one environmental and one social expert. Environmental and Social PoE members visited the KAHEP site on December 2011 and reviewed SA/SAP Report. In addition, the

environmental and social PoE members also reviewed the bid documents for incorporating environmental and social aspects

- **Review by World Bank Social Development Consultant:** The World Bank Social Development Consultant was engaged from May 15-May 30 2013 to review and update the SA/SAP reports. The consultant carried out a three-day long field visit in the project area. The purpose of the study was to assess the latest status of the project, note the changes in the design, if any, with resultant impacts on the project affected people and keep on records the key findings. In addition, people's attitudes and perceptions towards the project and their views on possible mitigation measures were also solicited. Information were also updated regarding social safeguard compliances focusing on land acquisition for the construction of different physical facilities, collect information about local level social services and development works implemented or planned in future by the project for livelihood improvement of project affected people.

The World Bank, IFC, KEL and HCE teams have worked together to improve and make the SA and SAP reports bankable. The current SA report, therefore, is the updated and revised version that incorporates the findings from the above mentioned studies and subsequent revisions.

## **CHAPTER 4**

# **DESCRIPTION OF THE SOCIO-CULTURAL ENVIRONMENT**

## 4 DESCRIPTION OF THE SOCIO-CULTURAL ENVIRONMENT

Nepal has demonstrated great geographical diversity ranging from tropical plain to the alpine mountain zone. Such diversity gives rise to various ecological and socio-cultural arrangements within the country. KAHEP is located in between Panchthar and Taplejung districts of Mechi Zone of Eastern Development Region (EDR) of Nepal. Although of the project components of KAHEP lie in Panchthar district, the project area of KAHEP covers four VDCs of two different districts i.e. Taplejung and Panchthar.

The description of the socio-cultural environment of the region, districts, VDCs and surveyed household regarding KAHEP is described below.

### 4.1 Eastern Development Region (EDR)

Eastern Region is one of Nepal's five development regions. It is located at the eastern end of the country and comprises three zones (Mechi, Koshi and Sagarmatha) and 16 districts.

#### 4.1.1 Population and demography

**Table 4-1: Demographic features of EDR**

| Categories             |                                      | EDR     | Nepal    |
|------------------------|--------------------------------------|---------|----------|
| Total Population       |                                      | 5344476 | 23151423 |
| Male                   |                                      | 2670622 | 11563921 |
| Female                 |                                      | 2673854 | 11587502 |
| Population Growth Rate |                                      | 1.84    | 2.25     |
| Average Household Size |                                      | 5.28    | 5.44     |
| Population Density     |                                      | 188     | 157      |
| Caste and Ethnicity    | Hindu High Caste <sup>4</sup>        | 25.3    | 32.8     |
|                        | <i>Adivasi Janajati</i> <sup>5</sup> | 48.5    | 37.2     |
|                        | <i>Dalits</i> <sup>6</sup>           | 10.7    | 11.8     |
|                        | Others <sup>7</sup>                  | 15.5    | 18.2     |

Source: CBS, 2001

#### Population and demography

Table 4-1 shows that the total population of EDR is 5344476 constituted of 2670622 (49.97%) male and 2673854 (50.03%) female. Average population growth is 1.84 per year and average household size is 5.28. The average population density of the region is 188 persons/km<sup>2</sup>. In terms of caste and ethnicity, *Adivasi Janajati* constitutes nearly half of the total population (48.5 %) followed by Hindu High Caste (25.3%), *Dalits* (10.7%) and others (15.5%). Out of the total *Adivasi Janajati*, 33.1 % are Hill *Janajati*, 3.6 % are Newar and Sherpa and 11.5 % are Terai *Janajati*.

<sup>4</sup> Includes all Hill /Terai *Brahman* and *Chetri* (High Caste groups)

<sup>5</sup> Includes all the Hill and Terai *Adivasi Janajati* (indigenous nationalities). Hill *Janajati* includes (24) *Bankariya*, *Hayu*, *Kusbadiya*, *Kusunda*, *Lepcha*, *Surel*, *Baramu*, *Thami (Thangmi)*, *Chepang*, *Bhujel*, *Dura*, *Pahari*, *Phree*, *Sunuwar*, *Tamang*, *Chantyal*, *Gurung (Tamu)*, *Jirel*, *Limbu (Yakthumba)*, *Magar*, *Rai*, *Yakkha*, *Hyolmo* and *Newar*. Terai *Janajati* includes (10) *Kisan*, *Meche (Bodo)*, *Dhanuk (Rajbansi)*, *Jhagad*, *Santhal (Satar)*, *Dhimal*, *Gangai*, *Rajbansi (Koch)*, *Tajpuriya* and *Tharu*.

<sup>6</sup> Includes all the Hill and Terai *Dalits* (the oppressed caste Groups)

<sup>7</sup> Includes all the Terai middle Caste Groups, Muslim and unspecified groups

#### 4.1.2 Health and sanitation

**Table 4-2: Health and sanitation status of EDR**

| Category                      |                  | EDR (%) | Nepal (%) |
|-------------------------------|------------------|---------|-----------|
| Access to Safe drinking water | Piped Water      | 35.6    | 53.4      |
|                               | Tube well        | 48.7    | 28.6      |
| Toilet Facilities             | Ordinary toilet  | 30.4    | 23.8      |
|                               | Modern toilet    | 15.7    | 23.0      |
| Lighting Energy               | Electricity      | 30.5    | 39.8      |
|                               | Kerosene         | 68.6    | 57.7      |
| Cooking Energy                | Wood             | 66.3    | 66.2      |
|                               | Kerosene and LPG | 14.2    | 21.4      |

Source: CBS, 2001

Table 4-2 shows the basic parameters regarding the health and sanitation status of EDR. Considering piped water and tube well as the source of safe drinking water, about 84.3% households have access to safe drinking water in contrast to the national average of 82%. Similarly, toilet use (modern and ordinary), of EDR is nearly equal to the national average (46.8%). Firewood (66.3%) and Kerosene (68.5%) are the major household energy sources for cooking and lighting respectively. Like other parts of the country, there is variation in the data between urban and rural area, caste and ethnicity, Hill and Terai. In EDR, in terms of caste and ethnicity, about 83.3 % households of High castes, 80.7 % Adivasi Janajati and 82.7 % Dalits have the access to safe drinking water (Acharya et al 2009).

#### 4.1.3 Development indicators

**Table 4-3: Various development indicators for EDR**

| Development Indicator                  |                 | EDR   | Nepal |
|--|-----------------|-------|-------|
| Human Development Index (HDI)          |                 | 0.526 | 0.509 |
| Human Poverty Index (HPI)              |                 | 37.1  | 39.6  |
| Gender Relater Development Index (GDI) |                 | 0.516 | 0.499 |
| Gender Empowerment Measure (GEM)       |                 | 0.516 | 0.496 |
| Life Expectancy (Years)                |                 | 66.16 | 68.06 |
| Literacy Rate                          | Male Literacy   | 66.5  | 65.5  |
|  | Female Literacy | 45.0  | 42.8  |

Source: UNDP, 2009

In CBS 2001, the literacy rate for EDR is 55.7 % (male literacy 66.5% and female literacy 45.0%) which is slightly higher than the national average of 54.1% (male literacy 65.5% and female literacy 42.8%). According to the UNDP report 2009, the average national Human Development Index (HDI) is 0.509 whereas for EDR, it is 0.526. Similarly, the Human Poverty Index (HPI) for EDR is 37.1 that is lower than the national average of 39.6. Likewise, the Gender Related Development Index (GDI) and Gender Empowerment Measure (GEM) values for EDR (GDI 0.516 and GEM 0.516) are also better than the national averages (GDI 0.499 and GEM 0.496) (Table 4-3).

From above mentioned parameters, the development indicator for EDR is good compared to the national indicators. However, within the EDR, the lower plain and urban areas are more developed



than the upper hill/mountain and rural areas. Infrastructure and facilities like road and transportation, communication, electricity, education and health care are more concentrated in the plain areas than the mountain/hill areas.

## 4.2 Project districts

### 4.2.1 Physical location

The Project districts (Taplejung and Panchthar) lie in Mechi Zone of Eastern Development Region of Nepal. Taplejung district is bordered by Sikkim of India in the east, Sankhuwasabha district in the west, Tibet of China in the north and Dhankuta, Terhathum and Panchthar districts in the south. Similarly, Panchthar district is surrounded by Sikkim and Darjeeling of India to the east, Terhathum and Dhankuta to the west, Taplejung to the north, Ilam to the south. The Taplejung and Panchthar districts occupy an area of 3,646 km<sup>2</sup> and 1241 km<sup>2</sup> which represents 2.47 % and 0.84 % of the total land area of the country respectively.

### 4.2.2 Demography

#### *Total population and household size*

**Table 4-4: Demographic features of the project districts**

| <b>Ethnicity</b>               | <b>Taplejung</b> | <b>Percent of District</b> | <b>Panchthar</b> | <b>Percent of District</b> |
|--------------------------------|------------------|----------------------------|------------------|----------------------------|
| Hindu High Caste               | 31012            | 23.03                      | 47467            | 23.49                      |
| <i>Adivasi Janajati</i>        | 93368            | 69.33                      | 139443           | 69.03                      |
| <i>Dalits</i>                  | 9207             | 6.84                       | 11088            | 5.48                       |
| Others                         | 1082             | 0.80                       | 4058             | 2.0                        |
| <b>Total</b>                   | <b>134698</b>    | <b>100</b>                 | <b>202056</b>    | <b>100</b>                 |
| <b>Male</b>                    | 66205            | <b>49.15</b>               | 99,042           | <b>49.02</b>               |
| <b>Female</b>                  | 68493            | <b>50.85</b>               | 103,014          | <b>50.98</b>               |
| <b>Total HHS</b>               | 24764            |                            | 37260            |                            |
| <b>Average HHS</b>             | 5.42             |                            | 5.44             |                            |
| <b>Population Growth rate</b>  | 1.0              |                            | 1.45             |                            |
| <b>Density</b>                 | 162.8            |                            | 36.9             |                            |
| <b>Per Capita Income US \$</b> | 215              |                            | 197              |                            |

Source: CBS, 2001

In 2001 Census, Panchthar and Taplejung districts have a population of 2, 02,056 and 1, 34,698 respectively. These districts together provides habitat to a population of 3, 36,654 which is 1.48 % of the total population of Nepal. The proportion of male population constitutes 49.21 and 49.01 % in Taplejung and Panchthar district respectively. Further, Panchthar and Taplejung districts have 37,260 and 24,764 households with an average family size of 5.42 and 5.44 respectively. The population density is around 163 and 36.9 per sq. km for Panchthar and Taplejung respectively. The rate of annual population growth (1991 to 2001) is estimated to be 1.45 and 1.0 for Panchthar and Taplejung respectively. *Adivasi Janajati* constitutes more than two third population of the Project districts (Table 4-4).

**Caste and ethnic distribution****Table 4-5: Caste/ ethnic composition of the project districts**

| <b>Ethnicity</b>     | <b>Taplejung</b> | <b>Percent of District</b> | <b>Panchthar</b> | <b>Percent of District</b> |
|----------------------|------------------|----------------------------|------------------|----------------------------|
| <i>Limbu</i>         | 56234            | 41.75                      | 81488            | 40.33                      |
| <i>Rai</i>           | 6779             | 5.18                       | 28157            | 13.94                      |
| <i>Brahmin-hill</i>  | 13974            | 10.37                      | 25304            | 12.52                      |
| <i>Chhetri</i>       | 15982            | 11.87                      | 21520            | 10.65                      |
| <i>Sherpa</i>        | 12585            | 9.34                       | 745              | 0.37                       |
| <i>Tamang</i>        | 5530             | 4.11                       | 13788            | 6.82                       |
| <i>Kami</i>          | 5958             | 4.42                       | 6537             | 3.24                       |
| <i>Magar</i>         | 1151             | 0.85                       | 6389             | 3.16                       |
| <i>Damail/Dholi</i>  | 2115             | 1.58                       | 3647             | 1.80                       |
| <i>Gurung</i>        | 6077             | 4.51                       | 3133             | 1.55                       |
| <i>Newar</i>         | 2242             | 1.67                       | 3113             | 1.54                       |
| <i>Sunuwar</i>       | 1303             | 0.97                       | 1985             | 0.98                       |
| <i>Sarki</i>         | 1134             | 0.84                       | 904              | 0.45                       |
| <i>Sanyasi</i>       | 1056             | 0.78                       | 913              | 0.45                       |
| <i>Bhote</i>         | 635              | 0.47                       | 50               | 0.03                       |
| <i>Bhujel/Gharti</i> | 538              | 0.40                       | 333              | 0.64                       |
| <i>Tharu</i>         | 117              | 0.09                       | 185              | 0.09                       |
| <i>Yadav</i>         | 69               | 0.05                       | 125              | 0.06                       |
| <i>Yakkha</i>        | 204              | 0.15                       | 627              | 0.31                       |
| <i>Teli</i>          | 29               | 0.02                       | 100              | 0.05                       |
| <i>Others</i>        | 984              | 0.73                       | 3833             | 1.90                       |
| <b>Total</b>         | <b>134698</b>    | <b>100</b>                 | <b>202056</b>    | <b>100</b>                 |

Source: CBS, 2001

Table 4-5 shows the population size in the project districts based on caste/ethnicity groups (2001 Census). *Limbu* constitute the highest percentage of population in both districts (Panchthar 40.33 % and Taplejung 41.75 %). This is followed by *Brahmins* in Taplejung and *Rai* in Panchthar. Among *Dalits*, *Kami* (*Biswokarma*) constitute the highest percent of population in both districts (4.11 % in Taplejung and 6.28 % in Panchthar).

**Sex structure**

Out of the total population of the Project districts, male constitute 49.06% whereas the female constitute 50.94%. In both the project districts, the female population exceeds the male population (Table 4-4). The average sex ratio for the project districts is 1:1.04 which is lower than the national average of 1:1.02.

### Age structure

**Table 4-6: Age structure of the project districts**

| Districts         | Population   |              |              |              |              |              |               |              |
|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|
|                   | < or 9 years |              | 10-14 years  |              | 15-59 years  |              | 60 or > years |              |
|                   | Male         | Female       | Male         | Female       | Male         | Female       | Male          | Female       |
| <b>Taplejung</b>  | 18366        | 18010        | 9114         | 9242         | 33642        | 36298        | 5083          | 4943         |
| <b>Panchthar</b>  | 27641        | 27100        | 14448        | 14316        | 49743        | 54776        | 7210          | 6822         |
| <b>Total</b>      | <b>46007</b> | <b>45110</b> | <b>23562</b> | <b>23558</b> | <b>83385</b> | <b>91074</b> | <b>12293</b>  | <b>11765</b> |
| <b>Percentage</b> | 13.66        | 13.40        | 7.0          | 7.0          | 24.76        | 27.04        | 3.65          | 3.49         |

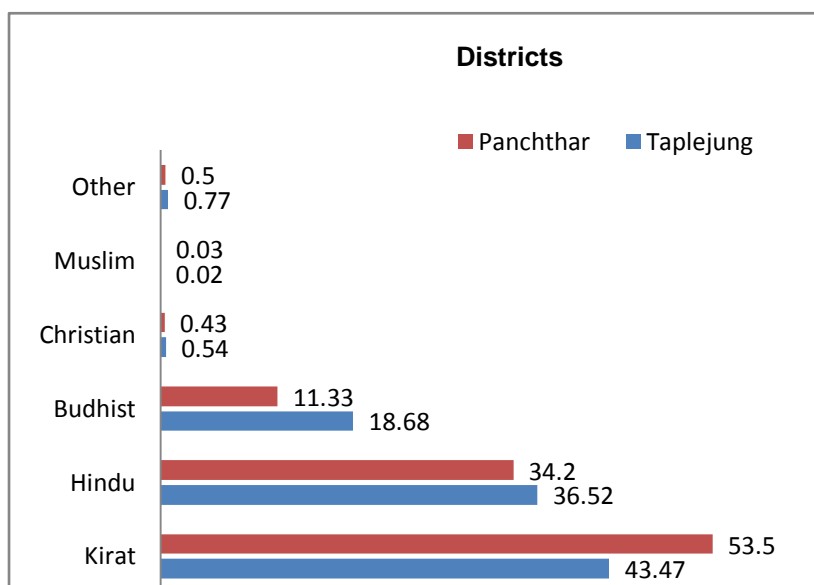
Source CBS, 2001

Table 4-6 shows the age structure of the Project districts. Out of the total population of the project districts, the children population (below 15 years) constitutes 41.06 % that is higher than the national average (39.4 %). Likewise, elderly population (60 years and above) constitutes 7.14 whereas the national average is 6.5 %. The working age population (15-59 years) is 51.8 % of the total population.

#### 4.2.3 Literacy

According to the 2001 Census, the literacy rate of the population of six years and above for Panchthar is 55.40%, out of which 65.7% is male and 45.60% is female; whereas for Taplejung it is 52.43%, out of which 62.52% are male and 42.34% are females respectively.

#### 4.2.4 Religion



**Chart 4-1: Religion of the project districts**

In terms of religion, Kirat religion dominates the other religions in both the districts- Taplejung (43.47%) and Panchthar (53.5%) followed by Hindu 36.52% in Taplejung and 34.2% in Panchthar. The third major religion is Buddhism in both the districts; Taplejung (18.68%) and Panchthar (11.33%) followed by Christianity (Chart 4-1)

#### 4.2.5 Language

**Table 4-7: Five major languages spoken in the project districts**

| SN | Language | District      |               |
|----|----------|---------------|---------------|
|    |          | Taplejung (%) | Panchthar (%) |
| 1. | Nepali   | 39.86         | 33.43         |
| 2. | Limbu    | 9.43          | 39.57         |
| 3. | Bantawa  | 37.00         | 12.25         |
| 4. | Tamang   | 3.97          | 6.62          |
| 5. | Magar    | 3.76          | 3.00          |

Source: District Profiles (Taplejung and Panchthar)

Nepali is the language of communication (lingua franca) for almost all the population. However, there is variation in the mother tongues among the population depending upon the caste and ethnicity. The major five languages spoken in the project districts are presented in Table 4-7.

The above data suggest that Nepali language dominates the other languages (39.86%) in Taplejung whereas *Limbu* language dominates (39.57%) in Panchthar. Although *Limbu* is the dominant population of Taplejung, the number of people that are speaking *Limbu* language is only 9.43 %.

#### 4.2.6 Land use pattern

**Table 4-8: Land use patterns in Panchthar and Taplejung districts**

| Land Use                                   | Panchthar District |        | Taplejung District |            |
|--|--------------------|--------|--------------------|------------|
|  | Area ( Ha)         | %      | Area ( Ha)         | Percentage |
| Cultivated Land                            | 41222              | 33.08  | 27551              | 7.58       |
| Cultivable Land                            | 19044              | 15.29  | -                  |            |
| Forest                                     | 57707              | 46.32  | 155019             | 42.62      |
| Pasture                                    | 5292               | 4.26   | 35384              | 9.73       |
| Others( rocks, slope, rivers and rivulets) | 1334               | 1.07   | 145746             | 40.07      |
| <b>Total</b>                               | 124590             | 100.00 | 363700             | 100.00     |

Source: Annual Agriculture Development Program and Statistics, 2006/07, District Agriculture Development Office, Panchthar and Taplejung

The project districts display vast diversity of landscape ranging from lower riverine plain to the high steep slopes of the high mountains. The detail of the land use pattern is presented in Table 4-8.

In Panchthar district, out of 48 % of cultivable land only 33% is cultivated whereas in Taplejung district cultivated land consists of only 7.58 % of the total land cover. In both the Project districts more than 50% of the land is covered by the forests and pasture.

#### 4.2.7 Economic activities

The overall economic structure of the project districts is characterized by a mixture of farm and nonfarm activities. Farm activities are subsistence in nature that are characterized by fragmented land-holding and low farming inputs. Livestock and forestry form an integral part of the farming system.

Remittance, small trade and businesses, cottage industries, agro and forest based enterprises and service represent the major non-farm activities of the project districts. The description of farm and non-farm activities of the project districts is described below.

##### A. Farm activities

**Table 4-9: Area, production and yield of major crops in the project districts, 2008/2009**

| Crops      | Panchthar District |            |       | Taplejung District |            |       | Nepal   |            |       |
|------------|--------------------|------------|-------|--------------------|------------|-------|---------|------------|-------|
|            | Area               | Production | Yield | Area               | Production | Yield | Area    | Production | Yield |
| Paddy      | 8854               | 15879      | 1793  | 8783               | 16048      | 1827  | 1555940 | 4523693    | 2907  |
| Maize      | 14160              | 22133      | 1563  | 13167              | 28495      | 2161  | 875428  | 1930669    | 2205  |
| Millet     | 5992               | 7750       | 1293  | 3050               | 3567       | 1170  | 265889  | 292683     | 1101  |
| Wheat      | 4130               | 6300       | 1525  | 1890               | 2285       | 1209  | 694950  | 1343862    | 1934  |
| Barley     | 515                | 515        | 1000  | 240                | 264        | 1100  | 25817   | 23224      | 900   |
| Oilseed    | 560                | 420        | 750   | 502                | 390        | 777   | 181361  | 135494     | 747   |
| Potato     | 4816               | 55097      | 11440 | 3633               | 41406      | 11397 | 181900  | 2424048    | 13326 |
| Cardamom   | 1605               | 722        | 450   | 3850               | 2021       | 520   | 11849   | 7037       | 590   |
| Ginger     | 109                | 1221       | 11200 | 200                | 2400       | 12000 | 15838   | 178988     | 11300 |
| Vegetables | 1069               | 11524      | 10780 | 758                | 6565       | 8661  | 225154  | 2754406    | 12233 |

Source: MOAC, 2008/2009

Paddy, maize, wheat, millet, and barley are the major crops cultivated in the Project district. Likewise, potato, cauliflower, cabbage, radish, tomato and cucumber are the common vegetables grown in the project districts according to the diversity of the land. In addition to this ginger, cardamom and chilies are also produced in the project districts that have high commercial value. Table 4-9 presents total production and yield of the particular crops that are grown in the project districts.

Table 4-9 illustrates that the average yields of the paddy, maize, wheat, potato, cardamom and vegetables in project districts are lower than the national averages, whereas the yield of millet, barley and oilseeds is higher than the national average. This indicates that the land quality of the project districts is low in comparison to the national average.

##### B. Nonfarm activities

Foreign employment is the major off farm economic activity especially for the economically active male population of the Project districts. A study carried out by ABPSD (2009) shows that the remittance continues to be the source of highest off-farm income of the households in Taplejung and Panchthar district. Gulf countries like Saudi Arabia, Qatar, UAE, and Malaysia are the major destinations for foreign employment. Engagement in Indian and British Army and Singapore Police are popular especially among the *Adivasi Janajati* groups (*Rai and Limbu*) of the Project districts. The income derived from the salary and pension from the armed forces has significant role in the local economy of these districts.

Apart from foreign employment, the engagement of the educated population in the public and private institutions for employment is also a nonfarm activity that contributes to the economy of these districts to some extent. In addition, seasonal migration to nearby urban centers in Nepal and India; small trade, business and cottage industries also contribute to the economy of these districts.

#### 4.2.8 Access to civic amenities

##### *Drinking water, energy use for cooking and health*

**Table 4-10: Distribution of health institutions in project districts (2005/06)**

| Health Institutions        | Number     |            | Total      |
|----------------------------|------------|------------|------------|
|                            | Taplejung  | Panchthar  |            |
| Hospitals                  | 1          | 1          | 2          |
| Primary Health Care Centre | 2          | 2          | 4          |
| Health Post                | 8          | 10         | 18         |
| Sub-Health Post            | 43         | 29         | 72         |
| PHC Outreach Clinic        | 200        | 279        | 479        |
| EPI Clinic                 | 188        | 217        | 405        |
| NGO/INGO & Private Sector  | 4          | 5          | 9          |
| <b>Total</b>               | <b>446</b> | <b>543</b> | <b>989</b> |

Source: Department of Health Service 2008/2009 cited in District Profile of Nepal-2010/11

In terms of safe drinking water, Taplejung district has better access (90.7 %) compared to Panchthar (69.3 %), whereas in terms of toilet facilities, Panchthar district (57.1 %) has better access than Taplejung (47.80 %). Likewise, about 98.1% and 95.9% of the total households of Taplejung and Panchthar respectively use firewood for cooking.

Both the districts have almost equal level of health care facilities (Table 4-10). A number of health institutions are spread over different parts of these districts. The district hospitals, primary health care centers, health posts, sub health posts, Primary Health Care (PHC) and outreach clinics along with some private and nongovernmental health centers are providing health care facilities in Taplejung and Panchthar districts.

As per health institution density<sup>8</sup> Panchthar district comes in 35<sup>th</sup> position with Health Institution Density (HID) of 2.65. Similarly, Taplejung comes in 41<sup>th</sup> position with HID value of 2.44. These values suggest that both the Project districts fall in the Intermediate level of Development (CBS, ICIMOD, MENRIS, SNV Nepal, 2003).

##### **Transportation, electricity and communication**

A 200 km long Mechi Highway is the only national road that connects these districts to the East West Highway at Charali of Jhapa district. This road passes through the Ilam Bazaar (headquarter of Ilam district) and Phidim (headquarters of Panchthar district) on its way to Fungling Bazaar (headquarter of Taplejung district) from Charali. Besides, some of the newly constructed village link roads also connect some rural areas of these project districts to the Mechi Highway.

<sup>8</sup> Number of health Institution Per 1000 of the population divided by Population distance

The headquarters of these districts are the major permanent market for the local population. However, both the districts have a number of periodic *hat bazaars*<sup>9</sup> that are operated in local market places of these districts.

Both the project districts have low access to electricity facility. Panchthar district has a total of 960 KW of electricity generated through micro-hydros that covers Phidim, Yashok, Nagin, and Ranigunj VDCs. In Taplejung, the electricity facility covers only Fungling Bazaar, the district head quarter and a telephone network of 150 C-Dot system is providing communication network, and 510 lines are currently in operation.

## 4.3 Project VDCs

### 4.3.1 Settlement patterns

The settlements of the project VDCs are scattered in the various locations ranging in the size from as small as two houses to more than 30 houses. The harmony and peace between various caste and ethnic group within these settlements shows the characteristic of the mixed type communities.

The houses are made of mud and stone with stone/slate, corrugated/non corrugated metal sheets and thatched roofs. However, there are few concrete houses in the market areas of Kabeli Bazaar, Singhapur and Bhalu Chowk with more population concentration than other areas. *Dhusenni, Rajabesi and Kabeli Bazaar* are the nearest settlements from the headworks having *Limbus, Tamangs, Brahmins* and *Chhetries* as the major inhabitants. Similarly, *Majhis, Limbus, Tamangs, Brahmins* and *Chhetries* are the major inhabitants of Majhitar (Pinasi) and Kodekpa; the nearest settlements from the powerhouse area. Likewise, Jogi Danda (Bhadure), Khalte, Chipewa, Kharelgaun, Khaharegaun and Myakha are the nearest settlements in the downstream areas.



**Photo 6: Kabeli Bazaar on the left bank of Kabeli River**



**Photo 7: Jogidanda downstream settlement**

<sup>9</sup> *Hat Bazaar* refers to the temporary markets that are opened on the particular week days or during occasions (national and local festivals).

### 4.3.2 Demography

Demographic characteristics of the project affected VDCs is presented in Table 4-11.

**Table 4-11: Demographic characteristics of the project affected VDCs**

| VDCs         | Population   |                 |                 |                        |                         |                       |                      | Total HH    | Average HH Size | M:F           |
|--------------|--------------|-----------------|-----------------|------------------------|-------------------------|-----------------------|----------------------|-------------|-----------------|---------------|
|              | Total        | Sex             |                 | Ethnicity              |                         |                       |                      |             |                 |               |
|              |              | Male            | Female          | Hindu high Cast        | Adivasi Janajati        | Dalits                | Others               |             |                 |               |
| Nangkholyang | 4015         | 1941<br>(48.34) | 2074<br>(51.66) | 741<br>(18.45)         | 2965<br>(73.84)         | 244<br>(6.08)         | 65<br>(1.62)         | 730         | 5.33            | 1:1.06        |
| Thechambu    | 3772         | 1796<br>(47.61) | 1976<br>(52.39) | 1690<br>(44.80)        | 1843<br>(48.86)         | 233<br>(6.18)         | 06<br>(0.16)         | 698         | 5.23            | 1:1.10        |
| Amarpur      | 7743         | 3743<br>(48.34) | 4000<br>(51.66) | 3457<br>(44.65)        | 3658<br>(47.42)         | 512<br>(6.61)         | 116<br>(1.50)        | 1375        | 5.63            | 1:1.07        |
| Panchami     | 5568         | 2669<br>(47.93) | 2899<br>(52.07) | 2439<br>(43.80)        | 2796<br>(50.21)         | 304<br>(5.46)         | 29<br>(0.52)         | 1000        | 5.57            | 1:1.09        |
| <b>Total</b> | <b>21098</b> | <b>10149</b>    | <b>10946</b>    | <b>8327</b><br>(39.47) | <b>11262</b><br>(53.38) | <b>1293</b><br>(6.13) | <b>216</b><br>(1.02) | <b>3803</b> | <b>5.54</b>     | <b>1:1.07</b> |

Source: CBS, 2001

Note: The figures in parentheses are percentages.

Note: Dalits includes Biswakarm, Dholi (Damai) and Sarki. Likewise, High Caste group includes Hill Brahmins, Chhetri, and Sanyasi (Jogi) in above table.

#### **Total population ethnicity and household size**

The project VDCs have a population of 21098 with various caste/ethnic groups (Table 4-11). Amarapur VDC has the highest population (7743) followed by Panchami VDC (5568), Nangkholyang VDC (4015) and Thechambu VDC (3772). Among the various ethnic groups, Adivasi Janajati constitute 53.38% of total population of the project VDCs. Among the Adivasi Janajati, Limbus are the dominant group in all the project VDCs. Rai, Tamang, Newar, Gurung, and Majhi are the remaining Adivasi Janajati groups present in the project VDCs. Similarly, Hindu High Caste (Brahmin and Chhetri) constitutes about 39.47% of the total population. 'Dalits'<sup>10</sup> constitute about 6.13% of the total population. Among the VDCs, Nangkholyang is overwhelmingly dominated by Adivasi Janajati (73.84 %) followed by Panchami (50.21 %), Thechambu (48.86 %) and Amarapur (47.42 %). The average household size for the project VDCs is 5.54 (CBS, 2001) which is slightly higher than the national average which is 5.44 in CBS 2001.

#### **Sex structure**

The total population of the project VDCs is 21098 out of which 10,149 (48.10 %) are males and 10946 (51.88 %) are females. The average male/female sex ratio is 1:1.07 which is lower than the district and the national averages. Among them, Thechambu VDC is the lowest in terms of sex ratio (1:1.10) (Table 4-11).

<sup>10</sup> Dalits of the Project Area includes Sarki, Kami and Damai



**Age structure****Table 4-12: Age structure of the population of the project affected VDCs**

| Districts | VDCs              | Population   |             |             |               | Total        |
|-----------|-------------------|--------------|-------------|-------------|---------------|--------------|
|           |                   | < or 9 years | 10-14 years | 15-59 years | 60 or < years |              |
| Tapejung  | Nangkholyang      | 1554         | 172         | 684         | 86            | 2496         |
|           | Thechambu         | 1075         | 529         | 1859        | 309           | 3772         |
| Panchthar | Amarpur           | 2216         | 1135        | 3737        | 573           | 7661         |
|           | Panchami          | 1424         | 828         | 2915        | 401           | 5568         |
|           | <b>Total</b>      | <b>6269</b>  | <b>2664</b> | <b>9195</b> | <b>1369</b>   | <b>19497</b> |
|           | <b>Percentage</b> | 32.15        | 13.66       | 47.16       | 7.02          | 100.0        |

Source: CBS, 2001 and District Profiles of Tapejung and Panchthar

Table 4-12 shows the age structure of the project affected VDCs. The children population (below 15 years of age) constitutes 45.81 % that is higher than the national average (39.4 %). Likewise, elder population (60 and above) constitutes 7.02 % of the total population, which is also higher than the national average (6.5 %). The working age population (15-59) is 47.16 %. The analysis of age composition of the project VDCs shows that the dependency ratio<sup>11</sup> of total population regardless of caste/ethnicity is 112.04 that is higher than the national average (84).

**4.3.3 Literacy**

Table 4-13 provides the detail of the literacy status of the project affected VDCs.

**Table 4-13: Literacy population (6 years and above) of project VDCs**

| Project VDCs | Can't Read and Write |                |                | Can Read only |               |               | Can Read and Write |                |                | Not Stated |              |              |
|--------------|----------------------|----------------|----------------|---------------|---------------|---------------|--------------------|----------------|----------------|------------|--------------|--------------|
|              | Total                | Male           | Female         | Total         | Male          | Female        | Total              | Male           | Female         | Total      | Male         | Female       |
| Nangkholyang | 1336                 | 349<br>(26.1)  | 787<br>(73.9)  | 230           | 89<br>(42.6)  | 132<br>(57.4) | 2021               | 1153<br>(57.0) | 867<br>(42.9)  | 17         | 08<br>(47.1) | 09<br>(52.9) |
| Thechambu    | 1015                 | 307<br>(30.2)  | 708<br>(69.7)  | 129           | 93<br>(72.1)  | 36<br>(27.9)  | 2091               | 1147<br>(54.8) | 944<br>(45.1)  | 08         | -            | 08<br>(100)  |
| Amarpur      | 2529                 | 1018<br>(40.2) | 1511<br>(59.7) | 466           | 240<br>(48.5) | 226<br>(51.5) | 3302               | 1768<br>(53.5) | 1534<br>(46.5) | 09         | -            | 09<br>(100)  |
| Panchami     | 1784                 | 559<br>(31.3)  | 1226<br>(68.7) | 507           | 338<br>(66.7) | 168<br>(33.3) | 2568               | 1449<br>(56.4) | 1119<br>(43.6) | -          | -            | -            |
| Total        | 6664                 | 2233<br>(33.5) | 4431<br>(66.5) | 1332          | 769<br>(57.7) | 563<br>(42.3) | 9982               | 5517<br>(55.3) | 4464<br>(44.7) | 34         | 08<br>(23.5) | 26<br>(76.5) |

Source: CBS 2001

Note: The figures in parentheses are percentages

<sup>11</sup> Dependency ratio is defined as the number of people in "dependent ages" of young ages (0-14) and old ages (60 years and above) per hundred people in "economically active ages" of 15-59 years.

In the project affected VDCs, male and female literacy rate for population of six years and above (Can Read and Write) stands at 55.3 % and 44.7 % respectively. The male literacy rate for the project VDCs is lower than the average national literacy rate of male (65.5 %), but the female literacy rate is slightly higher than the average national literacy rate (42.8 %). Among the project VDCs, Nangkholyang has the highest proportion of male literates (57.0 %) and Amarpur has the lowest proportion (53.5 %). Similarly, Amarpur has the highest proportion of female literates (46.5 %) and Nangkholyang has the lowest percentage (42.9 %) (Table 4-13).

#### 4.3.4 Economy, livelihood patterns and practices

Like the project districts, the overall economic structure of the project VDCs is also characterized by a mixture of farm and nonfarm activities. Farm activities include agriculture and livestock raising that are subsistence in nature and are characterized by fragmented land-holding and low inputs. Foreign employment, seasonal migration, small trade and businesses, agro and forest based micro-enterprises and daily wages are the major non-farm activities of the project VDCs. Remittance from Gulf countries like Saudi Arabia, Qatar, UAE, and Malaysia and salary and pension from the armed forces in Britain and India are the major household income sources of the project VDCs. Engagement in Indian and British Army, and Singapore Police are popular especially among the *Adivasi Janajati* groups (*Rai* and *Limbu*) of the project VDCs.

#### 4.3.5 Cultural background of the project VDCs

**Table 4-14: Population by mother tongue and religion of the project VDCs**

| Population      |           | Project VDCS |            |             |                | Total        |
|-----------------|-----------|--------------|------------|-------------|----------------|--------------|
|                 |           | Amarpur %    | Panchami % | Thechambu % | Nangkholyang % |              |
| Religion %      | Hindu     | 61.78        | 52.96      | (53.10)     | (36.34)        | <b>53.06</b> |
|                 | Kirat     | 24.85        | 42.76      | (41.30)     | (48.67)        | <b>37.05</b> |
|                 | Buddha    | 12.86        | 4.02       | 5.33)       | (14.62)        | <b>9.52</b>  |
|                 | Christian | 0.48         | 0.23       | 0           | (0.20)         | <b>0.28</b>  |
|                 | Others    | 0.03         | 0.02       | 0.27        | (0.17)         | <b>0.09</b>  |
| Mother tongue % | Nepali    | 62.4         | 53.1       | 53.1        | 33.1           | <b>50.4</b>  |
|                 | Limbu     | 20.1         | 38.1       | 38.7        | 18.8           | <b>28.9</b>  |
|                 | Bantawa   | 3.8          | 3.2        | 1.1         | 22.8           | <b>7.7</b>   |
|                 | Tamang    | 12.5         | 0.4        | 0.9         | 1.2            | <b>3.7</b>   |
|                 | Gurung    | 0            | 0          | 4.2         | 10.1           | <b>3.6</b>   |
|                 | Others    | 1.2          | 5.2        | 2.0         | 14             | <b>5.6</b>   |

Source: CBS, 2001

#### **Mother tongue**

Nepali is the mother tongue of more than 62 % of the total population in Amarpur VDC which is one of the most affected VDCs by the Project. Likewise; Nepali is the mother tongue of more than 53 % of the total population in Thechambu and Panchami VDCs. The languages reported as mother tongue in the affected VDCs are presented in Table 4-14.

Nepali is used as a lingua franca. Besides, the *Adivasi Janajati* groups use their respective mother tongue to communicate with the other members of their groups. Most of these indigenous languages are in oral traditions. Each of them has a rich oral heritage of traditional folk stories and songs handed down from generation to generation. *Limbu* language has its own script known as *Kirati*

*Srijanga* script. These indigenous languages are categorized as 'The Safe'<sup>12</sup> Indigenous Language of Nepal' (ibid pp 29).

### Religion

According to the CBS 2001, Hindu (53.06 %), *Kirat* (37.05 %) and Buddhist (9.52 %) represent the major religions practiced by the people of the project VDCs (Table 4-14). The VDC wise distribution of population by religion is different. The project VDCs, except Nangkholyang, are dominated by Hindus; Amarpur (61.78 %), Thechambu (53.10 %) and Panchami (52.96 %). However, Nangkholyang is dominated by *Kirat* (48.67 %) followed by Hindu (36.34 %) (Table 4-14).

## 4.4 Profile of surveyed households

All the households that are likely to experience physical impacts due to the project as per the Engineering Design of 2010 were selected purposively and interviewed using a structure questionnaire to understand the demographic, economic and cultural environment of the affected families, their perception regarding the project, expected compensation for the lost property, types of resettlement package desired etc. The households included for the survey were taken from the direct impact areas of the project. The direct impact area includes villages where most of the project activities will take place, thus high level of impacts is anticipated (Table 3-2).

A total of 46 households from the project affected VDCs are selected for socio-economic survey. The majority of the households are located in Amarpur VDC (30 HHs) followed by Thechambu VDC (14 HHs) and the remaining (2 HHs) are located in Panchami VDC

### 4.4.1 Demography

The demographic features of the surveyed households are presented in Table 4-15.

**Table 4-15: Demographic features of surveyed households**

| Caste ethnicity | Household |         |         | Population |       |       | Average HH size | Age Groups |       |       |          |
|-----------------|-----------|---------|---------|------------|-------|-------|-----------------|------------|-------|-------|----------|
|                 | Total     | M. Head | F. Head | Total      | M     | F     |                 | 0-4        | 5-14  | 15-59 | 60 above |
| <i>Limbu</i>    | 23        | 22      | 1       | 177        | 90    | 87    | 7.69            | 8          | 35    | 114   | 20       |
| <i>Brahmin</i>  | 5         | 5       | 0       | 47         | 23    | 24    | 9.4             | 3          | 4     | 33    | 7        |
| <i>Chhetri</i>  | 6         | 6       | 0       | 46         | 25    | 21    | 7.66            | 2          | 8     | 29    | 7        |
| <i>Majhi</i>    | 5         | 3       | 2       | 32         | 19    | 13    | 6.4             | 1          | 9     | 18    | 4        |
| <i>Tamang</i>   | 7         | 7       | 0       | 61         | 29    | 32    | 8.71            | 7          | 11    | 40    | 3        |
| Total           | 46        | 43      | 3       | 363        | 186   | 177   | 7.89            | 21         | 67    | 234   | 41       |
| %               | 100       | 93.48   | 6.52    | 100        | 51.24 | 48.76 |                 | 5.80       | 18.45 | 64.46 | 11.29    |

Source: Field Survey, 2010

### Total population and household size by caste/ethnicity

The total population of the surveyed household is 363 which includes 74.38% *Adivasi Janajati* having population of 270 (177 *Limbu*, 61 *Tamang* and 32 *Majhi*) and 25.61% *Brahmin/Chhetri* with population of 93 (47 *Brahmin* and 46 *Chhetri*). The average household size of the surveyed household is 7.89. The highest household size is recorded for *Brahmin* (9.4) followed by *Tamang* (8.71), *Limbu* (7.69),

<sup>12</sup> According to the criteria set to assess the state of language endangerment in Nepal, proposed by an International Expert meeting at a UNESCO program, 'Safeguarding of the Endangered Languages', March 10-12, 2003 safe language refers to the languages with little danger of being lost.

*Chhetri* (7.66) and *Majhi* (6.4) respectively (Table 4-15). The average household size for the surveyed households is higher than the national and project VDCs average of 5.44 and 5.54 respectively.

### Sex structure

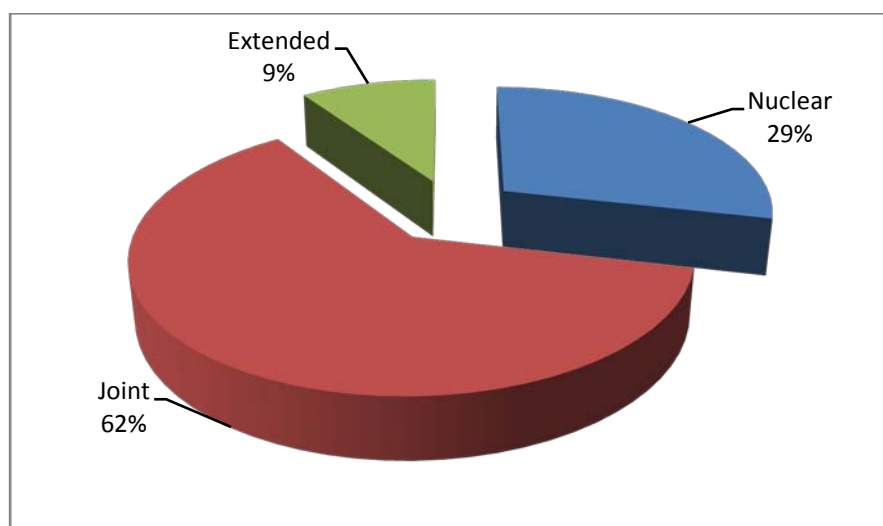
Out of the total population of the surveyed household, there are 186 (51.24 %) male and 177 (48.76%) female. In terms of the caste and ethnicity, the *Majhi* have the higher proportion of male population whereas the *Tamang* have the higher proportion of female population. The sex ratio of the surveyed household is 1:0.95 which is higher than average of the project VDC (1:1.07) and project districts (1:1.03). Out of 46 surveyed households, 43 households (93.48%) are male-headed and only 3 households (6.5%) are female-headed (Table 4-15).

### Age structure

Total population of the surveyed households is divided into four age categories (Table 4-15). Among age categories, 15-59 years age group (economically active population) has the highest proportion (64.46%). The dependent population (below 15 years and above 60 years of age) is 35.52 %. The proportion of below 15 year age group (24.23%) is lower than the national average (39.4 %) and estimated average of the developing countries (35-40%). The lower rate of the population growth of the project districts (1% for Taplejung and 1.45% for Panchthar in 2001) supports these findings.

### Family structure

Three types of family structure are prevailing in the surveyed households; nuclear, joint and extended family. Nuclear family is a family that consists of parents and their unmarried children sharing common kitchen. Similarly, joint family consists of grandparents, parents and their children who share common kitchen. Extended family includes three generations living together sharing common kitchen. The findings from the household survey suggest that the majority (62 %) households have joint family structure followed by nuclear (29 %) and extended (9 %). This indicates the domination of subsistence economy, which demands constant family labor supply. Chart 4-2 shows the family structure of the surveyed households.



**Chart 4-2: Family structure of the surveyed households**

#### 4.4.2 Literacy and education

**Table 4-16: Educational status of population (six years and above)**

| VDC          | Population |                                     |                             |                |           |               |                      |                    |                  | Total      |
|--------------|------------|-------------------------------------|-----------------------------|----------------|-----------|---------------|----------------------|--------------------|------------------|------------|
|              | Illiterate | Literate<br>(informal<br>education) | Literate (Formal Education) |                |           |               |                      |                    |                  |            |
|              |            |                                     | Primary                     | Lower<br>Sec ) | Sec.      | SLC<br>Passed | P+2/<br>PCL<br>assed | Bachelor<br>Passed | Master<br>Passed |            |
| Amarpur      | 37         | 29                                  | 44                          | 27             | 32        | 25            | 18                   | 2                  | 1                | 215        |
| Panchami     | 2          | 0                                   | 5                           | 1              | 2         | 0             | 3                    | 0                  | 0                | 13         |
| Thechambu    | 13         | 12                                  | 17                          | 27             | 20        | 7             | 7                    | 2                  | 0                | 105        |
| <b>Total</b> | <b>52</b>  | <b>41</b>                           | <b>66</b>                   | <b>55</b>      | <b>54</b> | <b>32</b>     | <b>28</b>            | <b>4</b>           | <b>1</b>         | <b>333</b> |
| Percent      | 15.61      | 12.31                               | 19.82                       | 16.52          | 16.22     | 9.61          | 8.41                 | 1.20               | 0.3              | 100        |

Source: Field Survey, 2010

Table 4-16 presents the distribution of educational attainment of the population aged 6 years and above by VDCs. Among the total population of the surveyed households, about 15.61% are illiterate and rest 84.39% are literate. Out of total literate populations, 41 are literate through informal education whereas 240 are literate through formal education system. The overall literacy of the surveyed household is higher than the VDCs, districts and national average.

#### 4.4.3 Religion and language

**Table 4-17: Households by religion and mother tongue**

| Religion | Mother tongue |       |       |        | Total |
|----------|---------------|-------|-------|--------|-------|
|          | Nepali        | Limbu | Majhi | Tamang |       |
| Hindu    | 16            | 0     | 0     | 0      | 16    |
| Buddha   | 0             | 0     | 0     | 7      | 7     |
| Kirat    | 1             | 22    | 0     | 0      | 23    |
| Total    | 17            | 22    | 0     | 7      | 46    |

Source: Field Survey, 2010

Kirat (50.0%) is the dominant religion among the surveyed household followed by Hindu (34.78%) and Buddhist (15.21%). Similarly, Limbu language is the mother tongue of 47.82% surveyed population followed by Nepali (36.95%) and Tamang (15.21%). The surveyed Majhi households reported that they are using Nepali as the mother language instead of the Majhi language (Table 4-17).

#### 4.4.4 House-ownership and kind of house occupied

The CBS Nepal has divided the housing unit into four categories<sup>13</sup>; *Pakki* (permanent), *Ardha-Pakki* (semi-permanent), *Kachhi* (temporary) and others. However, for this study, the housing units of the surveyed households are divided into two major categories; *Pakki*<sup>14</sup> (permanent) and *Kachhi*<sup>15</sup> (temporary) according to the construction material used in wall and roof. The owner of *Pakki* house is considered well off compared to other types. About 52.17% of the surveyed houses are *Pakki* (permanent) whereas the rest 47.83 % are *Kachhi* (temporary), which is higher than the EDR average for *Pakki* house (24.1%).



**Photo 8: A Kachhi Majhi House in Majhitar, Pinasi**

**Table 4-18: Type of house by ethnicity**

| Type of House  | Caste/Ethnicity |          |          |          |          | Total     |
|--|-----------------|----------|----------|----------|----------|-----------|
|  | Limbu           | Majhi    | Tamang   | Brahmin  | Chhetri  |           |
| Made with Mud & Wood ( <i>Kachhi</i> )                           | 13              | 2        | 4        | 1        | 2        | 22        |
| Made with Mud, Cement, Stone, Concrete or Brick ( <i>Pakki</i> ) | 10              | 3        | 3        | 4        | 4        | 24        |
| <b>Total</b>   | <b>23</b>       | <b>5</b> | <b>7</b> | <b>5</b> | <b>6</b> | <b>46</b> |

Source: Field Survey, 2010

Table 4-18 shows that, 16 households out of 35 households (45.71%) of *Adivasi Janajati* and 8 households (72.73%) of *Barhmin/Chhetri* are *Pakki* houses.

<sup>13</sup> According to CBS, Nepal has categorized houses into four categories according to the construction material used in wall and roofs of the residential house. *Pakki* (permanent) house refers to a house with walls and roof made of permanent construction material like cement, bonded bricks, concrete, stone, slate tile and galvanized sheet. *Ardha Pakki* (semi permanent) house belongs to the category where either the wall or the roof is constructed with permanent construction materials and other is constructed with temporary materials. In *Kachhi* (temporary house) non durable materials like wooden flake, bamboo, straw/thatch, mud and unbaked bricks are mainly used in walls and roof. Final category includes a very temporary type of residential unit that is made with non-durable materials. These housing units are made with plastic sheets, bamboo and straw/thatch. For this research purpose, the Permanent and Semi permanent house are grouped under *Pakki* house whereas the temporary and final category is grouped under *Kacchi* house.

<sup>14</sup> Includes *Pakki* (permanent) and *Ardha-Pakki* (Semi-Permanent) types of housing unit according to CBS

<sup>15</sup> Includes *Kachhi* (temporary) and other types of housing units according to CBS definition

#### 4.4.5 Household economy and livelihood practices

##### Occupation

**Table 4-19: Surveyed households by occupation**

| Occupation                         | Name of VDC |          |           | Total     |
|------------------------------------|-------------|----------|-----------|-----------|
|                                    | Amarpur     | Panchami | Thechambu |           |
| Agriculture                        | 14          | 2        | 4         | 20        |
| Trade                              | 1           | 0        | 0         | 1         |
| Foreign Employment and Agriculture | 9           | 0        | 8         | 17        |
| Service and Agriculture            | 3           | 0        | 0         | 3         |
| Wages and Agriculture              | 3           | 0        | 0         | 3         |
| Trade and Agriculture              | 0           | 0        | 0         | 1         |
| <b>Total</b>                       | <b>30</b>   | <b>2</b> | <b>14</b> | <b>46</b> |

Source: Field Survey 2010

The occupation in the surveyed households is a mixture of farm and non-farm activities similar to project districts and VDCs. Of the total surveyed households 45 HHs are engaged in agriculture. However, among them 24 HHs are also engaged in other occupations such as trade, foreign employment and services. One household is engaged in trade only (Table 4-19).

Although large number of household are involved in farm activities, agriculture is not a significant contributor to the household economy (Table 4-24). The major part of the household income is derived from nonfarm activities.

##### Land holdings

**Table 4-20: Households by land holding sizes**

| Total area of own land in Hectare | Caste/Ethnicity |           |          |          |          | Total    | %         | Cumulative % |       |
|-----------------------------------|-----------------|-----------|----------|----------|----------|----------|-----------|--------------|-------|
|                                   | Limbu           | Majhi     | Tamang   | Brahmin  | Chhetri  |          |           |              |       |
| Bari                              | Bari Landless   | 2         | 0        | 1        | 0        | 0        | 3         | 6.52         | 6.52  |
|                                   | < 0.50          | 11        | 3        | 2        | 2        | 5        | 23        | 50.0         | 56.52 |
|                                   | 0.50 – 1.0      | 8         | 0        | 3        | 2        | 0        | 13        | 28.26        | 84.78 |
|                                   | 1.0 – 1.50      | 0         | 1        | 1        | 1        | 1        | 4         | 8.70         | 93.48 |
|                                   | 1.5 – 2.0       | 1         | -        | -        | -        | -        | 1         | 2.17         | 95.65 |
|                                   | >2.0            | 1         | 1        | -        | -        | -        | 2         | 4.35         | 100   |
|                                   | <b>Total</b>    | <b>23</b> | <b>5</b> | <b>7</b> | <b>5</b> | <b>6</b> | <b>46</b> | <b>100</b>   |       |
| Khet                              | Khet Landless   | 9         | 2        | 1        | 1        | -        | 13        | 28.26        | 28.6  |
|                                   | < 0.50          | 5         | 3        | 1        | 2        | 3        | 14        | 30.43        | 58.69 |
|                                   | 0.50 – 1.0      | 5         | 0        | 3        | 1        | 1        | 10        | 21.74        | 80.43 |
|                                   | 1.0 – 1.50      | 1         | -        | 1        | -        | -        | 2         | 4.35         | 84.78 |
|                                   | 1.5 – 2.0       | 1         | -        | 1        | 1        | 1        | 4         | 8.70         | 93.48 |
|                                   | >2.0            | 2         | -        | -        | -        | 1        | 3         | 6.52         | 100   |
|                                   | <b>Total</b>    | <b>23</b> | <b>5</b> | <b>7</b> | <b>5</b> | <b>6</b> | <b>46</b> | <b>100</b>   |       |

Source: Field Survey, 2010

Table 4-20 provides the landholdings of the surveyed households. The cultivated land is divided into two categories viz. *Bari*<sup>16</sup> and *Khet*<sup>17</sup>. The data (Table 4-20) reveals that out of total 46 households, 3 households do not own *Bari* land and 36 households own *Bari* land less than 1 ha. Only 8 households own the *Bari* land more than 1 ha. Similarly, for the *khet* land, 13 household do not own *Khet* land and 24 household own *khet* land less than 1 ha. Only 9 household possess *Khet* land more than 1 hectare.

The main irrigated crops grown are paddy (rice) in the wet season, followed by wheat in the dry season. The main rain-fed crops grown are maize and millet in the wet season along with wheat and barley in the dry season. The intercropping of rain-fed wheat and barley with mustard; and maize with black gram/ soybean/ beans/pigeon peas is also practiced.

**Table 4-21: Total landholding by caste/ethnic groups in surveyed households**

| Caste/ethnicity | Khet (ha)    | Bari (ha)     | Total (ha)   | Average land Holding (ha) |
|-----------------|--------------|---------------|--------------|---------------------------|
| <i>Limbu</i>    | 24.92        | 15.10         | 40.02        | 1.74                      |
| <i>Majhi</i>    | 1.38         | 6.62          | 8.0          | 1.60                      |
| <i>Tamang</i>   | 4.11         | 4.57          | 8.68         | 1.24                      |
| <i>Brahmin</i>  | 3.66         | 4.47          | 8.13         | 1.63                      |
| <i>Chhetri</i>  | 5.99         | 2.41          | 8.40         | 1.40                      |
| <b>Total</b>    | <b>40.06</b> | <b>33.178</b> | <b>73.23</b> | <b>1.59</b>               |

Source: Field Survey, 2010

Table 4-21 shows that the average land holding of the surveyed household is 1.59 ha that is higher than the national average (0.8 ha) and district averages (0.81 ha for Panchthar and 0.89 ha for Taplejung). In terms of caste and ethnicity, the average land holding is the highest for *Limbu* (1.74 ha) and lowest for *Tamang* (1.24 ha). Similarly according to the land types, the surveyed HHs own an average of 0.88 ha of *Khet* land and 0.72 ha of *Bari* land. The *Limbu* have the highest *Khet* land holding (1.08 ha/HH) whereas the *Majhi* have the lowest *Khet* land Holding (0.27 ha/HH). However, in the case of *Bari* land, *Majhi* have the highest land holding (1.32 ha/HH) and *Chhetri* have the lowest average land holding (0.37 ha/HH).

**Table 4-22: Rented-in<sup>18</sup> and Rented-out<sup>19</sup> land by cast and ethnicity**

| Caste/Ethnicity | Rented in land |             |             | Rented out land |          |             |
|-----------------|----------------|-------------|-------------|-----------------|----------|-------------|
|                 | Khet           | Bari        | Total       | Khet            | Bari     | Total       |
| <i>Limbu</i>    | 3.20           | 0.68        | 3.88        | 2.59            | 0        | 2.59        |
| <i>Majhi</i>    | 0.40           | 0           | 0.40        | 0               | 0        | 0           |
| <i>Tamang</i>   | 1.01           | 0.51        | 1.52        | 0               | 0        | 0           |
| <i>Brahmin</i>  | 2.64           | 0           | 2.64        | 0               | 0        | 0           |
| <i>Chhetri</i>  | 1.68           | 0           | 1.68        | 0.66            | 0        | 0.66        |
| <b>Total</b>    | <b>8.39</b>    | <b>1.19</b> | <b>9.58</b> | <b>3.25</b>     | <b>0</b> | <b>3.25</b> |

Source: Field Survey, 2010

<sup>16</sup> These are the unirrigated lands where the cultivation of rain-fed crops like maize, millet and pulses is done.

<sup>17</sup> These are the irrigated lands, where paddy is the primary crop.

<sup>18</sup> Rented-in land is taken by a household/individual on rent from the land owner on an annual basis

<sup>19</sup> Rented-out land is given to a household/individual on rent by the land owner on an annual basis for cultivation.



Table 4-22 shows that households have rented their land (both in and out renting) for cultivation purpose. The surveyed households have rented-in a total 9.58 ha (8.39 ha Khet land and 1.19 ha Bari land) land for cultivation purpose on an annual basis. In terms of caste and ethnicity, the *Brahmin* have the highest proportion of rented land whereas the *Majhi* possess the lowest proportion. The data in the table also suggest that in comparison to the rented-in lands, very few households have rented-out their land to others for cultivation. Only *Chhetri* (0.66 ha) and *Limbu* (2.59 ha) have given their land to others on the rent for cultivation.

### Animal husbandry

**Table 4-23: Livestock ownership by caste/ethnic groups**

| Caste/Ethnicity        | Cattle     | Buffalo   | Chicken    | Goat       | Pigs      | Duck     | Others    | Total      | Average per HH |
|------------------------|------------|-----------|------------|------------|-----------|----------|-----------|------------|----------------|
| <i>Limbu</i>           | 63         | 12        | 19         | 93         | 44        | 3        | 8         | 242        | 10.52          |
| <i>Majhi</i>           | 17         | 4         | 36         | 7          | 4         | 0        | 0         | 68         | 13.6           |
| <i>Tamang</i>          | 23         | 9         | 70         | 52         | 0         | 0        | 0         | 154        | 17.42          |
| <i>Brahmin</i>         | 17         | 5         | 33         | 34         | 0         | 0        | 0         | 89         | 17.8           |
| <i>Chhetri</i>         | 28         | 5         | 23         | 30         | 2         | 0        | 6         | 94         | 15.66          |
| <b>Total ( number)</b> | <b>148</b> | <b>35</b> | <b>181</b> | <b>216</b> | <b>50</b> | <b>3</b> | <b>14</b> | <b>647</b> | <b>14.07</b>   |
| Average animals per HH | 3.22       | 0.76      | 3.93       | 4.70       | 1.09      | 0.07     | 0.30      | 14.07      |                |

Source: Filed Survey 2010

Surveyed households rear cattle, goats, buffalo, pigs, duck and poultry. Cattle and buffalo are kept for milk, ghee and manure, while goats, pigs and chicken are kept for meat and income generation. The average livestock size is 3.22 for cattle, 0.76 for buffalo, 4.70 for goat, 3.93 for chicken and 0.07 for pig. The total animal holding size is the largest for *Brahmin* (17.8 animals) and the lowest for *Limbu* (10.52 animals). *Brahmin* and *Chhetri* own more big animals (cow, buffalo) compared to the *Adivasi Janajati* groups. *Adivasi Janajati* own more small animals (chicken, pig, goat, and duck) primarily to meet their food habits. Livestock ownership pattern among the surveyed households is presented in Table 4-23.

### Income

**Table 4-24: Average annual household income by caste/ethnic groups**

| Caste/Ethnicity | Annual Average Income in NRs. |                          |                            |                          |                            |                                     | Total          | Total HHs | HHs Average Income |
|-----------------|-------------------------------|--------------------------|----------------------------|--------------------------|----------------------------|-------------------------------------|----------------|-----------|--------------------|
|                 | Agri & Livestock              | Trade & Business         | Service/Pension            | Wages                    | Remittance                 | Loan <sup>20</sup> /Interest/Others |                |           |                    |
| <i>Limbu</i>    | 228280<br>(7.8)               | 196000<br>(6.7)          | 854000<br>(29.1)           | 124000<br>(4.2)          | 1340000<br>(45.7)          | 192120<br>(6.5)                     | 2934400        | 23        | 127,582.61         |
| <i>Majhi</i>    | 3000<br>(0.7)                 | 0                        | 0                          | 0                        | 168000<br>(38.8)           | 262000<br>(60.5)                    | 433000         | 05        | 86,000.00          |
| <i>Tamang</i>   | 160000<br>(9.40)              | 60000<br>(3.53)          | 996000<br>(58.52)          | 90000<br>(5.29)          | 200000<br>(11.75)          | 196000<br>(11.51)                   | 1702000        | 07        | 243142.86          |
| <i>Brahmin</i>  | 151500<br>(10.1)              | 34000<br>(2.3)           | 60000<br>(3.9)             | 0                        | 1260000<br>(83.7)          | 0                                   | 1505500        | 05        | 301,100.00         |
| <i>Chhetri</i>  | 161000<br>(16.7)              | 3300<br>(0.3)            | 80000<br>(8.3)             | 300000<br>(31.2)         | 418000<br>(43.4)           | 0                                   | 962300         | 06        | 160,383.33         |
| <b>Total</b>    | <b>703780<br/>(9.33)</b>      | <b>293300<br/>(3.89)</b> | <b>1990000<br/>(26.40)</b> | <b>514000<br/>(6.82)</b> | <b>3386000<br/>(44.92)</b> | <b>650120<br/>(8.62)</b>            | <b>7537200</b> | <b>46</b> | <b>163852.17</b>   |

Source: Filed Survey, 2010

<sup>20</sup> Loan borrowed within the last year is taken as the income

Average annual income from farm and off-farm sources is summarized in Table 4-24. Agriculture and livestock contribute 9.33 %, service/job/pension 26.40 %, remittance 44.92 %, wages 6.82 %, trade/business/industry 3.89 % and others 8.62 % to the average annual household incomes.

Although the agriculture is the basic activity of the 46 surveyed households (Table 4-19), the nonfarm activities play significant role in the household economy that contributes 90.67 % of the surveyed households income. If we exclude the loan and other items from the non-farm income sources, the actual contribution of non-farm activities in the household economy is about 82.03 % only.

The average annual household income of the surveyed households is calculated as NRs. 179,457.14. In terms of caste/ethnicity, the average annual household income of *Brahmin* is the highest (NRs. 301,100.00) followed by *Tamang* (NRs. 243,142.86), *Chhetri* (NRs. 160,383.00), *Limbu* (NRs. 127,582.00) and *Majhi* (NRs. 86,000.00). The per capita income for the surveyed population is NRs. 20,763.64 which is higher than the national per capita income of NRs. 15,000.00 (UNDP 2009). In terms of caste/ethnicity, *Brahmins* have the highest (NRs 32,031.91) per capita income followed by *Tamang* (NRs. 27901.63), *Chhetri* (NRs. 20,919.56), *Limbu* (NRs. 16,578.53) and *Majhi* (NRs. 13,531.25).

### Expenditure

**Table 4-25: Annual expenses on different items by caste/ethnic groups**

| Caste/<br>Ethnicity | Annual expenditure in NRs. |                   |                   |                   |                  |                            |  |                   | Total   | Average<br>HHs<br>Expenditure |
|---------------------|----------------------------|-------------------|-------------------|-------------------|------------------|----------------------------|--|-------------------|---------|-------------------------------|
|                     | Food                       | Clothing          | Education         | Health            | Transp.          | Ritual/<br>and<br>festival | Loan<br>payback/<br>Interest <sup>21</sup> | Others            |         |                               |
| <i>Limbu</i>        | 1054338<br>(46.1)          | 202900<br>(8.9)   | 79000<br>(3.5)    | 40000<br>(1.8)    | 53000<br>(2.3)   | 154000<br>(6.7)            | 468000<br>(20.5)                           | 233685<br>(10.2)  | 2284923 | 99,344                        |
| <i>Majhi</i>        | 174310<br>(45.0)           | 36500<br>(9.4)    | 17500<br>(4.5)    | 19000<br>(4.9)    | 2000<br>(0.5)    | 25000<br>(6.5)             | 28800<br>(7.4)                             | 84270<br>(21.8)   | 387380  | 77,476                        |
| <i>Tamang</i>       | 230000<br>(23.11)          | 90000<br>(9.04)   | 320000<br>(32.16) | 120000<br>(12.06) | 35000<br>(3.52)  | 100000<br>(10.05)          | 60000<br>(6.03)                            | 40000<br>(4.02)   | 995000  | 187142.85                     |
| <i>Brahmin</i>      | 139020<br>(12.3)           | 436000<br>(38.6)  | 3000<br>(0.3)     | 111000<br>(9.8)   | 69500<br>(6.2)   | 88000<br>(7.8)             | 117600<br>(10.4)*                          | 164120<br>(14.5)  | 1128240 | 225,648                       |
| <i>Chhetri</i>      | 114020<br>(14.0)           | 40000<br>(4.9)    | 25000<br>(3.2)    | 176000<br>(21.7)  | 4000<br>(0.5)    | 7000<br>(0.9)              | 100500<br>(12.4)*                          | 346290<br>(42.6)  | 812810  | 135,468                       |
| Total               | 1711688<br>(30.52)         | 805400<br>(14.36) | 444500<br>(7.93)  | 466000<br>(8.31)  | 163500<br>(2.92) | 374000<br>(6.67)           | 774900<br>(13.82)                          | 868365<br>(15.48) | 5608335 | 121921                        |

Source: Filed Survey, 2010

\* The expenditure on payback of loan and interest for *Brahmin* and *Chhetri* household is for the outstanding loan of previous years because these groups did not borrow any loan within the last year (Table 4-24)

The expenditure of the surveyed households is grouped broadly into two categories: food items and non-food items. Non-food items include expenditures on education, health, transportation, clothing, loan pay back and interest and festivities. The annual average expenditure of the surveyed household is NRs 121, 921.00 (Table 4-25).

The share of expenditure of the surveyed household on food and non food items consists of 30.52% and 69.48% respectively. The expenditure on food items seems relatively high. This might be because of excessive use of food grains for brewing local liquor among the *Adivasi Janjati* groups.

The non-food expenditure items include clothing (14.36%), education (7.93%), health (8.31%), transportation (2.92%), rituals and festivals (6.67%), payback of loan and interest of borrowed loan (13.82%) and others (15.48%). Similar to the income, the average expenditure is also recorded highest among the *Brahmin* households (Table 4-25).

<sup>21</sup> This includes the payback of the last year loan and outstanding loan, if any

**Loan borrowing****Table 4-26: Households by source of loan by caste/ ethnicity**

| Source of loan       | Caste/Ethnicity |          |          |          |          | Total      |
|----------------------|-----------------|----------|----------|----------|----------|------------|
|                      | Limbu           | Majhi    | Tamang   | Brahmin  | Chhetri  |            |
| Local Money Lenders  | 13              | 2        | 3        | 2        | 0        | 20 (57.14) |
| Relatives/ Neighbors | 6               | 1        | 2        | 2        | 2        | 13 (37.14) |
| Finance/Bank         | 1               | 0        | 1        | 0        | 0        | 2 (5.72)   |
| <b>Total</b>         | <b>20</b>       | <b>3</b> | <b>6</b> | <b>4</b> | <b>2</b> | <b>35</b>  |

Source: Field Survey, 2010

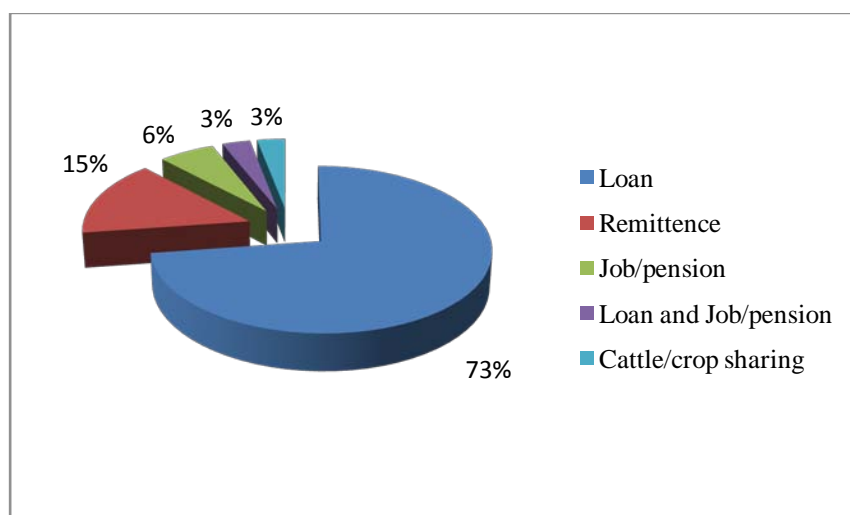
Local money lenders and neighbors/relatives are the major sources of loan of the surveyed households (Table 4-26). A total of 35 households has borrowed loan from different sources that includes the loan taken last year and years before that. Among them, 20 HHs has borrowed from local money lenders; 13 HHs from relatives and neighbors; and only 2 HHs have borrowed from financial institution. The borrower households have to pay 24 to 36 % annual interest for the loan taken. People prefer borrowing from local money lenders and their relatives/neighbors instead of financial institutions because of easy access.

**Food Sufficiency from Self-production****Table 4-27: Households food sufficiency by caste/ ethnicity**

| Food secured months | Caste/Ethnicity |          |          |          |          | Total     |
|---------------------|-----------------|----------|----------|----------|----------|-----------|
|                     | Limbu           | Majhi    | Tamang   | Brahmin  | Chhetri  |           |
| 1-3 Months          | 5               | 2        | 0        | 0        | 0        | 7         |
| 3-6 Months          | 12              | 3        | 2        | 1        | 2        | 20        |
| 6-9 Months          | 3               | 0        | 2        | 0        | 1        | 6         |
| <b>Total</b>        | <b>20</b>       | <b>5</b> | <b>4</b> | <b>1</b> | <b>3</b> | <b>33</b> |

Source: Field Survey, 2010

Since 90 percent of the surveyed household have income sources other than agriculture and animal husbandry (Table 3-14), the economy of the household is cash based economy. However, for the purpose of this study, the household whose own agricultural production is adequate for their annual household food demand is considered as the food sufficient household. Only 13 HHs are food sufficient from own agricultural production. Table 4-27 shows that among the total surveyed households, 33 HHs responded that their own production is not sufficient for their annual food demand. Among those, 7 HHs reported that they produce food for one to three months followed by 20 HHs for 3-6 months and 6 HHs for 6 - 9 months. In terms of caste/ethnicity, 7 HHs of *Janajati* sustained for one to three months; 17 HHs sustained up to 6 months; and 5 HHs sustained for 9 months. On the other hand, only 4 HHs (36.4 %) of *Brahmin/Chhetri* reported food deficiency. Excessive use of food grains for brewing local liquor might be one of the reasons for food deficiency among the surveyed *Janajati* households.



**Chart 4-3: Household strategy to food sufficiency**

People usually buy extra food from local market to meet their food demand. The most common strategy adopted to cope with the food shortage is borrowing loan. The survey data show, 24 households (73.0%) borrowed loan to buy food (Chart 4-3).

### Migration

**Table 4-28: Distribution of migrants of surveyed HHs by destination and VDC**

| Name of VDC | Total | Percent | India | Overseas |
|-------------|-------|---------|-------|----------|
| Amarpur     | 16    | 45.5    | 1     | 15       |
| Thechambu   | 18    | 54.5    | 1     | 17       |
| Total       | 34    | 100     | 2     | 32       |

Source: Field Survey, 2010

The Household survey data shows that 34 individuals from the surveyed households left the country for seeking employment in India and overseas. The out migrant population constituted 9.37 % of the total population of the surveyed households. This is higher than the national percentage (6.6 %) of out-migration.

### Skill level

**Table 4-29: Household population by skill and caste/ethnicity**

| Skill Type           | Number of persons |       |        |         |         | Total |
|----------------------|-------------------|-------|--------|---------|---------|-------|
|                      | Limbu             | Majhi | Tamang | Brahmin | Chhetri |       |
| Plumber              | 1                 | -     | -      | -       | -       | 1     |
| Carpentry            | 3                 | -     | -      | 1       | 1       | 5     |
| Electrician          | -                 | -     | -      | -       | 1       | 1     |
| Health               | 2                 | -     | 2      | -       | -       | 2     |
| Driving              | 1                 | 1     | 5      | 1       | -       | 8     |
| Sewing and stitching | 2                 | -     | -      | -       | 1       | 3     |
| Handycrafts          | 1                 | -     | -      | -       | -       | 1     |

|              |           |          |           |          |          |           |
|--------------|-----------|----------|-----------|----------|----------|-----------|
| Constructing | 2         | -        | 1         | -        | -        | 2         |
| Others       | -         | 1        | 3         | 6        | 1        | 9         |
| <b>Total</b> | <b>12</b> | <b>2</b> | <b>11</b> | <b>8</b> | <b>4</b> | <b>37</b> |

Source: Field Survey, 2010

Out of 234 economically active individual (15-59 years age group) from surveyed households, only 37 people have acquired skills of different kinds (Table 4-29). The most commonly reported skills amongst male population are driving and carpeting mainly. Skills recorded amongst female population are sewing, stitching and weaving.

**Table 4-30: Desired/preferred skill trainings by households**

| Desired/ preferred skill trainings | Caste/Ethnicity |          |          |          |          | Total     |
|------------------------------------|-----------------|----------|----------|----------|----------|-----------|
|                                    | Limbu           | Majhi    | Tamang   | Brahmin  | Chhetri  |           |
| Agro based                         | 1               | 1        | 1        | 1        | 1        | 5 (10.9)  |
| Cottage industry                   | 1               | 1        | 0        | 0        | 1        | 3 (6.5)   |
| Carpentry                          | 2               | 0        | 0        | 0        | 2        | 2 (4.3)   |
| Sewing & Stitching                 | 0               | 0        | 0        | 1        | 1        | 2 (4.3)   |
| Electrical                         | 15              | 1        | 4        | 0        | 3        | 23 (50.0) |
| Plumbing                           | 4               | 2        | 2        | 3        | 0        | 11 (23.9) |
| <b>Total</b>                       | <b>23</b>       | <b>5</b> | <b>7</b> | <b>5</b> | <b>6</b> | <b>46</b> |

Source: Field Survey, 2010

Table 4-29 shows that most of the individuals of the surveyed households are unskilled. They showed their willingness for skill trainings from KAHEP during its construction and operation. The preferred trainings are electrical and plumbing (Table 4-30).

#### 4.4.6 Access to facilities

##### Drinking water and water Sources

**Table 4-31: Affected HHs by sources of drinking water and caste/ethnicity**

| Source of Drinking Water | Caste/Ethnicity |          |          |          |          | Total     |
|--------------------------|-----------------|----------|----------|----------|----------|-----------|
|                          | Limbu           | Majhi    | Tamang   | Brahmin  | Chhetri  |           |
| Piped Water              | 9               | 5        | 7        | 4        | 5        | 30        |
| Spring                   | 10              | 0        | 0        | 1        | 1        | 12        |
| Well/ Dug Well           | 4               | 0        | 0        | 0        | 0        | 4         |
| <b>Total</b>             | <b>23</b>       | <b>5</b> | <b>7</b> | <b>5</b> | <b>6</b> | <b>46</b> |

Source: Field Survey, 2010

Piped water, springs and wells are the major sources of drinking water for the surveyed households. The surveyed families manage drinking water locally by individual or communal initiatives. From the field study, it is clear that there is no role of the Kabeli River for the drinking water purpose. Considering access to Tap/Pipe and Tube-well as equivalents, 30 households (65.21%) have access to piped water, while 12 (26.09 %) fetch water from nearby springs and rest 4 (9.5%) from Well (Table 4-31). In terms of caste and ethnicity, higher proportion of *Brahmin/Chhetri* (81.8% of total *Brahmin/Chhetri*) than the *Adivasi Janajati* (60.0% of the total *Janajati* households) has piped water facility.



**Photo 9: A Rai woman fetching water from natural well (Kuwa)**

### Sanitation facility

**Table 4-32: Households by toilet facility and caste/ethnicity**

| Toilet facility | Caste/Ethnicity |              |               |                |                | Total     |
|-----------------|-----------------|--------------|---------------|----------------|----------------|-----------|
|                 | <i>Limbu</i>    | <i>Majhi</i> | <i>Tamang</i> | <i>Brahmin</i> | <i>Chhetri</i> |           |
| Yes             | 22              | 1            | 7             | 5              | 5              | 40        |
| No              | 1               | 4            | 0             | 0              | 1              | 6         |
| <b>Total</b>    | <b>23</b>       | <b>5</b>     | <b>7</b>      | <b>5</b>       | <b>6</b>       | <b>46</b> |

Source: Field Survey, 2010

Household survey data shows that 40 (86.96%) households have toilet facility (Table 4-32). Only 6 households (13.04%) do not have toilet facility. Within *Majhi*, four (4) *Majhi* households (out of a total of five) do not have toilets. Households without toilet facility go to the nearby forests and barren lands for defecation.

### Lighting and cooking facility

**Table 4-33: Households by source of lighting by caste/ ethnicity**

| Lighting energy source | Caste/Ethnicity |              |               |                |                | Total     |
|------------------------|-----------------|--------------|---------------|----------------|----------------|-----------|
|                        | <i>Limbu</i>    | <i>Majhi</i> | <i>Tamang</i> | <i>Brahmin</i> | <i>Chhetri</i> |           |
| Kerosene               | 15              | 3            | 2             | 1              | 2              | 23        |
| Solar Power            | 8               | 0            | 5             | 4              | 4              | 21        |
| Other Source           | 0               | 2            | 1             | 0              | 0              | 2         |
| <b>Total</b>           | <b>23</b>       | <b>5</b>     | <b>7</b>      | <b>5</b>       | <b>6</b>       | <b>46</b> |

Source: Field Survey, 2010

Kerosene and solar power are the major sources of the lighting energy for the surveyed households. A total of 23 households use kerosene as a source of lighting energy and 21 household have installed

solar panel for lighting (Table 4-33). Two *Majhi* HHs use *Tukimara*<sup>22</sup> for lighting purpose. The HHs with solar panels are the well off HHs having better income sources compared to others. Firewood is the only fuel that is used for cooking by all the surveyed households.

### Communication

**Table 4-34: Households by mode of communication and VDC**

| Mode of communication | Name of VDC |          |           | Total     | Percentage |
|-----------------------|-------------|----------|-----------|-----------|------------|
|                       | Amarpur     | Panchami | Thechambu |           |            |
| CDMA Telephone        | -           | -        | 3         | 3         | 6.5        |
| GSM Mobile Telephone  | 28          | 2        | 10        | 36        | 87         |
| Postal Service        | 2           | -        | -         | 2         | 4.3        |
| N/A                   | -           | -        | 1         | 1         | 2.1        |
| <b>Total</b>          | <b>30</b>   | <b>2</b> | <b>14</b> | <b>46</b> | <b>100</b> |

Source: Field Survey, 2010

The project area is not connected to landline telephone and internet facilities. Local residents use Code-division Multiple Access (CDMA) and mobile telephones for modern communication purposes. The survey data show that a total of 36 HHs (87 %) have access to mobile telephone service and only 3 HHs (6.5%) use CDMA telephone service (Table 4-34). The data (Table 4-34) indicate that all the surveyed HHs have good access to communication.

### Health

**Table 4-35: Households by occurrence of diseases during previous year**

| Suffering from any disease last year | Caste/ethnicity |          |          |          |          | Total     |
|--------------------------------------|-----------------|----------|----------|----------|----------|-----------|
|                                      | Limbu           | Majhi    | Tamang   | Brahmin  | Chhetri  |           |
| Yes                                  | 6               | 3        | 6        | 5        | 5        | 25        |
| No                                   | 17              | 2        | 1        | 0        | 1        | 21        |
| <b>Total</b>                         | <b>23</b>       | <b>5</b> | <b>7</b> | <b>5</b> | <b>6</b> | <b>46</b> |

Source: Field Survey, 2010

The household survey data shows that typhoid, asthma, anemia, blood-pressure, sugar, lung related diseases and worms are frequently occurring disease. In total, at least one member of 25 surveyed HHs (out of 46 HHs) has suffered from the disease last year. In terms of cast and ethnicity, members of 6 *Limbu*, 3 *Majhi*, 6 *Tamang*, 5 *Brahmin* and 5 *Chhetri* HHs have suffered from various kind of diseases last year (Table 4-36).

**Table 4-36: Households by health seeking behaviors and VDC**

| Health seeking behaviors               | Name of VDC |          |           | Total |
|--|-------------|----------|-----------|-------|
|  | Amarpur     | Panchami | Thechambu |       |
| <i>Dhami/Jhakri</i> (spiritual healer) | 14          | 1        | 2         | 17    |
| Local <i>Baidya</i> (local healer)     | -           | -        | 1         | 1     |
| Health facilities                      | 5           | -        | 2         | 7     |
| No sickness observed                   | 10          | 1        | 10        | 21    |

Source: Field Survey, 2010

<sup>22</sup> *Tukimara* is a device used for lighting. It is an electronic torch that requires 3-4 dry cells of 1.5 Volts battery.

Out of 25 HHs suffering from disease previous year, 17 household first consulted local spiritual healers (*Dhamiljhakri*) for treatment and only 7 households consulted local health post (Table 4-36). Most of the surveyed households have a preference to *Dhamiljhakri* during the initial treatment phase.



Photo 10: A *Dhami* in Majhitar, Pinasi

Table 4-37: Households preference over maternity health care by VDC

| Maternity Health seeking Behaviors     | Name of VDC |          |           | Total     |
|--|-------------|----------|-----------|-----------|
|  | Amarpur     | Panchami | Thechambu |           |
| <i>Sudeni</i>                          | 14          | -        | 4         | 18        |
| Local <i>Baidya</i> or herb specialist | 2           | -        | -         | 2         |
| Health post and hospital               | 10          | 1        | 10        | 21        |
| Other                                  | 4           | 1        | 0         | 5         |
| <b>Total</b>                           | <b>30</b>   | <b>2</b> | <b>14</b> | <b>46</b> |

Source: Field Survey, 2010

In contrast to the general health seeking practice, preference to the maternity health care is different. Out of 46 HHs, 21 HHs reported that they prefer to consult local health posts and hospitals, 18 households prefer local *Sudeni* (midwife) and only 2 household prefer local *Baidya* (herb specialist) for maternity health care services. Five households reported that they do not consult specialists for maternity health care (Table 4-37).

## 4.5 Development and challenges

### 4.5.1 National development priority

In the history of planned development of Nepal, the overriding objective of development efforts in Nepal is poverty alleviation. In spite of noticeable progress achieved over the past decade, there is still widespread poverty. Though poverty has always been an overriding concern of development efforts in Nepal, it was explicitly stated as an objective only from the Seventh Plan (1985/86-1989/90) onwards. The latter, however, was the first attempt to formulate a separate plan with a long-term poverty alleviation perspective. Towards the end of the Plan period, it was derailed by the Trade and Transit crisis and the resulting economic dislocation in the late eighties. The transition to democracy in 1990, by raising popular expectations and aspirations, gave a new impetus to poverty reduction. The development plans which were formulated subsequently— the Eighth Plan (1992-1997), the Ninth Plan (1997-2002), the Tenth Plan (2002-2007) and the Interim Plan (2007-2010)—specifically had poverty reduction as their main objective. The Ninth Plan also established long-term targets and development indicators for all sectors based on their potential for alleviating poverty.



### **Hydroelectricity**

It is evident that Nepal is experiencing a serious situation of power shortage that resulted more than 16 hours load shedding per day in dry season which is ridiculous. The national economic loss due to prolonged load shedding is not yet calculated.

On the other hand, national development has always been equated with the economic growth that will be achieved through the use of natural resources in Nepal. Particularly, hydro-electricity has been regarded as the backbone of the economic growth of Nepal. It is believed that the investment in hydro would boost economic strength of Nepal. There had never been any precedent of informing the people beforehand about impending potential adverse impacts.

### **The changing context**

By 1980s, it became apparent that many development projects have not fulfilled their promise. The economics of projects and the neglect of social, cultural, and environmental dimensions were criticized. Top down approaches were questioned because they generally imposed programs of social change which did not take into consideration the culture and social structure of specific populations. As in most development projects, the failure of hydro-project/dam projects was attributed to the lack of consideration of the social and cultural dimensions. New concerns and approaches came to replace earlier approaches. Concepts such as local knowledge, equity, accountability, participation, human rights, and sustainable development now dominate the interactions of all stakeholders involved in development practices which can be taken as today's values.

A series of transformations at the global, national, and local levels accompanied the democratization processes of the 1990s, many of which had an effect in the way social and environmental impacts are negotiated and assessed. Some of these transformations led some stakeholders involved in the dam projects to take steps in the right direction regarding issues of equity and distribution of costs and benefits

### **4.5.2 Local development and challenges**

It is observed that progress in essential infrastructure, such as road and telephone to the local communities are made to some extent. Progress in rural electricity generation, irrigation and supply of drinking water are yet to be made. Most of the people do not have easy access to the basic civic amenities like safe drinking water, link roads and transportation, schools, and health services because of difficult terrain. In some areas, community is actively involved in road construction utilizing the District and Village governmental grants from the central government. However, the quality of construction of these roads linking Mechi Highway are weak and if appropriate measures are not taken to improve quality, there is a danger of increasing environmental problems.

### **Health and sanitation facilities**

Most common diseases in the project area are Diarrhea, Intestinal Worms, Sore eye, Gastritis, Acute Respiratory Infections (ARI) (District Profile and FGD). Diarrhea due to bacteriological contamination of water and food is probably more common in the hot, humid period of the year. Infections of the upper respiratory tract (coughs, colds and runny nose) and ARI are at their peak during the cold season in the project area.

There are midwives "Sudeni" in the villages and traditional healers. The former have a limited knowledge about delivery and postnatal care and cannot deal with serious or complicated cases. Since most of these midwives are elderly, they would not be suitable to be trained as paramedics. Many healers have no apprentices and few practice on a regular basis. It seems that the introduction of medicines, even though on a limited scale, has weakened peoples' beliefs in traditional healing practices.

Health facilities in the project area consist of only few health posts and sub-health posts. For example, the closest health post located at Amarpur-6 and one sub-health post is located at Singapur serve a total population of 7,304 and 1, 64,27,315 m<sup>2</sup> area. It is important to note that, the ratio of one doctor to population is 1:47000 in Panchthar district (CBS, 2001 and District profile Panchthar

2064). The health posts can be characterized as staff absentee and inadequately stocked with medicine. District hospital and health centers are only slightly better in terms of resources and staff. The nearest well equipped Hospitals are Eastern Region Hospital and BP Koirala Health Science Foundation that are located approximately 250 km by road in Biratnagar and Dharan respectively.

The situation of sanitation in the project areas except Pinasi seems quite satisfactory. In the case of Pinasi, most of the households especially *Majhi* indigenous communities have no toilet facilities. Sanitation condition in and around the proposed intake area is found satisfactory. Most of the household have toilet facilities. However, sanitation condition in and around the powerhouse area is not good. There is lack of toilet facilities. These households practice open defecation in nearby open areas.

### ***Drinking water facilities***

Villagers fetch water directly from the streams and creeks. These water resources are located at a distance and time consuming. There is little understanding of the potential health problems of drinking water and the primary concern is whether the water appears clear without sediment. Some elites have managed water supply in their own cost. Most of the villagers have no access to safe drinking water.

### ***Education facilities***

There are primary, secondary and higher secondary schools that are functioning properly. But, they are not well equipped and lack essential infrastructures like library, playground, proper building and classroom, teaching materials and refreshment training to the school teachers. A few students from project areas have to walk for two/three hours daily to attend their classes. For example, the students of Rajabesi have to walk for 2 and half hours to attend their class in Amarpur Higher Secondary School. Villagers have understood the importance of education. Therefore, Amarpur Higher Secondary School is financed by the VDC budget and villagers themselves through household contribution since the local government had neither the funds nor could it provide for teachers. For the higher education, villagers send their children to Panchthar, Ilam, Jhapa, Biratnagar, Kathmandu and even Darjeeling in India, which is very costly.

### ***Transportation and communication***

The project area is located in four VDCs of Taplejung and Panchthar. It has been nearly 22 years that Panchthar and Taplejung districts was linked with Birtamod by Mechi Highway. Surrounding villages/settlements are also not adequately linked with link roads and tracks. Though these districts are linked by Mechi Highway, the rural VDCs are remote and inaccessible. The availability of communication facilities (telephone, postal services etc) is limited and mostly concentrated in the market areas like Kabeli Bazaar, Singhapur etc. However, the local people have access to CDMA of Nepal Telecom and NCell mobile services.

### ***Cooking and lighting energy***

The area is not connected with the national electricity grid. Some well-off households have installed their own solar panels for lighting purpose. Majority of the households utilize kerosene lamps for lighting purpose. Fuel wood is the major cooking energy used by all households irrespective of ethnicity and caste. Improved cooking stove has been recently introduced in the project area.

### ***Lack of good governance***

Another challenge is the result of a top-down approach within the government resulting in the lack of meaningful consultation and participation of local peoples. This approach often does not take into consideration local needs, cultural beliefs and values, and ethnicity in relation to achieving policy and planning development projects. To ensure today's values- equity, justice, accountability, participation-while implementing KAHEP can be taken as a prime challenges for good governance.

## 4.6 Adivasi Janajati

Nepal is a country with vast cultural, linguistic, religious and ethnic diversity. People belonging to different religions, races, speaking more than 92 languages have been residing in this land for centuries (Dahal, 2003). Diversity gives Nepal her unique character, both in terms of its cultural wealth and complex web of social problems. Another important feature of Nepali society is its stratified structure which is based on the caste groups. The caste system divides and organizes the society in hierarchic caste groups, membership of which is solely determined by birth. Traditionally, indigenous peoples of Nepal have been outside the purview of the Hindu caste system. Indigenous communities interacted with other Hindu caste communities but largely remained separate from Hindu caste system. The *Dalits* or untouchables are the ones who were at the receiving end of the system. These communities were historically denied access to education, forced to follow occupation not adopted by most and suffered maximum injustice due to social stigma attached to their caste.

In 2001, the CBS provided data on 100 caste/ethnic groups of Nepal and cited 92 different mother tongues. Among them the National Foundation for the Development of Indigenous Nationalities (NFDIN) has classified 59 *Adivasi Janajati*. The population of *Adivasi Janajati* is estimated to be more than 37% in Nepal. CBS 2001 recorded only 43 out of the 59 groups and 16 groups are missing. This can normally be explained by either, two or more groups being lumped together, some groups being included under the category of unidentified caste/ethnic groups or by certain groups listed are not found. Consequently, the exact number of *Adivasi Janajati* is still not determined. Among them *Magar* (7.14%), *Tharu* (6.75%), *Tamang* (5.64%), *Newar* (5.48%), *Rai* (2.79%), *Gurung* (2.39%), and *Limbu* (1.58%) are the largest groups (Dahal 2003).

### 4.6.1 Definition of Adivasi Janajati (Indigenous Peoples)

By the National Foundation for the Development of Indigenous Nationalities (NFDIN) Act 2001, GoN has identified and officially recognized 59 indigenous communities referred to as *Adivasi Janajati* in Nepali and Indigenous Nationalities in English. Recently formed a High Level Taskforce for the Revision of the List of Indigenous Nationalities 2009 has updated the list of *Adivasi Janajatis* to 81 and recommended to the government for their official recognition. In Nepal, *Adivasi Janajati* means- "a tribe or community having its own territory, own mother tongue, traditional rites and customs, distinct cultural identity, distinct social structure and written or unwritten history" (NFDIN Act 2001).

The World Bank OP 4.10 does not define the term indigenous peoples or tribal people. However, it states that for the purpose of the OP, the term "indigenous peoples" refers to "a distinct, vulnerable, social and cultural group" possessing a number of characteristics in varying degrees. These characteristics include:

- self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- an indigenous language, often different from the official language of the country or region.<sup>23</sup>

In summation, the OP 4.10 specifies some characteristics of indigenous peoples that include: self-identification as indigenous peoples and recognition by others; "collective attachment" to distinct habitats or territories and the natural resources therein; the presence of "customary cultural, social, economic or political institutions" separate from those of the dominant society; and an indigenous language, often different from the national language. In this context as mentioned in the policy, World Bank's characteristics on Indigenous Peoples (OP 4.10, 2005) may be applied to the ethnic groups on the project area in the following ways:

<sup>23</sup> World Bank's Policy on Indigenous Policy- OP 4.10

"Thus, the *Adivasi Janajati* of the project area should be considered as 'Indigenous Peoples' according to World Bank policy on Indigenous Peoples. The ethnic groups of the project VDCs are recognized by the government. They belong to the officially recognized 59 indigenous groups."

#### 4.6.2 National legal and policy framework

Specific policy initiatives for the advancement of indigenous peoples and other disadvantaged groups started in 1997 with the ninth and tenth national development plans. Addressing the shortcomings of earlier plans, the current plan now includes the objective of promoting the economic and cultural development of indigenous peoples by increasing their access to administrative, social and economic resources.

The National Foundation for Development of Indigenous Nationalities Act 2002 established the first comprehensive policy and institutional framework regarding indigenous peoples. The Act created the National Foundation for Development of Indigenous Nationalities as a successor to the National Committee for the Development of Nationalities of Nepal. NFDIN is a semi-autonomous body that acts as the State's focal point for indigenous policy, with a mandate to make recommendations to the Government on measures to promote the development of indigenous groups in the social, economic and cultural areas. It has the Prime Minister as its chair, the Minister of Local Development as its co-chair, and a vice-chairperson that functions as its chief executive and who is selected from among names provided by the Nepal Federation of Indigenous Nationalities, the main national collation of indigenous organizations. Also, NFDIN has a Governing Council and an Executive Committee, both composed mostly of indigenous members. Functionally, the Ministry of Local Development oversees the activities of NFDIN, and the development and execution of Government policy on matters of indigenous peoples more generally.

The current Interim Constitution of 2007 recognizes the diversity of Nepal (Article 3), and defines the country as a secular, inclusive and democratic State (Article 4). The Interim Constitution further recognizes the status of all mother tongues as national languages, enabling their use in the governmental sector (Article 5). Each community has the right to preserve and promote its language and cultural heritage, as well as to receive basic education in its mother tongue (Article 17). In addition, the document explicitly recognizes the rights of indigenous peoples to "participate in State structures on the basis of principles of proportional inclusion" (Article 21), and, further, authorizes the State to implement special measures "for the protection, empowerment and advancement of indigenous nationalities" (Article 13).

Together with the various provisions of the Interim Constitution and the NFDIN Act, 2002 other pieces of recent legislation address specifically the situation of and call for specific measures in relation to the *Adivasi Janajati* and other marginalized groups. These include the Local Self-Government Act (1999); the Three Year Interim Plan (2010); the 2007 amendments to the Nepal Civil Service Laws, Military Act and Police Regulation; and the Ordinance on Inclusion in Public Service (2009). The preamble to the Local Self-Governance Act, 2055 (1999) acknowledges the historical exclusion of indigenous communities and the need to incorporate them into the development process. The Civil Service Act includes a quota (reservation) system that specifies: "out of the 45 % of new recruitments reserved for various under-represented groups, 27 % are allocated to *ethnic groups*". The Police Regulation and the Armed Police Regulation have similar provision, in order to make the police force more inclusive. The Ordinance on Inclusion in Public Service likewise demonstrates attention to the problem of under-representation by providing a quota system that benefits indigenous peoples.

The National Human Rights Commission (NHRC), which is constituted as autonomous body, has recently started to incorporate attention to the rights of indigenous peoples within the framework of its 2008-2010 Strategic Plan, which includes a strategic area of work on "minorities". In addition, NHRC has issued recommendations in a number of specific cases and on measures for legal reform concerning indigenous peoples.

### 4.6.3 International legal and policy framework

International human rights regimes have made major advances in recent years to clarify what are the rights of indigenous peoples in international law. Clarifying the rights context for the proposed KAHEP will be an essential step in identifying stakeholder groups that are entitled to a formal role in the consultative process, and eventually in negotiating project-specific agreements such as project benefits, livelihood restoration, mitigation measures and compensation.

The GoN has ratified International Labor Organization Convention No.169 and supported the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007. In this regard, Convention 169 has significant legal attributes as a treaty, according to the Nepal Treaty Act. ILO 169 specifies that indigenous peoples have rights to the natural resources of their territories, including the right to participate in the use, management, protection and conservation of these resources.<sup>24</sup>

A major component of ILO 169 is consultation with indigenous peoples and involving them in decision making at all levels (Article 6).<sup>25</sup> Most pertinent to hydropower projects is Article 16, which prohibits the relocation of indigenous peoples, and, where absolutely necessary, it “shall take place only with their free and informed consent. Where their consent cannot be obtained, such relocation shall take place only following appropriate procedures established by national laws and regulations, including public inquiries where appropriate, which provide the opportunity for effective representation of the peoples concerned.”<sup>26</sup> Article 16 further states that indigenous peoples have the right to return to their traditional lands once the reason for their relocation no longer exists and where that is not possible, land of similar quality shall be provided (except if they opt for monetary compensation).

Among other relevant provisions of the convention, Article 7 states: “The peoples concerned shall have the right to decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well-being and the lands they occupy or otherwise use, and to exercise control, to the extent possible, over their own economic, social and cultural development.” Similarly, Article 15: “The rights of the people concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the right of these peoples to participate in the use, management and conservation of these resources.”<sup>27</sup>

UNDRIP also recognizes the right of indigenous people over the “lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired” as well as the “right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired” (Article 26).

### 4.6.4 Socioeconomic status of Adivasi Janajati

There are disparities among different *Adivasi Janajati* groups. The *Adivasi Janajati* are a diverse group in Nepal and do not all come under one socio-economic system. While *Adivasi Janajati* groups such as *Rajis* are engaged in hunting and collecting food, *Chepangs* and *Kusundas* are occupied in slash and burn, shifting cultivation and depend mainly on natural resources. On the other hand, *Newars* and *Gurungs* are more exposed to modernity and are involved in service, industry and commerce. Thus, educational attainment and representation in Government and NGOs are not uniform among the different *Adivasi Janajati* groups.

There are disparities in terms of socio-economic standing in *Adivasi Janajati* groups. According to Nepal Federation of *Adivasi Janajati* (NEFIN 2005), 10 out of 59 *Adivasi Janajati* are "endangered", 12 are "highly marginalized", 20 are "marginalized", 15 are "disadvantaged" and 2 are "advanced" or

<sup>24</sup> Article 15 (2)

<sup>25</sup> Article 6 also calls upon signatories to carry out consultations “in good faith and in a form appropriate to the circumstances, with the objective of achieving agreement or consent to the proposed measures’.

<sup>26</sup> ILO, “CI69 Indigenous and Tribal Peoples Convention, 1989”, [www.ilo.org](http://www.ilo.org)

<sup>27</sup> ILO, “CI69 Indigenous and Tribal Peoples Convention, 1989”, [www.ilo.org](http://www.ilo.org)

better off on the basis of a composite index consisting of literacy, housing, land holdings, occupation, language, education, and population size (Table 4-38).

**Table 4-38: Classification of Adivasi Janajatis**

| Region          | Classification of Adivasi Janajatis                    |   |  |   |            |
|-----------------|--|---|--|---|------------|
|                 | Endangered   | Highly marginalized                             | Marginalized   | Disadvantaged   | Advantaged |
| Mountain (18)   |  | Shiyar, Shingsawa (Lhomi), and Thudam           | Bote, Dolpo, Larke, Lhopa, Mugali, Tokpegola, and Walung | Bara Gaule, Byansi (Sauka), Chhairotan, Maparphali Thakali, Sherpa, Tangbe, and Tingaunle Thakali | Thakali    |
| Hill (24)       | Bankariya, Hayu, Kusbadiya, Kusunda, Lepcha, and Surel | Baramu, Thami (Thangmi), and Chepang            | Bhujel, Dura, Pahari, Phree, Sunuwar, and Tamang         | Chhantyal, Gurung (Tamu), Jirel, Limbu (Yakthumba), Magar, Rai, Yakkha, and Hyolmo                | Newar      |
| Inner Terai (7) | Raji, and Raute  | Bote, Danuwar, and Majhi                        | Darai, and Kumal   |   |            |
| Terai (10)      | Kisan, and Meche (Bodo)                                | Dhanuk (Rajbansi), Jhangad, and Santhal (Satar) | Dhimal, Gangai, Rajbansi (Koch), Tajpuriya, and Tharu    |   |            |

Source: NEFIN, 2005

In terms of representation in Nepal's power structures, *Janajatis* other than *Newars* constitute a small percentage. However, in Constitutional Assembly (CA) member election 2008, of total 601 CA members, 36.3 % of elected members (216) are *Adivasi Janajati*. This marks a dramatic increase of *Janajati* representation in the nation's highest policy making body as compared to the 24.3 % of the House of Representative members in the 1999 election.

Nepal Living Standard Survey, 2003/04 shows that the national literacy rate (15 years and above) is 48 %. Male and female literacy rate stands at 63 % and 39 % respectively. The male and female literacy rate (6 years and above) stands at 62.1% and 37.6% in EDR. According to the Census 2001, the national average literacy rate is 53.7 %. The literacy rate varied widely among the various caste/ethnic groups in the Census 2001. While *Newar/Thakali* figured with the highest proportion of literates at 72 %; the literacy rate of *Limbu* is 59 %, *Rai* 58.8 %, *Magar* 57.7 %, *Gurung* 57.6 %, *Sherpa* 45.8 %, *Tamang* 42.0 %, and *Majhi* 37.4 %.

Poverty is rampant among *Dalits* and *Janajatis*. A high incidence of poverty is found among *Dalits* (46%) (NLSS 2003/04). During 1995/96 to 2003/04, the poverty decline occurred more than 20% among Hill *Janajati* compared to 46% Hill *Brahmin/Chhetri* (UNDP 2009).

According to the CBS 2001, the national average literacy rate for women is 42.5 %. The literacy rate for *Janajati* women is 43 %. Among the *Janajati* groups, *Newar* and *Thakali* female literacy rates stand highest at 63.4 % and 62.5 % respectively. The female literacy rate of *Limbu*, *Rai*, *Magar*, *Gurung*, *Sherpa*, *Tamang* and *Majhi* is within 25 to 50 percentages.

#### 4.6.5 Adivasi Janajatis in the project VDC

The project VDCs has mixed communities. These communities reflect a wide range of cultural, linguistic and religious background.

## Demography

The population of *Adivasi Janajati* of the project VDCs is 11,262, which is 53.4 % of the total population. In the project VDCs, the distribution of *Adivasi Janajati* groups shows that there is majority of *Adivasi Janajati* in Nangkholyang (73.84%) followed by Panchami (50.21%), Thechambu (48.86%), and Amarpur (47.42%) (Table 4-39). *Adivasi Janajati* population is 53.40 % of the total population of four project VDCs .

**Table 4-39: Indigenous Population in the project VDCs, 2001**

| District     | VDCs         | Total VDC Population | Total Population of Indigenous Peoples* |                     |
|--------------|--------------|----------------------|---|---------------------|
|              |              |                      | Number                                  | % of VDC Population |
| Taplejung    | Nangkholyang | 4015                 | 2965                                    | 73.84               |
|              | Thechambu    | 3772                 | 1843                                    | 48.86               |
| Panchthar    | Amarpur      | 7743                 | 3658                                    | 47.42               |
|              | Panchami     | 5568                 | 2796                                    | 50.21               |
| <b>Total</b> |              | <b>21089</b>         | <b>11262</b>                            | <b>53.40</b>        |

Source: CBS, 2001

\* Limbu, Rai, Tamang, Gurung, Sunuwar, Sherpa, Newar and Majhi

### *Adivasi Janajati* communities

Within indigenous groups of the project affected VDCs, the first three major indigenous groups are *Limbu* (56%), *Rai* (14%) and *Tamang* (10%). Amarpur is the most affected VDC by the project activities and most of the affected households are from *Limbu*, *Tamang* and *Majhi* indigenous groups. Each of these groups is briefly described below:

#### *Limbu*

*Limbus* were the *Kipat*<sup>28</sup> holders in the eastern hill district of Nepal. They occupied these areas under *Kipat* tenure by virtue of being "first settlers". The most important characteristic of this form of land tenure is the inalienability of the land: as *Kipat* land was tied to the social group, it could not be sold to immigrants by virtue of its nature (Remgmi, 1978). According to the Land Evictions of the Country Code (1963), *Kipat* which lacks official documents, is equivalent to *Raikar*<sup>29</sup> lands on which taxes can be levied. This has led to the loss of indigenous based communal ownership i.e. transforming *Kipat* land into *Raikar* land which can be used, transferred, and disposed of by anyone. Numerous linguistic



**Photo 11: Limbu Adivasi Janajaiti**

relics still bear witness of the period in which the *Limbus* were the first settlers in their territory. For example, there are many places-Thechambu, Nangkholyang, Angbung (later became Amarpur) and

<sup>28</sup> Traditional land tenure system. In this system, "A *Kipat* owner derives rights by virtue of his membership in a particular ethnic group, and/or its location in a particular area. In contradiction to the *Raikar* system of land tenure and its derivatives, therefore, *Kipat* represents a communal form of land tenure." (Regmi 1978:534).

<sup>29</sup> *Raikar* is a form under which the state functions as the landowner.

rivers-Tawama (later became Tamor), Kawama (later became Kabeli), Fawakhola etc were named in *Limbu* language. *Limbu* as one of the major indigenous communities of the project area, hold their ancestral lands; their languages are in common practice, their ethnological history is alive, they have their own myths, customs, rituals and the traditional socio-political institutions are still effective to some extent, and their tangible cultural heritage is still safe. The *Limbu* (they call themselves "Yakthumba") can be considered as the 'original' inhabitants of the area since all other groups have migrated to the area at a later date, according to historical evidence (Caplan, 1970). They now comprise 53.40 % of the total population of the project VDCs (Table 4-39). *Limbus* of the project areas consists of number of sub-group (*thar*) which may be referred to as sub-tribes. Some, such as *Mennyangbo* are found in the Thechambu VDC, *Khinding* in the Nangkholyang VDC, *Hembya* and *Lingden* in the Amarpur VDC and *Sigu* in the Panchami VDC. Many of the *Limbu* have inter-married with *Rai* and other indigenous and caste groups.

### *Rai*

*Rai* is another *Adivasi Janajati* group that have migrated to the present locality from 18<sup>th</sup> century onward from Majhi Kirat (Middle Kirat region). *Rais* are viewed as the largest *Kirati* group. There are more than twenty eight linguistically and culturally distinct groups subsumed under the ethnonym "*Rai*" and numbered among the "autochthonous" inhabitants of the eastern Nepal hill area, who are generally known as *Kirat* (Gaenzle, 2000). It was only during the course of the past century that this title became an ethnonym for the corresponding groups (Yamphu, 2007). However, the term "*Rai*" is not by origin an ethnonym but a title conferred by Hindu rulers upon one segment of the tribal chieftain of East Nepal in recognition of their semi-autonomous status, but also with the idea of incorporating them into the state administrative system. *Rai* is a title conferred upon the *Jamindars* (landlords). In the project area, there are *Thulung*, *Dumi*, *Sampang* and *Chamling Rais*. These *Rai* communities are found in both upstream and downstream area of the project.

### *Tamang*

*Tamang* form one of the major Tibeto-Burman speaking communities in Nepal, and maintain a belief that they originally came from Tibet (Bista, 1967). Originally, they were the inhabitants of just surrounding of the Kathmandu valley that have migrated to the present locality in 1750 BS (18<sup>th</sup> century) from Trisuli (based on local informant). Seventh generation of *Nishur Tamang* people now are living in the project area. *Tamang* living in the project area retain very little of their original culture, art, or religion. They usually adopt the cultural patterns of their immediate neighbors. There are many sub-groups (*thar*) in *Tamang* community such as *Nisur*, *Pakhrin*, *Waiba*, etc. *Tamang* of the project area are Buddhist and they have their own monastery (Gumba). Every ritual of *Tamang* is guided by Lamaism. Mostly, *Tamang* are found in the upstream area of the project.



**Photo 12: Tamang Adivasi Janajati**

### *Majhi*

*Majhi* (traditionally known as fisherman) are one of the indigenous communities of Nepal. The main traditional occupation of the *Majhi* people is boat building and riverain transport services. The *Majhi* people are only found in Pinasi-9 of Amarpur, near the powerhouse site. The *Majhi* of Pinasi Amarpur-9 have lost their mother tongue. They are economically, socially and politically weak group. According to the NEFIN's classification, *Majhi* is defined as a highly marginalized group.



## Newar

Newar are the indigenous inhabitants of Kathmandu valley. They are scattered across the country especially in every market town and village in the outlying districts, the hills and the Terai. According to the NEFIN's classification, Newar is defined as advantaged group. However, in the project site, Newar community lived in the downstream area (Amarpur-7, Apegauda) and has more than 10 households. They called themselves as Newar, however, they have totally lost their culture and language and their traditional life style.

## Self-identity

### Oral literature and language

The *Adivasi Janajati* communities especially, *Limbu* are very rich in language and oral literature in the project area. *Limbu* language has its own script known as *Kirati Srijanga* script (Photo 13). The villages and rivers are named in *Limbu* language which later changed with Hindu meanings. For example Amarpur (*Angbung* "L"), Kabeli Khola (*Kawama* "L"), Thechambu, Nangkholyang, Panchami (*Simbuwa* "L"), Bijuli Bhanjyang (*Khokmakham* "L") etc. are later changed names. They have myths and mythology attached with this territory.

As reported during consultations, Amarpur was originally inhabited by *Lepcha* and *Limbu* forefathers defeated them and acquired Amarpur. Present *Sangdang*, *Sigu* and *Mayong Thebe* clans of *Limbu* were once *Lepcha*. Some historical sites of *Limbu* are also located in the project area. An historical palace is located in the top of Amarpur VDC ward no 3 where remainders of old palace are still found. According to myths, two clan groups of *Limbu*- *Thindaling Khokyang* and *Yonghyang* had fought in that place.



Photo 13: Srijanga Script

*Adivasi Janajati* communities of the project areas have practiced traditional occupation, possessed indigenous knowledge, and preserved it for a long time. *Limbu* have profound attachment to their land and territory that invigorates various components of culture. Their culture, traditional customs and socio-political institutions are alive, strong and effective to a great extent because their language is alive and have their own mythology or values, norms and belief system. The *Limbus* as dominant group even within the *Adivasi Janajati* groups who were enjoying ethnic autonomy till some decades ago and have remained intact. In the project area, cultural enrichment does not produce racial enmity or inter-group conflicts; rather it helps to increase the feeling of brotherhood and cooperation. However, advancement in the stages of development and frequent contact with outside world may lead to cultural destruction.

In the project area, there are no cultural and archaeological sites that are directly affected and would therefore have to be moved. Based on the FGD discussions and field visit, did not encounter any items of archaeological importance. No evidence of prehistoric human habitation; no stone implements or other indications of Paleolithic or Neolithic habitation were found. However, there are some sacred places and historical sites associated with the existence of *Limbu* that are located in the near vicinity from the project area.

### Kipat –Subangi

It can be argued that the *Kipat* was the basis of cultural autonomy of *Limbu*. *Kipat* seemed as a symbol of ethnic and political identity among the *Limbu*. *Kipat* was first introduced in 1774 and the government has tried to withdraw these rights by forcing the *Kipatiya* to abide by national policies

and regulations that undermine the autonomy granted in the *Kipat* system (Caplan, 1970). But the emergence of *Kipat* system is not clear. In this regard, Gaenszle writes, "While the origin of the *Kipat* system is not entirely clear, it already existed under the Sen Kings in Kirat, as only those plots of land that were held in *Kipat* at the time were recognized by the Gorkhals" (Regmi, 1978: 537, cited by Gaenszle, 2000). According to the Land Evictions of the Country Code (1963), *Kipat* which lacks official documents, is equivalent to *Raikar* lands on which taxes can be levied. This has led to the loss of indigenous based communal ownership i.e. transforming *Kipat* land into *Raikar* which can be used, transferred, and disposed of by anyone.

The main characteristic of the *Kipat* system is the inalienability of the land. The *Kipat* land was tied to the social group and in the course of time, it had become the socio-political address of the *Limbu*. *Limbu* use *Kipat* or refer to the specific plots of land they farm, the term means much more than that. Everyone can find a *Limbu* talking about *Kipat* with pride and possessiveness. *Kipat* means old thing; It counts them to past that is more glorious than that of other ethnic groups in Nepal. Only those *Limbu* who are the descendants, direct or adopted, of the original ancestors who first settled in the village can hold *Kipat* rights to the lands in *Limbuwan*. *Kipat* connects them with more than the past grandeur of their *Kiranti* ancestors. They are not like others, such as *Brahmins*, *Chhetris*, *Sherpas*, *Tamang*, *Newars* and *Gurungs*, who had moved into *Limbuwan* after the unification of the Kingdom. *Kipat* draws a conceptual boundary between those who are footed in the land and history of *Limbuwan* and those who are not.

Later, the *Kipat* system was abolished through Land Reform Act 1964. As a result *Limbu* and *Rai* are historically deprived of land and natural resources. The dominant groups have expropriated land, habitats, water and other natural resources<sup>30</sup> that were once communally owned known as *Kipat* by the *Limbus*.

### **Ritual practices, traditional institutions, and customary laws**

The traditional systems of the indigenous groups of the project area like worshipping villages, places, hills, mountain, rivers, streams, lakes, ponds, and trails are still in practice. They believe that deities are living on the earth. Deities are not represented in human figure icons, rather are worshipped in the form of natural objects like stone, trees etc. It is believed that deities seem to be sensitive to humans and appear to their devotees through the medium of humans (shamans, spirit possessors). Service to deities is performed by their respective priests or shamans. Regular worship is not compulsory and offerings are given on particular occasion and deities are propitiated when needed. Myths and tales describe the greatness of such traditions. The reasons for the tradition of practicing rituals rely on the ground that deities are of cruel nature and they are propitiated than adored. Rituals for the propitiation of deities are performed to recover from ailments, to ensure wellbeing of children, to secure economic activities, to relieve anxieties, and to restore hope and confidence. Festivals in honor of the deities are celebrated and special sacrifices are performed in order to avoid trials and tribulations. These rituals are just the means to achieve an end.

### **Cultural and archaeological sites**

The SA team carried out a screening exercise to map out cultural and archaeological sites located in the project VDCs. There are no cultural and archaeological sites (especially of *Adivasi Janjati*) located within the project area but there are some sites located in the surrounding VDCs (Table 4-40). None of them will be affected directly, however, indirect impact may be observed on some cultural and ritual activities associated with these cultural sites.

---

<sup>30</sup> Special Rapporteur on the situation of human rights and fundamental freedoms of Indigenous peoples Report 2007-A/HRC/12/34/Add.3

**Table 4-40: Cultural and archaeological sites of Adivasi Janajati located in the project VDCs**

| S N | Name of cultural/archaeological resources | Area located   | Distance                        | Time you worship                         | Socio-cultural importance                        | Associated with  |
|-----|---|--|---------------------------------|--|--|--|
| 1.  | Phaudar Paty                              | Mechi Highway  | 2km from Singapur               |  | Historical                                       |  |
| 2.  | Hillihang Palace                          | At the meeting point of Nagi, Amarpur and Panchami VDCs. | It is 4km from Hembyegaun       | In December                              | Ancient palace of Limbu King                     | It is associated with the existence of Yakthumba in the present territory. |
| 3.  | Khalanga Palace                           | Amarpur-3  | 3 km from Hembyagaun, Amarpur-6 | Morning/Evening but occasionally         | Ancient palace of Limbu King                     | It is associated with the existence of Yakthumba                           |
| 3   | Shingha Devi                              | Amarpur-6,   | 3.5 km from Rajabesi            | Chandipurne (Full Moon Night of Baishak) | Religious  | Power  |
| 4.  | Manghim                                   | Prunedanda, Thechambu                                    | 2 km from headwork              | Morning/Evening but occasionally         | Historical/cultural site of Limbu ethnic group   | It is associated with the existence of Yakthumba                           |
| 5   | Chetlung                                  | Amarpur-4  | 4 km from Hembyagaun            |  | Historical boarder that divides ethnic territory | It is associated territory and autonomy of Limbu clans                     |

Source: Field Study 2010

## 4.7 Gender, disadvantaged and vulnerable groups

### 4.7.1 Vulnerable communities in Nepal

Vulnerability is a multi-dimensional concept that needs to be defined within the specific contexts in order to be meaningful and useful for project impacts and planning purposes. In the context of the KAHEP, vulnerability refers to the households and the communities that may have considerable difficulties in participating in the livelihood restoration process and benefit sharing due to serious lack of required skills, resources, experience and organization. KAHEP tends to produce benefits that accrue to groups other than those who bear the social and environmental costs. Those who bear the costs are quite often poor, and vulnerable or unrepresented such as *Adivasi Janajati*, women and *Dalits*. It should also be understood that vulnerable groups face considerable problems in the adjustment to new sites and transition to different livelihood systems. Care must be taken and provided additional measures to ensure that they too become project beneficiaries.

National Living Standard Surveys for 1996 and 2003, Human Development Report 2009 and major other statistical sources in Nepal clearly demonstrate that women, disadvantaged Janjatis and *Dalits* are not just excluded socially but are also likely to be economically backward compared to other groups. The degree of vulnerability of these three groups increases if they are landless, live in remote locations and work as marginalized farmers or agriculture laborers. Therefore, the above three groups are disadvantaged in terms of:

- (i) access to livelihood, assets and services;
- (ii) social inclusion and empowerment;
- (iii) poor resource base and are considerably below the poverty line;
- (iv) highly dependent on natural resources, are only partially integrated into market economic activities;

- (v) socio-economic marginalization; and
- (vi) cultural criteria.

#### 4.7.2 Vulnerable communities in the project area

Based on above stated criteria, the following groups are considered vulnerable groups:

- Indigenous Peoples (*Adivasi Janajati*);
- *Dalits*; and
- Women headed households.

##### ***Adivasi Janajati***

The sub-section 4.6 describe the status of socio-economic situation of *Adivasi Janajati* and their related rights. In consideration of above issues, *Adivasi Janajati* have been considered as vulnerable group in the project area.

##### ***Dalits***

The term *Dalits* refers to people who are religiously, culturally, socially, economically and historically oppressed, excluded and untouchables. The *Dalits* community lives in many regions of Nepal, practices many faiths, is multi caste and multi lingual and embraces a rich multi-cultural diversity. However, confusion yet exists, which group falls in the category of *Dalits* (Bennet, 2006). For instance, Ministry of Local Development (1997) defined 23 groups as *Dalits*, while *Dalits* Commission (2003) and Dahal et al (2002) classified 19 groups and the Census 2001 identified and counted only 16 *Dalits* groups. Despite national and international provisions legislating against discrimination, *Dalits* are the *de facto* 'untouchables' of contemporary Nepal. They are frequently denied access to public places and the right to drink water from public wells. They are the victims of violence because of social taboos. They endure an estimated 205 forms of discriminatory practice in their daily lives.<sup>31</sup>

The name '*Dalits*' mean the oppressed. It is a term used by the *Dalits* themselves to denote their protest. In the past, the term '*Dalits*' was used to refer to all of those groups who were oppressed, but in contemporary Nepali parlance, it is used to refer only to those officially categorized within the ex-untouchable castes by law and for a couple of decades it has been used as a common identity of a group of people, who are legally ex-untouchables and behaviorally present untouchables (Kisan; 2009). The state of untouchability is the first and foremost identity of *Dalits*.



**Photo 14: Interaction with *Dalits* at Amarpur-4, Bhaluchowk**

According to the Census 2001, *Dalits* comprises 13 % of the total population but the figure is contested. *Dalits* are more than 30% of the population in 211 VDCs of west and far-west hills and eastern Tarai. Hill *Dalits* such as *Kami*, *Damai* and *Sarki* are widely distributed and they comprise 81, 71, and 55 % respectively of VDCs population. In 31 districts, *Dalits* population is higher than 12 %. They are in absolute majority in 12 VDCs of 8 districts. Another fact is that *Dalits* people outnumber Yadav in 8 districts of eastern Tarai (Sharma, 2007 pp.51).

<sup>31</sup> Bhattachan, KB. etc. Al. 2003. *Existing Practices of Caste-based Untouchability in Nepal and Strategy for a Campaign for its Elimination*. Kathmandu: Action aid Nepal.

A study shows that 23% of hills origin *Dalits* and 44% of Madhesi *Dalits* are entirely landless<sup>32</sup> along with the *Haliyas* (a kind of bonded labor) who were working on other people's land. The literacy level of *Dalits* groups is much lower (33.8%) than the national average of 54.1% (CBS, 2001). Literacy among the Terai *Dalits* is lower (21.1%) compared to that of the Hill *Dalits* (41.9%). Considering the health and nutritional status, the life expectancy of *Dalits* at birth is 57.7 years compared to the national figure of 60.4 years (CBS, 2001).

There are nearly about 110 *Dalits* households distributed in the ward no 3, 4, 6 and 8 of Amarapur VDC. The largest group is that of the metal workers, the Biswakarma, including Kami (blacksmiths) and Sunar (gold workers). Damai (tailor) is another dominant group in the Amarapur VDC. The average family size of the *Dalits* was 6. The project will not directly affect any *Dalit* household.

### **Women**

As per the 2001 Census, women constitute almost 43 % of the labor force, 48 % in agriculture and 34 % in the non-agriculture sector. In addition, about 5 % of the households reported some land in legal ownership of female. Similarly, only 0.8 % households have house (ownership) in women's name. Only 5.4 % households reported ownership of livestock, despite multiple credit-institutions targeting and funding this activity for women. Only 0.8 % household had all three, house, land and livestock in female ownership. Female headed households, which constituted about 15 % of the total surveyed households, owned smaller land holdings than male headed ones. Compared to male heads, female heads of the households are educationally much more disadvantaged.

The overall literacy rate of women in Nepal is only 42.49 %, which is remarkably low as compared to men, i.e. 65.08 %, leading to a gender gap of 22.6 %. Women's contributions to the economy in the form of household maintenance and care work continue to remain unaccounted for (CBS 2001).

As in other parts of the country, women are often dominated by men in the project area also. Women are generally involved in household activities like cooking, washing, rearing of children and agricultural activities. However, a few women in the project area are engaged in skilled works that includes teaching, small businesses, sewing and knitting of household woolen mats, etc. Women have larger workload in the home but their work is not generally evaluated because men work outside the home and they are considered as the main earner for the family. Women are often deprived of the decision making authority and pursuing alternative sources of livelihood. In the project area, women have user rights over the land and forest, but are rarely allowed to inherit the land they use. The family also controls women's agricultural labor through various social mechanisms. Women are not commensurated for the labor they expend on the land in both farm and nonfarm activities.

---

<sup>32</sup> Sustainable Development Forum. 2006. Ownership of *Dalits* in Land: A Study. Kathmandu: Sustainable Development Forum

## **CHAPTER 5**

# **ASSESSMENT OF THE PROJECT IMPACTS**

## 5 ASSESSMENT OF PROJECT ADVERSE IMPACTS

The execution of the KAHEP will have an impact on four VDCs-Amarpur and Panchami of Panchthar district and Thechambu and Nangkholyang of Taplejung district. This chapter deals with potential socioeconomic and cultural adverse impacts of the KAHEP based on the baseline identified in the project area.

### 5.1 Land acquiring

The project envisages acquiring land on permanent and temporary basis (Table 5-1). However, KAHEP is not going to displace any family completely. Of the total land requirement of 47.718 ha of land for the project, 22.508 ha is permanent land requirement while temporary land requirement is 25.21 ha. In terms of land use, 61.10% is the riverine area including riverbeds, river flood plains and elevated banks. Agricultural land (cultivated and marginal) required is 35.60 % followed by 3.30% of the forest land including community, communal and Leasehold Forests. Out of total 1.57 ha forest land required, 0.21 ha belongs to Thulo Dhuseni CF, 0.12 belongs to Kabeli Garjite CF, 0.97 belongs to LF and 0.27 is communal forest land. The riverine areas belong to the GoN.

Of the land use types acquired permanently, only 7.678 ha is agricultural land and 1.57 ha is forest land, the rest is the riverine area. Major part of the temporary land required also lies in the riverine area being occupied by the project facilities such as reservoir, quarry and muck disposal. The agricultural land required temporarily are the sites of construction camps and storage facilities totaling to 9.31 ha. The proposal does not envisage usage of the forest area for temporary use.

**Table 5-1: Land required for construction of project (in ha)**

| Project component sites   | Land requirement (ha) for the project according to the land category |               |               |               |               |               | Total |
|---|--|---------------|---------------|---------------|---------------|---------------|-------|
|   | Private land (Cultivated and Marginal)                               |               | Forest land   |               | River         |               |       |
|   | Temp-acquired  | Perm-acquired | Temp-acquired | Perm-acquired | Temp-acquired | Perm-acquired |       |
| Reservoir   | 0  | 0.293         | 0             | 0.57*         | 0             | 9.11          | 9.973 |
| Barrage, Operating Platform, Intake                             | 0  | 0.954         | 0             | 0.03*         | 0             | 2.67          | 3.654 |
| Sensor Building   | 0  | 0             | 0             | 0             | 0             | 0.01          | 0.01  |
| Powerhouse and Switchyard                                       | 0  | 2.182         | 0             | 0.27          | 0             | 1.47          | 3.922 |
| Surgeshaft and penstock alignment                               | 0  | 0             | 0             | 0.7           | 0             | 0             | 0.7   |
| Access Road to Headworks  | 0  | 0             | 0             | 0             | 0             | 0             | 0     |
| Campsite at Headworks   | 2.20   | 0.709         | 0             | 0             | 0             | 0             | 2.909 |
| Campsite at powerhouse  | 3.70   | 0             | 0             | 0             | 0             | 0             | 3.70  |
| Engineer's Camp at Powerhouse (Permanent)                       | 0  | 3.54          | 0             | 0             | 0             | 0             | 3.54  |
| Quarry Sites at Headworks                                       | 0  | 0             | 0             | 0             | 3.50          | 0             | 3.50  |
| Quarry Sites at Powerhouse                                      | 1.01   | 0             | 0             | 0             | 3.30          | 0             | 4.31  |
| Aggregate Crushing, Storage and Batching Plant etc (Headworks)  | 1.0  | 0             | 0             | 0             | 0             | 0             | 1.0   |
| Aggregate Crushing, Storage and Batching Plant etc (Powerhosue) | 1.40   | 0             | 0             | 0             | 0             | 0             | 1.40  |

|                                  |             |              |             |             |              |              |               |
|----------------------------------|-------------|--------------|-------------|-------------|--------------|--------------|---------------|
| Spoil/Muck Disposal (Headworks)  | 0           | 0            | 0           | 0           | 4.60         | 0            | 4.60          |
| Spoil/muck disposal (Powerhouse) | 0           | 0            | 0           | 0           | 4.50         | 0            | 4.50          |
| <b>Total</b>                     | <b>9.31</b> | <b>7.678</b> | <b>0.00</b> | <b>1.57</b> | <b>15.90</b> | <b>13.26</b> | <b>47.718</b> |

Source: Field Survey, 2010

Note: \*0.27 ha is communal land in Thechambu VDC, managed and utilized by 10 Limbu households traditionally but it is not officially transferred to their name. They claim that their claim for this land still exists in Sat Number Fatwari of the district revenue office of Taplejung.

### 5.1.1 Impact on agricultural land and loss of production

A total of 16.988 ha agricultural land (9.31 ha temporarily and 7.678 ha permanently) will be affected by the project. Thirteen (13) households will lose their privately owned 7.678 ha land permanently. None of the private and public structures fall under the project affected land. Moreover, none of the Affected Families are physically and economically displaced.

Loss of 7.678 ha agricultural land on a permanent basis will incur an annual production loss of food grains and fodder, fuel and timber. As per the local production practice, about 14.784 Metric Ton (MT) of agricultural production will be annually lost due to permanent land loss (Table 5-2).

**Table 5-2: Annual production in cultivated land in terms of agricultural production**

| Items        | Unit Price | Production loss (MT) |
|--------------|------------|----------------------|
| Paddy        | 25000/MT   | 4.83                 |
| Maize        | 20000/MT   | 8.33                 |
| Pulses       | 80000/MT   | 1.624                |
| <b>Total</b> |            | <b>14.784</b>        |

Source: Field Survey, 2010

A total of 141 numbers of trees and poles of size greater than 10 cm diameter at breast height will be lost from the private land due to permanent land loss (Table 5-3).

**Table 5-3: Loss of trees in private land**

| Tree class                   | Unit Price | Production loss (Numbers) |
|------------------------------|------------|---------------------------|
| Tree (Timber and Fuel wood)  | 10000/Tree | 67                        |
| Poles (Timber and Fuel wood) | 1000/Poles | 74                        |
| <b>Total</b>                 |            | <b>141</b>                |

Source: Field Survey, 2010

## 5.2 Impacts on fishing

Diversion of the Kabeli River will have effects on riverine fish resources of the Kabeli from November through June for nearly 5.6 kilometers downstream. The communities living close to the river usually go for fishing when they are free from the agricultural works. This is a sort of recreational fishing. The collected fish is used for household consumption and selling within the community if the catch is surplus. The fishing markets are not developed in these areas. Based on FGD with local communities, there are no professional (fulltime) fishermen along the dewatering stretch of the Kabeli River. People involved in occasional fishing are from different ethnic backgrounds and used traditional gears for fishing.

Fishing in a river is not an on the spot job, and normally fishing area for the fishermen in a river like Kabeli is stretched of 4 to 5 km upstream and 4 to 5 kilometer downstream. The fishermen will put



efforts for fishing either in the Tamor river area downstream (5.6 km from dam) or upstream areas of the Kabeli in the dry season. During the wet monsoon, there will be enough water in the river for fishing. Some impacts are expected with the reduction of river flow during the dry season, and considering the options people have, the impacts are expected to be small.

### 5.3 Socio-cultural impacts

The socio-cultural impacts due to implementation of the project are described in the following sub-sections:

#### 5.3.1 Impacts on physical cultural resources

A rest house (*Pati*) for resting when funeral procession takes place is located in the powerhouse site at Pinasi Ghat (Photo 16). This resting place is built by the local resident and does not have historical /archeological significance. This *Pati* is likely to be affected by the project due to its close proximity to the project construction sites.



**Photo 16: Rest house (*Pati*) at Pinasi Ghat**



**Photo 15: Panchayan Shivalaya Temple, Kabeli Bank**

Panchayan Shivalaya Temple located about 2.5 km downstream at Kabeli Bazar is an important religious temple where people gather to worship *Shiva* and *Parvati*<sup>33</sup> (Photo 15). It hosts religious performances in different occasion that require enough and fresh water of the Kabeli River for bathing and cleaning the temple. The temple is likely to be affected due to reduced flow in Kabeli River.

#### 5.3.2 Impacts on cremation sites

There are three cremation sites (Kholakharka cremation site, Kabeli cremation site and Sirupa cremation site) located at the dewater stretch. Out of these three, the Kabeli cremation site is one of the most common sites in the dewater stretch located about 2.5 km downstream at Kabeli Bazaar. People from surrounding VDCs also bring dead bodies to cremate at this site. This is because; people have a long-lived belief that if dead are cremated and wash away ash remaining after cremation in the Kabeli River, they will go to heaven. Thus, the altered low river flow will impact the cremation site affecting the cultural practices of the people of the downstream villages.

Other two cremation site do not have cultural attachment to the local residents like Kabeli cremation sites. In addition, for Kholakharka cremation site, the local residents have option of going to Khibuna cremation site at the Phawa Khola -Kabeli confluence upstream of the dam. Similarly, for Sirupa cremation site, there is option of going to Dhobhan cremation site at the Kabeli-Tamor Confluence.

<sup>33</sup> Hindu God and Goddess

### 5.3.3 Impacts on religious practices

Hindu pilgrims from the surrounding districts and VDCs come to take religious bath (*Makkar*) on the day of *Makkar Sankranti* (generally 15<sup>th</sup> of January) every year at the confluence of the Kabeli and the Tamor Rivers. Besides this, Hindu pilgrims go either to Tamor or to Kabeli Rivers to worship in every religious day like *Aunshi*, *Kuse Aunshi*, and *Matatirtha Aunshi* as per their accessibility to the rivers. However, a belief attached specially with Kabeli River is- if there is long drought, villagers worship and propitiate Kabeli Ganga<sup>34</sup> (Kabeli River) asking for rain and such *Puja* (worship) is followed by heavy rain. In the dry season, low flow of water in the river will affect this activity related with Kabeli River. However, the fair (*Makkar* bath) takes place at the confluence of Kabeli and Tamor Rivers and the Kabeli River will not be completely dry throughout the year.

### 5.3.4 Impacts on customary use of fauna

It is reported that fish species like Trout (*Schizothorax* spp.) and Stone carp (*Psilorhynchus pseudochenius*) are ritually required for *Adivasi Janajati* (*Limbu*, *Rai* and *Majhi*) to worship and propitiate their clan deities and for other ritual performance. *Limbu* and *Rai* have to offer fresh trout fish to the nature/deities while doing *Nuwagi* ritual. Low flow of water in Kabeli River can result in decline of such fish species, which are important for rituals and other religious activities.



Photo 17: Trout fish required for rituals

### 5.3.5 Impacts on ritual practices

Majhi community of Pinasi village performs rituals like *Udyouli* and *Ubhauri*, *Dhuli Puja*, *Sansari Puja*, and *Tamor Puja*. in the Tamor River. Among them *Sansari* and *Dhuli Puja* spots are located in the temporarily affected land of the powerhouse site. In *Ubhauri*, they worship *Tamor Bassa*, *Thakurani* and they do this basically on the bank of the Tamor River. The construction activities at the powerhouse site can influence such ritual practices.

## 5.4 Impacts on water supply, sanitation and health

During construction, the project area will witness an increase in population due to an influx of workers and service providers. The increased population may further stress the local water supply, health, and sanitation facilities, especially around the construction camps. This may generate conflicts among the existing and new users of the facilities and may give rise to dissatisfaction. In addition, lack of proper sanitary measures and increase in water pollution and waste can lead to outbreak of epidemics and diseases such as jaundice and typhoid, particularly among the elderly, women, and children. The influx of a labor force from other areas can spread the sexually transmitted diseases, including HIV.

## 5.5 Impacts on occupational health and safety

The construction activities such as blasting, using heavy equipment and working in the river, tunnel and on steep slopes, may cause accidents and injuries. The most common injuries that might occur are due to accidental falls from scaffoldings or other structures, injuries due to falling objects such as rocks or other construction equipment, collapse of tunnel or other excavations, traffic accidents and drowning. The victims will most probably be construction worker although injuries to local people

<sup>34</sup> Ganga is a Religious River for Hindu pilgrims located in India.

are also possible. Similarly, construction practice without use of Personal Protective Equipments (PPE) like glove, boot and helmet results into the minor accidents.

Further, the changes in river flows can have ecological health impacts, especially for vectored environment disease. The effects of noise and dust pollution are obvious. These changes will create an environment to spread flue and other communicable diseases.

## **5.6 Impacts on civic amenities and institutions**

The existing civic amenities in the project area are in poor condition and the project area has limited local level institutions. The influx of workers and job seekers into the project area will put extra pressure on public facilities like transportation, health posts, police posts and schools in the project area, especially in Ward No. 5, 6, and 9 of Amarpur VDC. The extra pressure on these services and institutions can lead to adverse impacts like social instability.

## **5.7 Possible conflict between local and outsider**

The influx of large number of people with different social and cultural backgrounds and the sudden inflow of cash at the same time can result in social problems in the area. Construction workers tend to be separated from families, work long hours laboriously, and consequently develop a subculture, which may manifest itself in behaviors that are often disapproved by the local community. These perceived antisocial behaviors could be exacerbated by alcohol consumption among workers and local youths. Likewise, demand and establishment of prostitution (illegal) during construction phase is also a possibility.

Local residents may experience increases in price for housing and local services, and community infrastructure may become over-stretched in order to cope with the influx of workers. There could be increased uncertainty about future, and a change in residents' feeling about their community. There will be division between haves and have nots. These impacts may lead to resentment and friction among the local residents, incoming workers, and other newcomers who are attracted because of the project.

## **5.8 Impacts on Adivasi Janajati and disadvantaged groups**

*Adivasi Janajati*, *Dalits* and women are considered as vulnerable groups in the project area. The *Adivasi Janajati* of the project area, though belong to a different ethnicity, share common approach and patterns in their economic and livelihood activities. The project area is a mixed community where *Adivasi Janajati* and other groups live together. The *Adivasi Janajati* and disadvantaged groups are expected to experience similar physical and economic impacts from the project in spite of their caste and ethnicity differences and there are no specific impacts especially for this group.

However, given their low level of education and skills, *Majhi* households of Amarpur-9 Pinasi that reside near the powerhouse area would need more attention and support to ensure their meaningful participation in the project and truly sharing the benefits from the project. These specific measures for *Majhi*, along with the indigenous community focused programs, are considered and included in the design of the program interventions and implementation arrangements in the SAP.

Due to low level of marketable skills and lack of proficiency in competencies of these vulnerable groups it is most likely that many of these groups in the project area will be in a disadvantageous position to avail of employment opportunities during the construction phase. These vulnerable groups will need extra consideration for their meaningful participation in the project cycle.

## **CHAPTER 6**

# **ASSESSMENT OF PROJECT BENEFITS AND DEVELOPMENT OPPORTUNITIES**

## **6 ASSESSMENT OF PROJECT BENEFITS AND DEVELOPMENT OPPORTUNITIES**

KAHEP facility will result in many community benefits at the national, regional and community levels. The key macro-economic benefit of the project is providing the infrastructure necessary to meet the incremental demand for power in the country. In addition to the resettlement and compensation package that each directly affected household and person will receive, KAHEP is committed to provide community benefits in a sustainable manner by implementing the SAP. The area that will benefit from the SAP are mainly project affected four VDCs: Amarpur and Panchami of Panchthar district and Thechambu and Nangkholyang of Taplejung district. The SAP measures are expected to benefit the wider communities in the project area, beyond those individuals and households who have been or will be directly affected, e.g. by loss of land, crops or other assets. The key areas where regional and community benefits are expected to occur as a result of the KAHEP facility are described below:

### **6.1 Health care facilities**

Government health facilities of sub-health post category are available in each of the affected VDCs. In addition, there are district level government hospitals in each affected districts that serves the district and are expected to handle any medical emergencies arising at the project sites. All of these facilities are currently under pressure. Although the anticipated influx of new workers and some of their families is expected to represent a small increase in the populations of the project districts, measures will be implemented to strengthen the local health facilities. KAHEP is committed to strengthening health facilities of each affected VDCs so that the wider project-affected-population (and not just those compensated or employed as a result of the project) can enjoy improved health care services. Details of this and further initiatives will be provided in the SAP.

### **6.2 Employment opportunities**

It is expected that a minimum of 50 % of the unskilled workforce for the construction phase of the project will come from the affected villages. This phase will employ 600-800 people at the peak period. KAHEP in partnership with potential local NGOs will develop skills refresher courses in motor vehicle repair, electrical installation and fitting, welding and fabrication, plumbing, metal fabrication and brick/block laying. Courses will be designed to meet the needs of interested Project Affected Peoples (PAPs).

Some market centers will be created in the vicinity of the contractor's base camp at the dam and powerhouse area. These markets will aim primarily at selling food and basic goods to the construction workers. The area will be made road accessible. Development of such market centers will provide indirect job opportunities, mainly for women in addition to those created directly by the project.

### **6.3 Strengthening of local economy**

Local economic benefits from the project are those, which accrue to employees and the wider community, over and above the benefits accruing from alternative income generating activities. These include:

- Direct employment of local people during construction and operation of the project;
- Induced employment and increased trade in service industries, particularly during the dam and powerhouse construction period;
- Benefits from indirect employment and trade, industries and commercial activities, which become established as a result of the greater availability of development infrastructures including electricity and road: and

- Particular attention and efforts to ensure indigenous community and other vulnerable groups enjoy culturally appropriate benefits from these support.

These are above and beyond the community development benefits to be provided by KAHEP.

Similarly, during the construction phase, the generation of local employment opportunities will act as a catalyst to stimulate the local economy. Increased incomes in the area will encourage the formation and growth of local businesses, which will in turn create new indirect employment opportunities. Similarly, the availability of cash from employment and provision of goods and services will result in opportunities for investment. As a result new shops, hotels and residential structures will be established to meet the demand of the construction related population for essential commodities. Employment opportunities directly or indirectly related to the project will also provide opportunity for local people to enhance their skills in different trades.

Thus, the construction of the project will cause an economic spin-off in the project impact area. If properly managed and controlled by the KAHEP and the district authorities, such impacts are expected to be high in magnitude, regional in extent and of medium duration.

During the operation phase, in addition to employment, the main economic benefits of the project will be activities resulting from increased availability of power locally. Due to increased accessibility and better market opportunities developed during the construction phase, economic activities may still continue in the project areas. All of this will create employment opportunities and means of livelihood for households, including vulnerable families, of the project area. There is considerable potential for development in the retail, construction, hotel and industrial sectors in the town. The lack of reliable, economic power supplies is constraining development in the region and KAHEP is expected to fulfill this gap. However, market areas, houses, hotels, etc. may also get deserted if other economic activities do not fill in the economic activities that prevailed during the construction phase.

As per the Electricity Act, 50% of the royalty that GoN will receive during the 30 year license period will be given to the districts where the project is located. Utilization of this revenue by the districts for infrastructure and other development activities can ultimately lead to improvement in the socioeconomic status of the project areas.

## **6.4 Drinking water**

KAHEP will contribute in the establishment of new water schemes in the areas to strengthen existing community-level water supply facilities (such as fetching water from wells and springs) in the settlements of the project affected VDCs. It is intended that in the long-term the schemes will be managed by the community in compliance with the Rural Water Supply national policy of Nepal. Thus support to drinking water scheme will have positive impacts on general public health. It will make water collection easier and less time-consuming to women and children.

## **6.5 Rural electrification**

The project area has no electricity facilities. However, some households have solar panels installed for lighting purpose only. Local people have great expectation of rural electrification program from KAHEP. This is their strongest request coming out of the consultation process. However, much more technical work needs to be done to study the alternatives, technical options and the feasibility before the project can assess its financial implications and affordability for Kabeli Hydro project. KEL is in discussion with the government and the World Bank to explore the options of rural electrification. KAHEP will undertake a needs assessment within the affected villages, and will work with the World Bank and relevant government agencies to explore various options for local electrification.

## **6.6 Training and financial services**

This component benefits two different categories of affected people: those who will receive compensation, part of which may be in cash; and people from the area who do not lose physical assets and will not receive cash compensation, but can benefit from the project. KAHEP will provide training and financial services to develop and strengthen cooperatives, savings, and credit association,

which at present are available in the project areas. The expected results of the training and financial service are:

- Improved inputs and business practices;
- Planning and record keeping;
- Savings and credit; and
- Small holder associations.

## **6.7 Education**

KAHEP is committed to strengthen education opportunities in the affected villages. Possible activities and support include: improvement of the existing school structures (i.e., classrooms, library, recreation and sanitation facilities); construction of new structures; and, provision of teaching materials and equipment. Educational institution for support will be identified through series of consultations with local communities.

## **6.8 National level benefits**

The project will provide 37.6 MW of power to the much needed electricity grid of Nepal. This will have large positive impact on the macro-economic growth of the country by reduceing the dependency on load shedding. Moreover, Hydroelectric being clean renewable energy will also protect the environment.

## **CHAPTER 7**

# **PUBLIC CONSULTATION, PARTICIPATION, AND DISCLOSURE**



## 7 PUBLIC CONSULTATION, PARTICIPATION AND DISCLOSURE

This section provides a framework of Public Consultation, Participation and Disclosure (PCPD) for KAHEP. The PCPD framework seeks to define a technically and culturally appropriate approach to consultation, participation and disclosure. The goals are to ensure that adequate and timely information is provided to project affected people and other stakeholders, that these groups are given sufficient opportunities to voice their opinions and concerns, and that these concerns influence project decisions. The objective of the PCPD is to develop and maintain communication between the Project and stakeholders in order to ensure that their views and concerns are incorporated into project design and implementation with the objectives of reducing or offsetting negative impacts and enhancing benefits from the Project.

The World Bank's Safeguard Policies on Environmental Assessment (OP 4.01), Involuntary Resettlement (OP 4.12) and Indigenous Peoples (OP 4.10), IFC Performance Standards and Government of Nepal's Environment Protection Act (1997), Environment Protection Rule (1997) and Land Acquisition Act 1977 all require that affected communities and individuals, GoN agencies, local NGOs and all other stakeholders be consulted in a meaningful way during preparation of Social and Environment Impact Assessments and Resettlement Action Plans. Thus, the PCPD framework is developed for KAHEP to ensure that all stakeholders will have a chance to participate in the planning of the Project.

This framework outlines community engagement activities that were undertaken during the preparation of the SA for KAHEP. This PCPD framework also provides an outline of planned community engagement activities that are to be under the SAP activities. The engagement process will be guided by the concepts of *free, prior and informed* consultation<sup>35</sup> with the affected communities to enable informed participation, and confirmation of Broad Community Support (BCS) for the project within the affected communities. The feedback from consultations has been, and will continue to be an important component of the planning process leading to the formulation of mitigation measures and compensation plans for project-affected communities.

### 7.1 Project stakeholders identification

The PCPD programs were developed and implemented taking into account the various areas of influence that were identified during scoping exercises as part of the SA study. Based on these recognized areas of influence, KAHEP stakeholders comprise six main groups:

- Communities/families/ individuals who are directly affected by the Project, including indigenous and other vulnerable community groups;
- Government agencies at the district, regional and national levels;
- Local Government Bodies ( VDCs and DDCs)
- The broader interested regional and national community;
- Political parties, Community Based Organizations (CBOs) and NGOs operating in the Project area; and

---

<sup>35</sup> **Free** – the client or its representatives have not coerced intimidated or unduly incentivized the affected population to be supportive of the project;

**Prior** – Consultation with project-affected communities must be sufficiently early in the project planning process; and,

**Informed** – Consultation with all project-affected communities on project operations and potential adverse impacts and risks, using methods of communication that are inclusive, culturally appropriate and adapted to the community's language needs and decision making.

- International NGOs, international organizations, and the local, regional and international media.

## 7.2 Mechanisms for stakeholders' participation

KAHEP recognizes that PCPD strengthens the decision making process in the resettlement planning and adds value to the quality of the Project. To date, consultation with the people who may be affected by the Project has been critical in developing SA report, and on-going PCPD will ensure that it continues to play a major role in the resettlement planning and the implementation of activities. It is the developer's (KAHEP) responsibility to inform all relevant stakeholders so that they will be fully informed about the likely impacts and the benefits.

KAHEP is committed to assist affected persons, households, families, and communities in making an informed choice about resettlement, compensation and livelihood restoration. KAHEP's Project Relation Office (PRO) combined with Resettlement Management Unit (RMU), are responsible for informing all the relevant stakeholders well in advance about the project scope and impacts, implementation steps. They are also responsible for giving notice, at the appropriate time, of the compensation and livelihood restoration options, and, in general, encouraging participation of local stakeholders in the decision-making process and implementation of the SAP. Particular attention will be given to indigenous and other vulnerable groups in selecting appropriate mechanisms and process of information dissemination and communication to ensure their full participation.

Consultation at local, regional, national and international levels has been and will continue to progress through the following three main steps:

### **Step 1: Information collection and dissemination (Scoping phase):**

This initial step was aimed to promote awareness. Information flows in two directions, both into and from the Project. Awareness was attained through collection of data relating to both human and physical characteristics that facilitate evaluation and planning for project implementation. Additionally, information was disseminated to stakeholders detailing project features, project impacts and implications of altered social and physical environments.

### **Step 2: Eliciting stakeholder concerns (SA study phase):**

Comments from stakeholders in response to information disseminated and received during Step 1 were sought for and discussion of alternatives and suggestions for mitigation activities encouraged. In this way, issues that may have been previously overlooked or outstanding concerns of stakeholders were given a forum for review. This represented needs-assessment, and provided a base from which decisions could be made.

### **Step 3: Active involvement in project design and implementation:**

Based on the decisions made in Step 2, requirements for education, training, financial and institutional strengthening were identified and integrated into project design. The process will continue during implementation so that stakeholders may be fully involved throughout the process. This process is not linear, but provides for cyclical feedback, should deficiencies at any stage be evident.

## 7.3 Consultation methodologies

Methodologies and techniques developed for public consultation have been designed to suit the needs of each target audience. These techniques also require careful consideration in order to meet the requirements of the diverse and numerous participants involved. Ranges of formal and informal consultative methods have been and will be carried out for consulting communities at different locations of the project site. The consultation techniques include: FGDs, PRA, public meetings, community discussions, in addition to the censuses and socio-economic household surveys. Besides, field trips have been organized for stakeholders including officials of World Bank, potential project sponsors, responsible officials of GoN and local and national NGOs.

## 7.4 Consultations and stakeholder engagement

The consultation and disclosure program for KAHEP have been designed and implemented so as to foster community awareness of the proposed project and SA study, and to provide opportunities for community input and involvement in the whole project cycle.

Consultation with project affected persons, local communities and their representatives as well as indigenous community groups and other vulnerable groups of the proposed project area started right after KAHEP established PRO at the project site. The main role of the PRO is to mediate between developer and local stakeholders and is responsible for informing villagers well in advance about the project scope and giving notice at the appropriate time of consultation.

Systematic consultations with the local communities and representatives of the local bodies and other stakeholders occurred during April 22 to May 1, 2010 for the project scoping exercise. The output of the scoping provided the informational basis for more detailed SA study during September-October 2010.

Consultation with the Affected Persons (APs) and households, local communities and indigenous community groups and other vulnerable groups was started during the socio-economic surveys of the households in project affected areas since September 2010. At the same time, a total of 14 FGDs have been conducted with the local people in different locations of the project areas to identify the various issues related to the hydropower project development and its socioeconomic consequences and corresponding mitigation measures. A total of 251 individuals representing different impact areas and groups such as dam site, dewatering zone, access road, powerhouse site, CFUG, LFUG, *Dalits*, Indigenous Peoples and women participated in the FGDs.

Community consultations and information disclosure have been and will be conducted adopting a cultural appropriate approach. This has and will involve the conduct of meetings/presentations in the local language; the preparation and distribution of a project description in the local language; the use of local language FM radio stations to advertise meetings and to notify the release of information materials; the engagement of local community leaders to assist in the meetings; and contact with local community and political leaders to confirm how/and with whom should consultations be conducted with.

Consultations with APs, local communities and indigenous community groups and other vulnerable groups during SA study were useful to understand views of APs on compensation and resettlement assistance measures, which were fully incorporated while preparing resettlement compensation and livelihood assistance plan. Such consultation, however, will be continued during the periods of RP implementation, which will further identify necessary assistance required by APs during rehabilitation. Continuing and meaningful involvement of affected people is necessary throughout the project—during preparation, implementation, and monitoring of SAP results and impacts. Project APs, families and communities, Indigenous Peoples, *Dalits* and other vulnerable groups, local government agencies and local bodies will be consulted for evaluation of the land and properties for negotiation and compensation.

After the preparation of draft SA and SAP reports, the study team has performed two district level consultations each at Phidim (district headquarter of Panchthar) and Phungling (district headquarter of Taplejung) involving the government offices, political parties, INGOs, NGOs and media personnel of Panchthar and Taplejung districts to incorporate regional concerns of project development from July 13 to July 15, 2011. One national level consultation at Kathmandu was conducted among the national level stakeholders of the project to complete the public consultation exercise on August 01, 2011. In addition, various project site visit and consultations have been carried out by World Bank, IFC, KEL and HCE teams after preparation and first public disclosures of SA and SAP reports. Local level consultations at different locations of project area have been conducted to receive feedbacks and concerns of local community on project implementation. Meetings with Road User Committees, Forest User Group, Concern committees, local political leaders and other eminent personalities of Project Area have also been conducted to receive the general concern of the community at large. On site observation and verification also have been carried out at the same time during subsequent field visits.

#### 7.4.1 Perception and Expectation towards KAHEP

Majority of the surveyed households (95.6 %) expressed their satisfaction over the project and only 2 households expressed their dissatisfaction over the project due to different reasons. Of these total households, 23.8 % anticipated environmental pollution and spreading communicable diseases like diarrhea, fever, tuberculosis, hepatitis and other sexually communicable disease like HIV/AIDS, Gonorrhoea and Syphilis in the project area. Besides, household survey and interview, in every interaction and consultation meeting participants expressed their views in line of acceptance and need of KAHEP. The SA team felt high level of public acceptance regarding the implementation of KAHEP.

**Table 7-1: Expectation of project benefits from Local residents**

| SN | Expectation of local population                  |   | Beneficiaries   |
|----|--|---|---|
| 1. | Community Services-Related                       | Provision of better and higher levels of services including health, education, roads and public transports, and drainage, income support for vulnerable group or needy households, agricultural support services including preferential planting materials and other inputs | Communities residing in the project area  |
| 2. | Household-Related                                | Skill training, interim family support, interest free loan for economic activities, provision of start-up livestock, access to public works or work for wages, access to electricity, access to drinking water and other services   | Communities in the impact areas. However, the level and eligibility of benefits should be assessed with the participation of affected people, government and Kabeli Energy. |
| 4. | Project Construction and Operation – Related     | Employment in construction, plant operation, and service sector of the project. Support on training for self-employment   | Communities of the project area. Priority for affected households   |
| 5. | Project Benefit-Related                          | Access to irrigation water, provision of electricity supply, domestic water supply from the project as appropriate.   | Communities of project area   |
| 6. | Adivasi Janajati and disadvantaged group related | Meaningful participation in project activities  | Affected Adivasi Janajati communities and disadvantaged groups  |

Source: Field Study 2010

#### 7.4.2 Perceptions and major Concerns of Adivasi Janajati towards the project

Most Adivasi janajati representatives of the project area viewed the project in a very positive way and welcomed it. They believe that the construction of KAHEP is the need of present time because of electricity crisis. There is a high expectation of rural electrification and employment from KAHEP. It has been supposed that the outcomes of the project will create employment opportunity and will boost local trades and tourism. However, they expressed that the impacts of the project on their cultural life, archaeological sites, identity, right to land and natural resources need to be understood and considered from the beginning of the project. Severe impacts on these areas will not be the precondition for the project construction. For this, they emphasized that the KAHEP should come up with a program to ensure Janajati participation in the project cycle. At the same time they also pointed out that they are entitled to be consulted before their land and natural resources are exploited. They viewed that the project should not be implemented in the way that may undermine Adivasi Janajati's rights to land, river and natural resources. Adivasi Janajatis explicitly expressed that the project should take care of cultural heritage sites when it is implemented.

The social survey team visited the project area to collect data required to prepare the Indigenous and Vulnerable Community Development Plan (IVCDP) between October to November 2010. A series of public consultation meetings (14 Focused Group Discussions) were organized at different locations in the project affected area to identify the various issues related to the KAHEP development and its socioeconomic consequences and corresponding mitigation measures. The affected people were invited through public notices posted at various locations of the affected VDCs or through formal letters or oral information mentioning venue and date. During the meetings, the affected people were informed about the future project activities; it's possible positive and negative



**Photo 18: Joint group discussion with Adivasi Janajati of the project affected VDCs**

impacts and about compensation, resettlement and rehabilitation processes and principles. A total of 3 (out of 14 FGDs) were exclusively conducted with *Adivasi Janajati*. The group discussions were conducted by a Social Anthropologist, *Adivasi Janajati* expert and field supervisors using a structured checklist as a discussion guide. As per the discussion, *Adivasi Janajati* were highly positive towards the KAHEP. The results of the discussions were properly recorded. The group discussions covered the following topics (Refer ANNEX D for more details). The detail of FGD carried out with *Adivasi Janajati* is given in Table 7-2. Some of the major concerns of *Adivasi Janajatis* were as follows:

- Project Benefit Sharing- provision of better and high level services and enhancement of access to civic amenities, economic activities and income generating programs, enhancement of cultural competence;
- Support on preservation and protection of Religion, Rituals, Customs and Indigenous Institutions, Self-identity- Cultural heritage, Archaeological resources, language and oral literature etc;
- Respect indigenous peoples' rights of Land and Natural Resources- access to natural resources;
- Participation with consent through their own organizations/institutions.

**Table 7-2: Details of Focused Group Discussion with *Adivasi Janajati***

| Date            | Location                  | Participants |           |           |
|-----------------|---------------------------|--------------|-----------|-----------|
|                 |                           | Male         | Female    | Total     |
| October 5, 2010 | Pinasi, Amarpur           | 10           | 07        | 17        |
| October 8, 2010 | Meacham, Thechambu        | 25           | 02        | 27        |
| October 9, 2010 | Bijuli Bhanjyang, Amarpur | 19           | 01        | 20        |
| <b>Total</b>    |                           | <b>54</b>    | <b>10</b> | <b>64</b> |

Source: Field Survey 2010

Three meetings with indigenous communities were organized at Pinasi of Amarpur VDC, on October 5, 2010, at Mewakhim of Thechambu VDC on October 8, 2010 and at Bijuli Bhanjyang of Amarpur VDC on October 9, 2010 respectively (Table 7-2). The main issues raised in these meetings were:

- Provision of fair compensation for lost assets and natural resources by the project, employment opportunities for the *Adivasi Janajati*, including women and *Dalits*, during

construction and operation phase of the project based on their qualification and skills with priority;

- Arrangement of skill development training for *Adivasi Janajati* including other vulnerable communities;
- Provision of basic infrastructures, such as drinking water, health services, schools, road, etc., in the project affected VDCs;
- Livelihood restoration programs for the affected households;
- Awareness rising and empowerment and skill oriented programs for *Adivasi Janajati* and scholarships in higher technical education for indigenous students, income-oriented programs based on indigenous knowledge and skills;
- Conservation related programs such as conservation programs of different culture and life style, promotion of festivals, festivities and celebration, conservation and protection of historical and religious/sacred sites, buildings and programs relating to recording of traditional special songs in native languages and production of audio-visual materials, which depict cultures and lifestyles of different *Adivasi Janajati*;
- Conservation of Mother Tongue such as programs for dictionary compilation, languages studies, textbook writing and documentation of most endangered languages and mother tongue education;
- Indigenous peoples' institutional development to strengthened indigenous communities' organizations;
- Support on healthcare supplies and facilities in the area; and
- Respect *Adivasi Janajati* rights while implementing the project in line with ILO Convention No.169.

## 7.5 Information disclosure and dissemination

The draft SA, and SAP reports have been disclosed in Butwal Power Company Limited (BPC) and KAHEP's website. Similarly, the final SA, SAP and EIA reports will be disclosed in BPC/KEL, World Bank's and IFC's websites and made available to wider audience and national and international levels of stakeholders. At local level, information dissemination and consultation will continue throughout SAP implementation. Information has been disseminated to APs at various stages. At local level, information dissemination and consultation will continue throughout SAP implementation. Information has been disseminated to APs at various stages. At the initial stage, the Project Relation Office (PRO) of KAHEP informed potential APs and the general public of the project through conducting mass meetings and land requirements through leaflets and publication in local media outlets and newspapers. In addition, PRO conducted consultations and disseminate information to all APs during these initial stages to create awareness of the project.

Project brochures having details of the project specific information were prepared in Nepali and local languages and distributed to the affected APs, local governments and interested local NGOs and CBOs at this stage and also will be disseminated after finalizing the derail project report. Summary of the major findings of draft SA and main provisions of the SAP were translated into Nepali and other local languages and were distributed to the participants and interested people before and during public hearing meetings. The brochures provided information on the project alignment, potential impacts and its gravity and steps taken by the project to minimize the impacts. These and similar efforts of information dissemination and disclosures will also be continued during project implementation and operation periods.

At field project level, the project has already established a Public Information Centre (PIC) at site. Three Public Relation Assistants (PRAs) are deployed by the Project in different locations of the Project area. The roles of PRAs are important for timely communication, information dissemination, identification and documentation of issues and grievances and resolving them on time at local level.

At the implementation stage, PRO combining with VDCs and Kabeli Concerned Committee will provide information to APs on R& R Policies and features of the RP. Basic information such as sub-project location, impact estimates, entitlements, and implementation schedule will be presented to APs and general public. KAHEP project relation office shall organize and will be responsible for the presentation and dissemination of information sought by APs on related issues. A field team from the project management unit should regularly provide information at the site level to the APs, local government and NGOs as and when required during planning and implementation of RP.

## **7.6 Local government endorsement**

Endorsement on the project by Local Governments is mandatory pre-requisite for project development as per the Environmental Protection Rule, 1997. A numbers of interaction, discussions, and consultation in relation to KAHEP have been and will be conducted in the various occasions with the heads and members of local government. The entire fours project affected local governments of Panchthar and Taplejung districts have provided endorsement letter for the project development.

## **CHAPTER 8**

# **DEVELOPMENT OF PROJECT RESETTLEMENT AND REHABILITATION POLICY**



## 8 DEVELOPMENT OF PROJECT RESETTLEMENT AND REHABILITATION POLICY

Land acquisition, compensation and resettlement are crucial issues concerning development projects in general and hydropower projects in particular, as the latter are usually justified in terms of the national economic benefits against the local socioeconomic and environmental costs in which they are located. This situation strongly demands for an appropriate resettlement policy and implementation mechanisms. The major objective with addressing resettlement issues is recognizing human beings as primary stakeholders and ultimate beneficiaries of the development projects. This Chapter provides a summary of national legislation and policies and best practice guidelines pertaining to land acquisition, resettlement and rehabilitation.

### 8.1 Review of relevant laws and policies of Nepal

#### 8.1.1 Resettlement policy in the context of Nepal

There is legislation covering land acquisition/appropriation and constitutional guarantees to the right to property and the right to compensation for property acquired. In 2006, the country's National Planning Commission (NPC) prepared a policy on land acquisition, compensation and resettlement called The National Policy on Land Acquisition, Compensation and Resettlement in Development Projects in Nepal. However, there is no legislation that specifically addresses involuntary resettlement. Nevertheless, resettlement has been addressed on a project specific basis as per the guidelines of World Bank since late 1980s and Asian Development Bank (ADB) since the beginning of 1995.

#### *The Interim Constitution of Nepal 2063 (2007)*

Article 19 of the Interim Constitution (2063) (2007), Right to Property, states that “(1) Every citizen shall, subject to the laws in force, have the right to acquire, own, sell and otherwise dispose of the property. (2) The State shall not, except in the public interest, requisition, acquire, or create any encumbrance on the property of any person. This clause shall not be applicable on property acquired through illegal means. (3) Compensation shall be provided for any property requisitioned, acquired or encumbered by the State in implementing scientific land reform program or in public interest in accordance with law. The compensation and basis thereof and operation procedure shall be as prescribed by the law.”

#### *National Policy on Land Acquisition, Compensation and Resettlement, 2006*

The National Policy on Land Acquisition, Compensation and Resettlement in Development Projects in Nepal was prepared in September 2006 by NPC with ADB assistance. The Policy was approved by a ministerial working committee and the NPC but its finalization is still awaiting approval from the concerned government agencies, cabinet and the parliament. The Policy has the following guiding principles:

- Appropriate and adequate compensation for the loss of assets or income is a fundamental right of all project affected persons. Physically displaced people must be relocated with basic amenities such as school, health posts and other facilities.
- All affected persons should be assisted to restore at least their pre-project income and livelihood sources.
- The absence of legal title to land should not be a bar for compensation, resettlement and rehabilitation assistance.
- Vulnerable groups such as *Janajati/Adivasi*, *Dalits*, landless, women, especially women-headed households, differently-abled, poverty groups and senior citizens are entitled to special benefit and assistance packages in addition to compensation and resettlement.

Drawing upon the provisions of the ADB's and World Bank's involuntary resettlement policies, and building on current resettlement practices in the country, the Policy establishes a range of compensation entitlements for people affected by development projects. Amongst others, this includes:

- Cash compensation at full market value (equivalent to replacement value) for all acquired land if the provision of replacement land is not feasible, with the stipulation that a person who becomes a marginal landholder as a result of land acquisition should be provided with replacement land of equivalent productivity or value;
- Cash compensation at replacement cost for the loss of all structures (residential, business and other structures), with no deduction for depreciation or for salvageable materials; or provision of a replacement house;
- Cash compensation for private trees based on the annual value of the produce;
- Compensation for the loss of income from rented buildings;
- Cash compensation for the loss of standing crops; and
- Compensation to registered tenants and sharecroppers, equivalent to 50% of the compensation for the concerned area of land and lost crops.

The Policy states that squatters and non-titled landholders are not entitled to compensation for the land they occupy. However, those who have earned their livelihoods from access to/use of the land for more than three years prior to the project's compensation cut-off date should, wherever possible, be provided with replacement land on a lease basis. They should also be assisted in their efforts to legalize their tenure in order to qualify for compensation.

Rehabilitation measures proposed by the Policy include:

- Proper resettlement planning, including developed relocation sites with amenities/easy access to amenities;
- For resettled farming communities, homesteads sites of sufficient size for storage of agricultural produce, keeping of livestock and for kitchen gardens;
- Employment on the project, where possible, to at least one member of each affected household, with half of the employment opportunities reserved for women; and
- Additional relocation and rehabilitation support measures, particularly to displaced households, severely affected households, women and vulnerable people.

### ***Hydropower Development Policy, 2001***

The Hydropower Development Policy 2001 emphasizes hydropower as an alternative energy source and hydropower development with due consideration to environmental conservation. It stresses on the need for the implementation of mitigation measures in project-affected areas and states that resettlement and rehabilitation works be conducted as required by the approved criteria of GoN. Section 6.1.2 of the Policy states that GoN may facilitate the acquisition of requisite houses and land by the project licensee in accordance with the prevailing laws of the country, however all expenses incurred in connection with acquisition must be borne by the licensee. The Policy also provides for lease of Government-owned land to the project licensee for the term of the license.

### ***Land Acquisition Act, 2034 (1977)***

The Land Acquisition Act (LAA), 2034 (1977), first promulgated in 1961 (Land Acquisition Act, 2018) is the core legal document to guide tasks related to land acquisition and resettlement activities in Nepal. There is provision in Clause 3 of the Act to acquire land for any public purpose, subject to the award of compensation. According to Clause 4, institutions seeking land acquisition may also request GoN to acquire the land under the regularity provisions subject to be compensated by such

institutions' resources. Clause 27 of the Act provides provisions for land acquisition through the mutual agreement with the plot owners, where the process of land acquisition as per the Act is not required. The Act grants the plot owner the right to choose between a mutual agreement process, and the formal process for land acquisition as per the Act. Where Clause 27 is enacted, and the plot owner not satisfied with the compensation agreement offered, Clause 18 (sub-clause 2) states that the owner can file a complaint with the Ministry of Home.

While acquiring land, GoN forms a Land Acquisition and Compensation Fixation Committee (LACFC) under the chairmanship of Chief District Officer (CDO) of the restrictive districts as per the Clause 13 of the Act. The other members to be included in the Committee comprise the Chief of Land Revenue Office (LRO), an Officer assigned by CDO, representative from DDC, Concerned Project Manager, and VDC representative. The Project Chief functions as the Member Secretary of the Committee. In addition, it has become the practice to include representatives from the Affected Persons (APs). This practice of fixing compensation is known as Community Consensus Valuation (CCV). LACFC determines the amount of compensation considering the following factors: current price of land value, value of standing crop, houses, walls, sheds or other structures, loss incurred as a result of shifting residence or place of business, and relevant acts and periodic guidelines of GoN. According to Clause 6, if the land has to be acquired for institutions other than the local governance bodies and institutions fully owned by the government, the Committee has to consider the following in fixing the compensation amount: (i) Price of land prevailing at the time of notification of land acquisition; (ii) Price of standing crops and structures; and (iii) Loss incurred by the AP by being compelled to shift his or her residence or place of business in consequence of the acquisition of land.

The Clause 9 sub-section 3 of the Act mentions that the duration of compensation days will be determined by LACFC. Clause 37 of the Act illustrates that the Committee may extend the period of additional three months, if compensation are not collected by those affected. After termination of extended three months period, the amount will be deposited at the Government account.

The compensation to be provided for land acquisition should generally be in cash as per current market value. However, there is also a provision under Clause 14 to compensate land for-land provided government land is available in the area. The Act also envisages the possibility of two separate rates of compensation, distinguishing between families who lose their total holding land and those who lose only some part of their landholdings. As stipulated in the Clause 10 there is provision for the affected households to take the crops, trees and plants from land and salvageable from the structures. Clause 39 indicates options to allow the affected households to take all salvageable assets without deduction of any costs from the affected households. Legal tenants of the land are entitled for 25% of compensation amount of the acquired land. If the tenant has built house also with the consent of the landowner, then he shall be entitled for full compensation of such house (Clause 20). Unpaid government taxes, if any, could be deducted from the compensation amount (Clause 21)

Any grievances and objections will be referred to the Grievances Redress Committee (GRC) as per Clause 11 of the Land Acquisition Act, 2034 (1977). The Act assigns the CDO as the sole responsibility to chair land acquisition activities and to address the grievances related to the RP implementation activities.

### **Land Act, 1964**

Another key legislation in Nepal related to land acquisition is the Land Reform Act (LRA) 2021 (1964). This Act establishes the tiller's right on the land, which he is tilling. The LRA additionally specifies the compensation entitlements of registered tenants on land sold by the owner or acquired for the development purposes. The Act Amendment (2001) established a rule that when the State acquires land under tenancy, the tenant and the landlord will each be entitled to 50 % of the total compensation amount. Tenants are verified through a record of tenancy at the Land Revenue Office.

### **Guthi Corporation Act, 1976**

Land acquisition must also comply with the provisions of the *Guthi Corporation Act, 2033 (1976)*. Section 42 of this Act states that *Guthi* (religious trust land) acquired for a development must be replaced with other land, rather than compensated in cash.

**Forest Act, 1993**

The Forest Act, 1993 recognizes the importance of forests in maintaining a healthy environment. Section 49 of the Act prohibits reclaiming lands, setting fires, grazing, removing or damaging forest products, felling trees or plants, wildlife hunting and extracting boulders, sand and soil from the National forest without prior approval. Clause 68 (1) of the Forest Act 2049 (1993) states that the government may permit the use of any part of government-managed forest, leasehold forest or community forest, if there is no alternative for the implementation of a plan or project of national priority without significantly affecting the environment. According to the clause 68 (2), if any loss to persons or community is involved while permitting use of such land, it is required to compensate the loss.

**Water Resources Act, 1993**

The main objective of the Water Resources Act is to make legal arrangements for determining beneficial uses of water resources, preventing social, environmental and other hazardous effects thereof and also for keeping water resources free from pollution.

- Section 16 has a provision for land acquisition from government or public for the construction of a water resource projects. GoN will provide appropriate compensation as described under Land Acquisition Act, 2034(1977).
- Section 18, 19 and 20 of this Act deals with water quality standards, water pollution and adverse effect on the environment. GoN may fix and maintain quality standards for water resources to establish the tolerance limits for the discharge of pollutants to minimize the adverse effect on the environment.
- Section 20 states that any construction activities, which utilize water resources, must minimize the impacts of soil erosion, landslide or other adverse environmental impacts.
- Section 22 of this Act has a provision of penalties to the offenders who violates the rules and regulations.

**Electricity Act 2049 (1992)**

Section 33 of the Electricity Act 2049 (1992) states that if private land has to be used in order to utilize for water resource development including electricity generation, transmission and distribution, the licensed person can request the government; and the government could acquire the land through standard procedures (Land Acquisition Act, 1977) as it does for organized institutions (Usually developer appointed Project Manager of the PMO). The Act further affirms that GON can restrict land use in and around the electricity infrastructure such as generation, transmission and distribution being developed by GON or a licensed person. However, GON or licensed person will have to compensate the concerned parties for the losses incurred due to restriction of the land use through the standard procedures (Land Acquisition Act, 1977).

**Electricity Development and Management Act 2062(2005)**

Section 19 of this Act states that the developer could apply to GON for land and property acquisition required for the hydropower development and the GON will arrange for such land and property acquisition after examining the application of the developer in case of private land and in case of the government land and property, the property will be made available on lease agreement. However, the Section 40 of the Act mentions that the developer should compensate the affected parties as per the prevailing laws.

The Section 41 of the Act spells out the provisions for rehabilitation and resettlement for the affected people. It states that the developer should execute the rehabilitation and resettlement of the affected parties as an integrated program. The developer while executing the rehabilitation and resettlement programs should ensure the livelihood of the affected people to be equivalent as or higher than the pre-project conditions. The basis of the rehabilitation and resettlement procedures to be applied by the developer should be as per the prevailing laws. The developer, during

construction and development of hydropower projects should ensure that the local people get maximum benefit of employment or other subsidiary opportunities of development.

### **Electricity Rule 2050 (1993)**

The Rules 66 states that GoN has full rights to prohibit use of land or places of generation, transmission or distribution infrastructures or, other structures, for other specific purposes in and around them through publication of public notice in GoN gazette from time to time. It further states that no building construction or tree plantation is allowed within the specified limit in and around the electricity transmission and distribution lines.

The Rule 87 states that the land and property owners of acquired or restricted property shall be paid full compensation amount as determined by the compensation fixation committee as per Rule 88.

As per the Rule 88, a compensation fixation committee under the chairmanship of GoN-appointed person, comprising of concerned person or the representative of the project (usually Project Manager of PMO), an expert appointed by GoN in the field of electricity, property owner or his/her representative, representative of the Land Revenue Office, representative of the concerned Village Development Committee/Municipality shall decide the compensation of the affected land and property.

### **Water Resources Regulation, 1993**

Rule 17 obliges the proponents to analyze environmental impacts of the proposed action and include impact mitigation measures and environment protection measures including arrangements for the settlement of displaced people. The report should be a part of the application for the water resources utilization permits.

Rule 28 states that in a process of resolving any conflict, the Water Resources Utilization Investigation Committee should consider environmental impacts likely to occur from the proposal. It should also collect site-specific information on likely environmental impacts of the concerned project.

### **Local Self Governance Regulation, 2000**

The Local Self Governance Regulation 2000 empowers local bodies to coordinate and implement development programs and to rationally utilize local natural resources. Article 7 (68) of the Regulation empowers VDCs to monitor and supervise development works implemented in the VDC. Under Schedule 26 (4) of the Regulation, half of the royalty paid to the GoN by a hydropower project will be used for local development: 12% of the total royalty will be provided to the district where the powerhouse is located (Panchthar District), with the remaining 38% to be distributed to the other districts in the affected development region.

The above provision on the prevailing Acts and Regulations in Nepal indicate a progressive development of legal framework related to involuntary resettlement of the people affected by the development projects. However, there still exists some confusion and overlapping of the provisions in various Acts and Regulations in terms of the involuntary resettlement affected people.

First and foremost confusion, relates to which piece of Act and Rule is applicable to the hydropower development projects: the Land Acquisition Act or Water Resource Act / Water Resource Regulation or Electricity Act / Electricity Regulation or Electricity Development and Management Act. All of these Acts and Regulation are self standing with no inter-linkages in between whatsoever. However, all of the prevailing Acts and Regulations recognize that the affected people are eligible for compensation of the affected land and property, the mode of compensation is not exclusively defined. In practice, it refers to cash compensation. Further, the property evaluation aspect is rested upon the Compensation Fixation Committee without any guidelines. It is not clear whether the evaluation criteria will be based on the current market price or on the prevailing rates of Land Revenue Office. In Nepal, Land Revenue Office rates are far lower than the current market price. Compensation payments as per Water Resource Act will be made only after deduction of depreciation, which is against the best practices adopted by the guidelines of the many international donor agencies such as ADB and World Bank.

Even the LAA 1977 has no specific provision for granting compensation to project affected people who do not have legal ownership of land. Squatters do not have automatic right to productive land compensation. Similarly, encroachers with less than three years residence do not have rights to replacement. Furthermore, LAA 1977 does not have provisions to (i) address the difficulties caused by delays in compensation to Project Affected Families (PAF), (ii) ensure that vulnerable groups, ethnic minorities and other people affected by the project are capable of making proper use of compensation money to resettle to a living standard not less than that existed prior to the project, and (iii) provide practical provisions of land for land option despite it being mentioned in the LAA 1977. Similarly, the Act does not specify procedures for the acquisition of land for private sector projects. KAHEP being a private company, KAHEP can acquire all private land and other household assets through mutual negotiation. Negotiations will take place within the provisions of the Clause 27 of the LAA 1977 and as per principles contained in the R & R Policy.

Thus, except for the Electricity Development and Management Act, none of the previous Acts and Regulations has made specific provisions of resettlement and rehabilitation. Even this latest Act, recognize only the legal title holders of the property as the eligible parties for compensation, resettlement and rehabilitation. For traditional users of the property, community properties, and the users of the properties for generations without legal holdings, there is no provisions of compensation, resettlement and rehabilitation. Apart from this, none of the Acts and Regulations has come up with an entitlement matrix to regulate the compensation, resettlement and rehabilitation of the project displaced people.

## 8.2 International policy guidelines and conventions

### 8.2.1 World Bank Policy Guidelines

The World Bank Policy on involuntary land acquisition recognizes lost assets or income as fundamental right of all project affected persons and that physically displaced people must be relocated with basic amenities like school, health posts etc. Likewise, all affected persons, entrepreneur, or institution should be assisted to restore at least their pre- project income and livelihood sources. The following documents apply to involuntary resettlement for projects under World Bank funding:

- Operational Policies OP 4.12 and Bank Procedure BP 4.12 on involuntary resettlement 2001.
- Operational Policies OP 4.10 and Bank Procedure BP 4.10 on Indigenous People July 2005.

*Following are the guiding principles of World Bank's policy on involuntary resettlement.*

- a) Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.
- b) When resettlement is unavoidable, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable persons displaced by project to share in project benefits.
- c) Displaced persons should be meaningfully consulted and should be given opportunities to participate in planning and implementing resettlement programs.
- d) Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living. In the absence of possibilities to improve their standards of living, it should in the least be restored to levels that existed prior to the project.
- e) The borrower prepares a resettlement plan if more than 200 families are affected and an abbreviated resettlement plan is required if less than 200 families are affected.
- f) Absence of legal title to land should not be a bar for compensation, resettlement, and rehabilitation assistance. Vulnerable groups such as indigenous people, women-headed households, and senior citizens should be entitled to special benefit package in addition to compensation and resettlement.

- g) This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by
- A. the involuntary taking of land resulting in
    - i. relocation or loss of shelter;
    - ii. loss of assets or access to assets; or
    - iii. loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or
  - B. The involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.

*Following are the guiding principles of World Bank as per its policies on Indigenous people.*

- This policy states that any development process under the Bank finance should fully respect the dignity, human rights, economies, and cultures of Indigenous Peoples;
- For all projects that are requested for Bank financing and affect Indigenous Peoples, the borrower should be engaged in a process of free, prior, and informed consultation;
- The Bank provides project financing only where free, prior, and informed consultation results in broad community support to the project by the affected Indigenous Peoples;
- Such Bank-financed projects should include measures to (a) avoid potentially adverse effects on the Indigenous Peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects; and
- Bank-financed projects should also be designed to ensure that the Indigenous Peoples receive social and economic benefits that are culturally appropriate and gender and intergenerationally inclusive.

*Special considerations for Indigenous Peoples*

Indigenous Peoples are closely tied to land, forests, water, wildlife, and other natural resources, and therefore special considerations apply if the project affects such ties. In this situation, when carrying out the SA and preparing the SAP, the borrower pays particular attention to:

- a) the customary rights of the Indigenous Peoples, both individual and collective, pertaining to lands or territories that they traditionally owned, or customarily used or occupied, and where access to natural resources is vital to the sustainability of their cultures and livelihoods;
- b) the need to protect such lands and resources against illegal intrusion or encroachment;
- c) the cultural and spiritual values that the Indigenous Peoples attribute to such lands and resources; and
- d) Indigenous Peoples' natural resources management practices and the long-term sustainability of such practices.

## 8.2.2 International Labor Organization (ILO) Convention (169), 1989 and UNDRIP

ILO Convention No. 169 was adopted in 1989 by the General Conference of the International Labor Organization (ILO) at its seventy-sixth session. It was ratified by the Legislative Parliament of Nepal in 2007. A major component of ILO 169 is consultation with indigenous peoples and involving them in decision making at all levels (Article 6).<sup>36</sup> Most pertinent to hydropower projects is Article 16, which prohibits the relocation of indigenous peoples, and, where absolutely necessary, it “shall take place only with their free and informed consent. Where their consent cannot be obtained, such relocation shall take place only following appropriate procedures established by national laws and regulations, including public inquiries where appropriate, which provide the opportunity for effective representation of the peoples concerned.”<sup>37</sup> Article 16 further states that indigenous peoples have the right to return to their traditional lands once the reason for their relocation no longer exists and where that is not possible, land of similar quality shall be provided (except if they opt for monetary compensation).

Among other relevant provisions of the convention, Article 7 states: “The peoples concerned shall have the right to decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well-being and the lands they occupy or otherwise use, and to exercise control, to the extent possible, over their own economic, social and cultural development.” Similarly, Article 15: “The rights of the people concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the right of these peoples to participate in the use, management and conservation of these resources.”<sup>38</sup>

UNDRIP also recognizes the right of indigenous people over the “lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired” as well as the “right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired” (Article 26).

## 8.3 Comparison of GoN and World Bank Policies

The review of legal framework and guidelines presented above reveals that despite some common provisions between the Government legal frameworks and World Bank guidelines related to involuntary resettlement and indigenous community, there are certain key differences between World Bank guidelines and the Government’s legal frameworks. Table 8-1 summaries major gaps between World Bank guidelines and the Government’s legal frameworks.

**Table 8-1: Comparison between World Bank Policy and the Government Legal Framework**

| Category                        | World Bank Policies   | GON Legal Framework   | Recommendations to Bridge Gaps |
|---------------------------------|---|---|--------------------------------|
| <b>Involuntary Resettlement</b> | Entitled to assistance in livelihood restoration regardless of legal ownership. | Legal ownership is required, however, registered tenants with the Land Revenue Office also acknowledged.                              |                                |
|                                 | Compensation to all affected structures including encroachers                   | Encroachers are not entitled to compensation. However, vulnerable families are compensated to build houses of the previous standards. |                                |

<sup>36</sup> Article 6 also calls upon signatories to carry out consultations “in good faith and in a form appropriate to the circumstances, with the objective of achieving agreement or consent to the proposed measures’.

<sup>37</sup> ILO, “C169 Indigenous and Tribal Peoples Convention, 1989”, [www.ilo.org](http://www.ilo.org)

<sup>38</sup> ILO, “C169 Indigenous and Tribal Peoples Convention, 1989”, [www.ilo.org](http://www.ilo.org)



|                             |   |   |   |
|-----------------------------|---|---|---|
|                             | Compensation for affected assets at full replacement costs  | (i) Compensation Fixation Committee (CFC) under CDO will establish the Compensation rates.<br>or (ii) Clause 27 of the LAA 1977 provide provisions for land acquisition through mutual agreement with the plot owners.  | SAP will be prepared and implemented following all applicable GoN legislators and World Bank policy guidelines.   |
|                             | Principle of compensation holds that living standards and livelihoods should be enhanced, or at least restored in real terms relative to pre-project levels; and improved for the displaced poor and other vulnerable groups.   | Principle of compensation for lost assets but no undertaking to improve living standards or livelihoods. However, vulnerable families will be compensated to meet at least the previous level of livelihood.  |   |
| <b>Indigenous Community</b> | Ensures free, prior, and informed consultation with the affected indigenous people to obtain broad community support to the project. SA will be carried out to identify potential effect and prepare plan to ensure that indigenous peoples receive social and economic benefits that are culturally appropriate. | NFDIN Act 2002, National Human Rights Action Plan 2005, Environmental Act 1997 and Forest Act 1993 have emphasized protection and promotion of indigenous people's knowledge and cultural heritage. In 1999, Local Self-Governance Act was enacted to give more power to the local political bodies, including authority to promote, preserve and protect the IP's language, religion, culture and their welfare.<br><br>The Three Years Interim Plan Paper (2007-2010) includes following policies for inclusive development of <i>Adivasi/Janajati</i> and other disadvantaged groups: (i) creating an environment for social inclusion; (ii) participation of disadvantaged groups in policy and decision making; (iii) developing special programs for disadvantaged groups; (iv) positive discrimination or reservation in education, employment, etc.; (v) protection of their culture, language and knowledge; (vi) proportional representation in development; and (vii) making the country's entire economic framework socially inclusive. | Project affected Indigenous People individual and families including already existing vulnerable communities will be addressed by developing IVCDP under SAP.<br><br>Traditional rights to land and other natural resources, communal property and specific characteristics of ethnic groups in relation to land and other natural resources and subsequent losses resulting from the project will be assessed and compensated accordingly. |

#### 8.4 IFC's Performance Standards on Social and Environmental Sustainability

IFC applies the Performance Standards to manage social and environmental risks and impacts and to enhance development opportunities in its private sector financing in its member countries eligible for financing. The IFC Performance Standard 5 on Land Acquisition and Involuntary Resettlement apply to involuntary resettlement for projects. As per the Performance Standard 5, involuntary resettlement should be avoided or at least minimized. However, where it is unavoidable, appropriate measures to mitigate adverse impacts on displaced persons and host communities should be carefully planned and implemented.

Other project related IFC standards that are reviewed for project development are summarized below:

*Performance Standard 1: Social and Environmental Assessment and Management System*

Performance Standard 1 underscores the importance of managing social and environmental performance throughout the life of a project (any business activity that is subject to assessment and management).

*Performance Standard 7: Indigenous Peoples*

Performance Standard 7 recognizes that Indigenous Peoples, as social groups with identities that are distinct from dominant groups in national societies, are often among the most marginalized and vulnerable segments of the population. Their economic, social and legal status often limits their capacity to defend their interests in, and rights to, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development. They are particularly vulnerable if their lands and resources are transformed, encroached upon by outsiders, or significantly degraded. Their languages, cultures, religions, spiritual beliefs, and institutions may also be under threat. These characteristics expose Indigenous Peoples to different types of risks and severity of impacts, including loss of identity, culture, and natural resource-based livelihoods, as well as exposure to impoverishment and disease.

Private sector projects may create opportunities for Indigenous Peoples to participate in, and benefit from project-related activities that may help them fulfill their aspiration for economic and social development. In addition, this Performance Standard recognizes that Indigenous Peoples may play a role in sustainable development by promoting and managing activities and enterprises as partners in development.

Performance Standard 7 also needs to demonstrate Informed Consultation and Participation among the project affected population and Broad Community Support (BCS) for the project to consider approving IFC's investment in the project. PS7 Guidance Note (para GN27) is clear on when to "facilitate a process of FPIC", i.e., when the project may result in the following adverse impacts:

- Impacts on lands and natural resources subject to traditional ownership or under customary use;
- Relocation of Indigenous Peoples from lands and natural resources subject to traditional ownership or under customary use;
- Significant impacts on critical cultural heritage that is essential to the identity and/or cultural ceremonial, or spiritual aspects of Indigenous Peoples lives; or
- Use of cultural heritage, including knowledge, innovations or practices of Indigenous Peoples for commercial purposes.

*Performance Standard 8: Cultural Heritage*

Performance Standard 8 recognizes the importance of cultural heritage for current and future generations. Consistent with the Convention Concerning the Protection of the World Cultural and Natural Heritage, this Performance Standard aims to protect irreplaceable cultural heritage and to guide clients on protecting cultural heritage in the course of their business operations. In addition, the requirements of this Performance Standard on a project's use of cultural heritage are based in part on standards set by the Convention on Biological Diversity.

## **8.5 Compensation and resettlement practices on Hydroelectric Projects in Nepal**

### **8.5.1 Kulekhani Hydroelectric Project**

It is located in central Nepal and completed in 1981, acquired 204 ha of land and affected approximately 500 households. Compensation was paid according to rates determined by a Compensation Determination Committee (CDC) for land, standing crops, houses, community facilities and certain other structures. Fruit trees, fodder trees and other communal resources such as grazing land were not included in the compensation package.

### 8.5.2 Marsyangdi Hydroelectric Project

Land acquisition and compensation on the Marsyangdi Hydroelectric Project (1985-1990) was undertaken in accordance with the Land Acquisition Act. The project acquired approximately 84 ha of land. A total of 389 households were affected, including 29 resettled households. A CDC was established and compensation (in cash only) was undertaken in accordance with the Act. The compensation rates established by the CDC were adjusted after complaints had been lodged with the Zonal Commissioner (ZC). The ZC also made provision for the compensation of fruit trees and other types of property not previously considered for compensation (IUCN 1995).

Marsyangdi project also included an agreement (with the World Bank) for the implementation of a formal resettlement program. However, the program was never developed, apparently because the project management assumed most of the affected households would remain in the same area after the acquisition of their land (hence cash compensation only). The evaluation of acquisition and compensation results in 1988 showed that “many individuals were left with uneconomic holdings and ... the special assistance recommended [disturbance allowances, priority for employment, agricultural extension ... and training] was never provided” (Molnar & Ragsdale 1991).

### 8.5.3 Khimti Khola Hydroelectric Project

It is located in the Ramechhap and Dolakha Districts of the Central Development Region. The main scheme works required some 12 ha of agricultural land and the relocation of 11 households. Social impact mitigation measures included:

- compensation for permanently acquired land according to prevailing market rates or by the provision of alternative land;
- temporarily acquired land to be purchased, rehabilitated after use and sold back within the local community or returned as forest land to GoN;
- compensation for houses and other buildings according to an agreed value (private transaction/negotiated agreement), or through the provision of equivalent housing in the project area; GoN acquisition procedures to be invoked only in cases of failure to reach an agreement;
- where possible, affected people to be given priority for jobs on the project;
- assistance (to a local company or NGO) with a rural electrification program, through the donation of a mini-hydro plant (at the end of the construction period) and funds;
- where possible, to improve village water supplies in conjunction with the project works;
- a non-formal education program, focusing on topics such as family planning and health, nutrition, sanitation, money management and savings and electricity use;
- the employment of a Forest Ranger to assist local communities with the preparation and implementation of forest management plans; and
- the employment of a resident Public Relations Officer to manage local consultation.

### 8.5.4 Kali Gandaki ‘A’ Hydroelectric Project

It followed the ADB’s involuntary resettlement guidelines. Approximately 97 ha of land was acquired permanently and 31 ha temporarily. Altogether 284 households were affected by the project, with 50 requiring resettlement.

An Acquisition, Compensation and Rehabilitation Plan (ACRP) was developed and implemented (within the parameters of the Land Acquisition Act) to fairly compensate people for the loss of land and income. Social impact mitigation measures recommended for implementation included:

- a choice between replacement land or cash compensation;

- provision of job training to members of PAFs (with special emphasis on women), the identification of wage opportunities for women in the project and the preferential employment of local labour;
- establishment of a micro-enterprise revolving fund to provide capital to affected residents to implement entrepreneurial activities;
- assistance to the Bote community (an ethnic group) with the development of irrigation systems so as to reduce the economic disparity between higher and lower castes and ethnic groups
- introduction of agriculture/livestock improvement programs and the provision of improvements to local farmers at cost
- establishment of a small nature reserve to offset the loss of forest resources;
- development of aquaculture enterprises; and
- assistance to VDCs in planning the economic growth associated with the project.

## 8.6 Resettlement and rehabilitation policy framework for KAHEP

### 8.6.1 KAHEP resettlement policy

The resettlement principles adopted for KAHEP recognize the Land Acquisition Act, 2034 (1977), and ILO Convention 169, and the requirements of the World Bank policy on Involuntary Resettlement, Indigenous People and other relevant acts, policies and guidelines related to hydropower development. KAHEP is committed to ensure that all compensation and resettlement activities associated with the project as a whole are undertaken in compliance with relevant local legislation. KAHEP also acknowledges the need to incorporate best practice involuntary resettlement guidelines, as embodied in the policies of the World Bank in its resettlement program to address any gaps/limitations in the local legislation and ensure the proper restoration of affected livelihoods. For this purpose, a set of resettlement principles have been developed to guide project preparation and implementation. The Resettlement Policy (RP) has been prepared based on the general findings of the census survey of APs, FGDs with local stakeholders, field visits, and meetings with various affected persons residing in the different locations in the project area. The details of the principles are presented in Table 8-2.

**Table 8-2: Principles and corresponding guidelines to execute resettlement policy**

| Principles  | Guidelines  |
|---|---|
| <b>Principle 1:</b><br>Human displacement and resettlement will be minimized wherever possible. | Land acquisition and involuntary resettlement will be avoided where feasible or minimized to the extent possible through the incorporation of social considerations into project design options.  |
| <b>Principle 2:</b><br>All project impacts will be identified and all losses properly recorded. | <ul style="list-style-type: none"> <li>• An inventory of project affected assets and resources will be undertaken in full consultation with the concerned households, communities and authorities.</li> <li>• A database of all project Affected Persons ( APs) will be established which will include for each household: <ul style="list-style-type: none"> <li>○ an inventory of landholdings and non-retrievable improvements (buildings and structures) to determine fair and reasonable levels of compensation and mitigation;</li> <li>○ census information, detailing household composition and demography; and</li> <li>○ current livelihood earning activities.</li> </ul> </li> <li>• The asset inventories will be used to determine entitlements and to assist with the identification of severely project affected persons, while the census information will be used to monitor household</li> </ul> |

|  |  |
|--|--|
|  | reestablishment. All information will be entered into the database to facilitate planning, implementation, and monitoring and evaluation.  |
| <b>Principle 3:</b><br>Land purchase, resettlement planning, budgeting and implementation will be an integral part of the project. | Land purchase will be integral components of the project. The project will adopt the following approach: <ul style="list-style-type: none"> <li>• Land purchase and resettlement costs will be built into the overall project budget as an upfront cost;</li> <li>• An institutional and organizational framework will be established as an integral part of the project's management structure. These mechanisms and arrangements will ensure that compensations are carried out promptly and effectively; and land purchase schedules will be integrated with the project's development schedule.</li> <li>• Areas required by the project will only be occupied after purchase activities have been successfully completed.</li> </ul>  |
| <b>Principle 4:</b><br>Ongoing and meaningful public consultation will occur.  | <ul style="list-style-type: none"> <li>• Persons whose livelihoods and standards of living will be adversely affected by project activities -whether through loss of assets or through being deprived of resources-have the right: <ul style="list-style-type: none"> <li>○ to be informed in time of project proposals and implementation schedules;</li> <li>○ to be consulted on measures to restore their livelihoods, and to participate in the final selection and design of such measures; and</li> <li>○ to be informed of displacement and land purchase dates sufficiently in advance of actual implementation.</li> </ul> </li> </ul>   |
| <b>Principle 5:</b><br>Affected persons will be assisted to restore, and ultimately to improve, their livelihoods.                 | <ul style="list-style-type: none"> <li>▪ The pre-project livelihoods of affected persons will be restored and ultimately improved through the provision of: <ul style="list-style-type: none"> <li>○ Compensation at replacement rates for all losses and damaged assets.</li> <li>○ Fair, equitable and prompt compensation for the loss of assets attributable to the project; the absence of legal titles to lands, property, and facilities will not be a bar to compensation provided that their eligibility for such assistance has been confirmed through the community participation structure.</li> <li>○ Livelihood restoration and community development initiatives.</li> </ul> </li> </ul>  |
| <b>Principle 6:</b><br>Indigenous peoples and vulnerable groups will be Specifically considered.                                   | <ul style="list-style-type: none"> <li>▪ Particular attention will be paid to adverse impacts on vulnerable households/ social categories such as the elderly and physically disabled, female-headed households, <i>Dalits</i> and indigenous community groups who may be vulnerable to changes brought about by project activities or excluded from its benefits. Members of these groups are often not able to make their voice heard effectively, and account will be taken of this in consultation and planning processes, as well as in the establishment of grievance procedures.</li> <li>▪ Traditional rights to land and other natural resources, communal property and specific characteristics of ethnic groups in relation to land and other natural resources and subsequent losses resulting from the project will be assessed and compensated accordingly.</li> </ul> |
| <b>Principle 7:</b><br>Grievance and monitoring procedures will be in place.   | <ul style="list-style-type: none"> <li>▪ Accessible grievance procedures will be implemented, with particular concern for the situation of vulnerable groups.</li> <li>▪ Monitoring procedures will be implemented to assess the effectiveness of land purchase, compensation, resettlement and livelihood restoration. Monitoring will be an ongoing activity, employing mechanisms such as internal monitoring, quantitative and qualitative socio-economic monitoring and external evaluation.</li> </ul>   |

### **8.6.2 Compensation policy for KAHEP**

The compensation policies presented in this section are part of the overall policy on resettlement/relocation as far as applicable. The Land Acquisition Act 1977, Water Resource Act (1992) and Water Resource Regulation (1993) will be the key legal procedures that shall be followed for the compensation determination and payments.

#### **Types of loss and corresponding modes of payment of compensation**

##### **1. The permanent loss of land**

- a. All the lands of APs that will be acquired permanently by the project shall be paid as per the negotiation between project and the landowners. Such land parcel registration shall be transferred to the developer.
- b. If the remaining land parcel after permanent land loss is too small (i.e. less than 64 square meter) and the APs does not own adjoining plot and is willing to dispose the land, the entire plot shall be acquired at the replacement cost.

##### **2. Restriction on land use**

- a. All the lands of APs that will be restricted by the project to develop structures around the shoreline of the reservoir area shall be paid at a mutually agreed rate. Such land parcel registration will remain with APs.
- b. All the lands of APs that will be restricted for development of structures around the project facility sites will be limited up to the period of project construction only. No payments shall be made for such restriction for structure development.

##### **3) The loss of crop**

Crops that will be damaged during project construction shall be compensated to APs based on the current fair market value determined by District Forest Office, District Agriculture Office or other government agencies to the maximum of one year production.

##### **4) The loss of structures including utility facilities**

Any structures including utility facilities shall be compensated based on their replacement cost which is the cost of materials and labor in the locality or as evaluated by the district norms at the time of relocation if the relocation is required. No depreciation shall be applied. Additionally, the associated land plots of the houses as estimated in this study shall be provided. The structure owners shall be responsible for dismantling the affected structure and shall own salvageable materials.

##### **5) The loss of community facilities and resources**

- a. The project affected community facilities (such as schools, temples, health posts, water points, irrigation canals, footbridges, graves and *ghats* (a *ghat* is a Hindu cremation place which is a small and open platform-like structure at river bank) shall be compensated at replacement cost or restored to their previous condition or replaced in areas identified in consultation with affected communities and the relevant authorities.
- b. The standing stock of forest products in the CFs, LF shall be the property of the respective User Groups and will be compensated on the basis of mutual agreement in accordance with the prevailing laws.
- c. The loss of resources such as CFs, LF and religious forests, grass land or shrub land shall be compensated following the government policy decision of 1:25 i.e. plantation of 25 seedlings for each felled tree in a place recommended by affected CF/LF. In addition, the project shall protect the plantation area for five years before handing it over to the affected CF/LF.

**6) The loss of government property**

- a. Government infrastructure and facilities including utilities affected by the project shall be repaired or replaced or compensated at replacement costs in consultation with the relevant departmental authorities.
- b. Government forest areas shall be acquired in consultation with the Department of Forestry and any trees therein shall be the property of Department of Forest as per the prevailing laws.
- c. The loss of resources in the government forest shall be compensated following the government policy decision of 1:25 i.e. plantation of 25 seedlings for each felled tree in a place recommended by the District Forest Office (DFO). In addition, the project shall protect the plantation area for five years before handing it over to the government.

**7) The loss of livelihoods**

- a. Compensation to the acquired land and assets for directly/physically affected households shall provide a basis for the reestablishment of livelihood. However, in some cases, these measures alone may not be sufficient to restore livelihoods; additional initiatives will therefore be required to improve and diversify livelihood earning opportunities.
- b. Similarly, compensatory and mitigationary program shall be launched to the Project Affected Peoples (PAPs) who will not be affected physically but face their living adversely affected as they will lose the access to traditional means of supplementary livelihood, fishing, livestock grazing, fuel wood gathering, and collection of forest product due to the project implementation.

## **CHAPTER 9**

# **PROPOSAL FOR MITIGATION AND DEVELOPMENT MEASURES**



## **9 PROPOSAL FOR MITIGATION AND DEVELOPMENT MEASURES**

The proposed mitigation measures for the anticipated impacts from the development of the project are presented in Table 9-1. The development measures as illustrated in Table 9-2 will be adopted for the vulnerable groups.

**Table 9-1: Mitigation measures**

| SN | Impacts  | Mitigation Measures  |
|----|--|--|
| 1  | Land requirement <ul style="list-style-type: none"> <li>- Possible loss of access to NTFPs</li> <li>- Impact on agricultural land</li> <li>- Loss of agricultural production</li> </ul>  | <ul style="list-style-type: none"> <li>• Landowners of the permanently acquired lands of project components and project facility sites will be compensated in cash as per the negotiation between the project and the land owners.</li> <li>• The project will provide counseling services for the families to which compensation money is distributed. Counseling will provide information on the sustainable utilization of the compensation money. The persons selected by the project management will provide social and economic counseling services to the project affected families to cope with the socio-economic changes brought by the cash compensation. Counseling will be given with reference to experiences in similar hydropower projects.</li> <li>• Trainings on scientific agriculture technologies and an improved seed program will be introduced.</li> <li>• Local residents of the project area/s will be motivated for cash crop plantation. Such trainings will somehow compensate for the loss in agriculture production and will help boost economic conditions of the locals.</li> <li>• Restoration of forest area giving assistance to expanding management capability at similar locations</li> <li>• Support livelihood restoration of affected households through employment, skill training and capacity development</li> <li>• Any loss of private forest resources (private trees) will be compensated at prevailing market rates with owner's approval. The project may purchase forest products that are cut if the respective owners are willing to do so.</li> <li>• Project will compensate the forest loss based on the government policy decision of 1:25 i. e. plantation of 25 seedlings for each tree felled for the project.</li> <li>• Compensation to Leasehold Forest for leasing the area</li> </ul> |
| 2  | Impact on fishing  | <ul style="list-style-type: none"> <li>• Provision of Fish ladder in the project design,</li> <li>• Release of 10 % of the mean monthly flow of the driest month throughout the year,</li> <li>• Construction and operation of a cold water fish hatchery</li> <li>• Livelihood support through employment, skill training and capacity development, and</li> <li>• Training programs to enhance employment on construction works and preferential employment to the extent possible</li> <li>• Continuous monitoring during operation and if necessary, build spawning ponds at headworks</li> <li>• Priority consideration in reservoir fishing</li> </ul>   |
| 3  | Socio-cultural impacts <ul style="list-style-type: none"> <li>- Impact on physical cultural resources</li> <li>- Impact on cremation Sites</li> <li>- Impact on religious practices</li> <li>- Impact on customary use of flora and fauna</li> <li>- Impact on ritual practices</li> </ul> | <ul style="list-style-type: none"> <li>• 24 hours a day 10 % mean monthly flow of the driest month during the dry season for cultural and religious survival</li> <li>• The environmental flows released will be canalized in the stretch of the Cremation Ghat and Panchyan Shivalay Temple area to provide sufficient water for the cremation and religious performances.</li> <li>• Proponent will conduct the awareness programs among the project workers which will help them to adopt to the cultural and traditional practices of local people</li> <li>• Strict rules will be administered for workers so that workers will not interrupt on the activities of local people.</li> <li>• Workers and project officials will not be allowed to interfere in the existing culture and traditions of local people, which will be monitored by the project management. There will be provision of fine, if anyone breaks the rule.</li> </ul>  |

|   |  |   |
|---|--|---|
|   |  | <ul style="list-style-type: none"> <li>• Special consideration will be given to the local workers for leaves/holidays on local festivals/rituals.</li> <li>• Specific programs with financial support will be developed for preservation and protection of historical, archaeological, religious and cultural sites in the project areas with the participation and consent of local people. In addition, programs will be carried out on preserving and protecting indigenous knowledge, oral literature and languages.</li> <li>• Maintenance of the affected cremation/customary sites</li> </ul>  |
| 4 | Impacts on Water Supply, sanitation and health | <ul style="list-style-type: none"> <li>• Provision of better levels of services for water supply, sanitation, health and drainage.</li> <li>• Enhancement program on water supply and sanitation in the participation of local people/local authorities/NGOs</li> <li>• Health centers will be opened for attending health matters of workers and local population during construction phase</li> </ul>   |
| 5 | Impacts on Occupational Health and Safety      | <ul style="list-style-type: none"> <li>• Project contractors in the construction phase and project operator in the operation phase will be made responsible for the occupational health and safety of workers.</li> <li>• The contractor(s) will be made responsible to adopt Safe Construction Practices (SCP) in order to minimize construction related accidents</li> <li>• Trainings will be provided to all construction workers about SCP;</li> <li>• Fencing will be done to restrict public movement around the construction sites;</li> <li>• Protective gear such as helmets, boots, gloves and masks will be provided to construction workers, supervisors and visitors;</li> <li>• Warning signs/posts will be installed for informing the local people about the potentially dangerous areas such as quarry site, weir site (dam site), tunnel outlets and tailrace outlet;</li> <li>• Only authorized persons will be given responsibility to operate machinery and other heavy equipment;</li> <li>• Temporary support structures will be constructed to avoid rock falls, erosion and landslides during construction. Soil excavation during monsoon in unstable areas will be minimized, if not totally avoided;</li> <li>• Adequate lighting and ventilation facilities will be maintained at all construction sites;</li> <li>• Emergency equipment like first-aid kits, flashlights, fire extinguishers, siren, emergency vehicles and phones will be made available at construction sites;</li> <li>• Qualified medical personnel will be appointed at the construction sites to oversee emergencies related to occupational health and safety;</li> <li>• An emergency response contingency plan will be prepared to appropriately deal with emergencies. The workers will be trained to follow the plan in case of accidents;</li> <li>• The contractor(s) or the client will obtain insurance against any possible injury to all project staff/workers including client's personnel. Furthermore, the responsible party will also obtain third party insurance against any possible injury to visitors and possible victims.</li> </ul> |
| 6 | Impacts on Civic amenities and institutions    | <ul style="list-style-type: none"> <li>• The project will allocate adequate funds for improvement of existing infrastructure as needed during the construction phase.</li> <li>• Project will give special attention to provide drinking water and sanitation facilities for the workers. Toilets will be constructed for the workers in the ratio of at least 1 for 20 people.</li> <li>• Additional health service centers and markets will be established.</li> <li>• Project will allocate funds for the support of schools and health posts.</li> </ul>  |

|   |  |  |
|---|--|--|
|   |  | <ul style="list-style-type: none"> <li>• Project will also contribute in the repair and maintenance of public places like Pati, Pauwa, Chautari, etc.</li> <li>• Enhancement programs on health, drinking water, sanitation, and social security etc will be appropriately designed and implemented with proper consultation and representation of the local stakeholders. Project will have a lead role to mobilize the local institutions with financial and technical backstopping.</li> </ul>  |
| 7 | Possible conflict between local and outsider         | <ul style="list-style-type: none"> <li>• Special instructions will be given to all workers to act in a responsible manner during and after working hours, respecting the rights, property and practices of local people.</li> <li>• Local authorities in the project area will be encouraged to impose restrictions on alcohol abuse.</li> <li>• A Public Relations Officer will be assigned for maintaining relations and communication between the local people and project workers.</li> <li>• A mechanism will be set up to limit the activities of workforce within their camps.</li> <li>• Consumption of alcohol will be strictly prohibited in the project work sites, camps and nearby villages.</li> <li>• The movement of the labor force into adjoining villages will be prohibited at night.</li> <li>• The local people will be given priority for jobs during the construction period</li> <li>• A public awareness program will be conducted so that the people of the project area will have access to prior information on project implementation.</li> <li>• A Public Information Center (PIC) will be established where local people and people from outside can get information about the project activities.</li> <li>• Social security enhancement programs will be launched to strengthen the existing formal and informal security units/institutions/organizations with the consent and participation of concerned government authorities and the local people.</li> </ul> |
| 8 | Impacts on Adivasi Janajati and disadvantaged groups | <ul style="list-style-type: none"> <li>• As a part of SAP, Indigenous and Vulnerable Community Development Programs will be designed and implemented in meaningful participation of <i>Adivasi Janajati</i> and disadvantaged groups.</li> <li>• Mechanism will be implemented to involve <i>Adivasi Janajati</i> and disadvantaged groups in decision-making process that will enable informed participation by these groups, and result in the demonstrable acceptance of key decisions. The processes will be guided by free, prior and informed consent that can be achieved through formal and informal representative bodies.</li> <li>• Focus on building skills of women and other vulnerable groups through substantial investments in imparting new relevant skills that are in demand in the regional and local economy, enhancement of existing skills, and special measures to facilitate capacity building.</li> <li>• Acknowledging the rights of women and providing/encouraging for their full and active participation in the decision - making process by developing Gender policy.</li> <li>• Provide adequate resources to women and other vulnerable groups to participate fully and actively.</li> <li>• Efforts will be made to gender equity under separate packages in the SAP</li> </ul>  |

**Table 9-2: Development measures for vulnerable groups**

| SN | Items  | Development measures   |
|----|--|--|
| 1  | Socio-economic consideration for vulnerable groups | <ul style="list-style-type: none"> <li>• Fair participation and representation of vulnerable groups at all levels of the project with a view to influencing its decisions and outcomes for the vulnerable constituents through their informed consent;</li> <li>• Ensuring protection of social, economic and cultural interests of vulnerable communities in project interventions;</li> <li>• The project shall promote capacity building of vulnerable community to take on the roles in decision making and service provision, supervision etc;</li> <li>• Ensuring adherence to all legislative and regulatory framework for vulnerable group development.</li> </ul>   |
| 2  | Provision to be included in SAP                    | <ul style="list-style-type: none"> <li>• Identification of vulnerable group settlements/ hamlets in the project areas</li> <li>• The SAP will have specific provisions to offer different types of training to vulnerable communities which are, however, not limited to the followings: <ul style="list-style-type: none"> <li>○ Skill development training such as , driving, civil work, mechanics, hair cutting, plumbing, masonry, carpentry, handicrafts, sewing, etc.;</li> <li>○ Income generation training on micro-enterprise, vegetable production, poultry and piggery;</li> <li>○ Safe motherhood, women empowerment, leadership, health and hygiene;</li> <li>○ Nursery establishment, and plantation of fruits and fodder trees.</li> </ul> </li> </ul> |

## **CHAPTER 10**

# **CONCLUSION AND RECOMMENDATION**

## 10 CONCLUSION

The local people including indigenous communities and vulnerable people are positive towards the implementation of the project, if they benefit from the project. They pointed out that the smooth operation of the project is possible only through close co-ordination with local people in the planning and implementation stages. Apart from the considerable economic benefits that would arise from power generation, the project will also generate direct economic benefits to the Government of Nepal (GoN) and the affected districts from royalties and revenues. Other direct project benefits are likely to arise from access to the reservoir area, regional development, employment of local people and general improvement of infrastructure and services in the project-affected Village Development Committees (VDCs). In addition, Kabeli-A Hydroelectric Project (KAHEP) foresees a number of measures and activities to enhance the expected benefits associated with the development of clean energy, access road construction and upgrading of Mechi Highway. Local communities including vulnerable groups are targeted for their livelihood enhancement through social development, public health awareness and skill training programs that will enhance their awareness and enable them to benefit from the project.

The KAHEP will result in a number of adverse social impacts. For the construction of KAHEP, about 47.718 ha of land (25.21 ha temporarily and 22.508 ha permanently) will be acquired for different project features. In terms of land use, 29.16 ha (61.10%) is the riverine area including river beds, river flood plains and elevated banks. Agricultural land (cultivated and marginal) required is 35.60 % followed by 3.30% of the forest land including Community Forests (CFs), communal forests and Leasehold Forest (LF). However, KAHEP is not going to displace any family completely and no household will be relocated due to project impact.

Potential impacts caused by reduced water flows on the downstream stretch of the Kabeli River include reduced water quality and impacts villagers relying partly on the Kabeli River as a source of fishing, domestic/household water and as a site of cremation, ritual and religious practices.

There will be significant impacts related to community health, particularly in the project construction sites during construction phase. Communicable diseases, particularly Sexually Transmitted Diseases (STD), HIV and AIDS by the outside workforce are potential. Outbreak of waterborne disease, such as cholera, diarrhea, typhoid, jaundice, cannot be ruled out when a large number of people flock and live in a limited area at the construction sites under poor sanitation condition. Similarly, gender issue related to girl trafficking, and exploitation (sexual, labor wage etc.) in poverty-ridden societies of the construction sites and surrounding areas, are issues experienced in most of the power development projects. Indigenous and *Dalits* communities surrounding the project area are also vulnerable to this form of gender exploitation.

With some exceptions like downstream dewatering, transformation of farmland and forest areas into project structure and facilities, all the adverse impacts are reversible. Most of the identified adverse impacts are locally confined, and limited mainly to the period of construction, which is typically associated with the nature of construction works.

*Adivasi Janajatis* are positive towards the project. They want the project because in their view, the project will bring many opportunities to the local residents such as access to electricity, employment, trade, business, and others. They think that they are the first people to benefit because the project is located in their area and they have high level of expectations from the project. They want that the project should respect their rights. They expressed that the impacts of the project on their cultural life, archaeological sites, identity, right to land and natural resources need to be understood and considered from the beginning of the project. However, they appear negotiable and cooperative. The *Adivasi Janjati* of the project area, though belong to a different ethnicity, share common approach to their economic and livelihood activities. A common package that is developed for the project impacts will be applicable to all the affected population. However, KAHEP will give extra consideration to *Adivasi Janajati* and disadvantaged

groups that will minimize the adverse impacts and provide benefits; and will ensure their participation in the project cycle.

This study concludes that with the set of proposed mitigation measures put into action, many of the identified impacts can be minimized or even set off. Once the mitigation measures outlined in the SAP are in place and respected by the promoter, contractors and all supervision and monitoring mechanisms are fully carried out, there is no risk and or a little residual impacts that may affect the social and cultural environs. However, certain induced / cumulative impacts such as undesired ribbon settlements along access and upgraded roads and incoming population flow around powerhouse areas cannot be averted by social mitigation measures. Similarly socially unrecognized activities e.g. sexually transmitted diseases, human trafficking etc., may remain serious problems in perpetuity. To address and overcome these issues, it needs concerted actions of various governmental and non-governmental agencies including the local stakeholders.

Given the above conclusion, this SA Report recommends to implement the project under the condition that the social safeguard measures outlined in the SAP are fully and effectively implemented followed by its monitoring process in action.



## BIBLIOGRAPHY

- ABPSD (2009) *Statistical Information on Nepalese Agriculture (2008/09)*, Agri-Business Promotion and Statistics Division, GON, Singha Durbar, Kathmandu, 2009
- Acharya et.al (2009) *Caste, Ethnic and Gender Dimensions of Nepal's Population: A Statistical Analysis, 1991-2001*, Tanka Prasad Acharya Memorial Foundation, DFID Nepal and the World Bank, Kathmandu
- Bhattachan et.al (2003) *Existing Practices of Caste-Based Untouchability in Nepal and Strategy for Campaign for its Elimination*, Action Aid Nepal, Kathmandu
- Bista, Dor Bahadur (1967) *People of Nepal*, Ratna Pustak Bhandar, Kathmandu, Nepal
- CBS (1996) *National Living Standard Surveys 1995/96*, Central Bureau of Statistics (CBS), Thapathali, Kathmandu, Nepal
- CBS (2001) *Population Census 2001: National Report*, Central Bureau of Statistics (CBS), Thapathali, Kathmandu.
- CBS (2004) *Nepal Living Standards Survey 2003/04, Statistical Volume One*, Central Bureau of Statistics (CBS), National Planning Commission Secretariat HMG of Nepal
- CBS (2004) *The Population Census of Nepal, 2001* Central Bureau of Statistics (CBS), Thapathali, Kathmandu.
- CBS (2004) *Women in Nepal Some Statistical Facts*, Central Bureau of Statistics (CBS), Thapathali, Kahtmandu, Nepal
- CBS-NLSS (2004) *National Living Standard Surveys 2003/04, Statistical Report, Volume One*, Central Bureau of Statistics (CBS), Thapathali, Kathmandu, Nepal
- CBS (2004) *Nepal Living Standards Survey 2003/04: Statistical Report (Volume One)*, Central Bureau of Statistics (CBS), Thapathali, Kathmandu.
- CBS (2004) *Nepal Living Standards Survey 2003/04: Statistical Report (Volume Two)*, Central Bureau of Statistics (CBS), Thapathali, Kathmandu.
- CBS, ICIMOD/MENRIS, SNV-Nepal (2003) *Districts of Nepal Indicators of Development, Update 2003*, Central Bureau of Statistics (CBS), Thapathali, Kathmandu, Nepal and International Centre for Integrated Mountain Development (ICIMOD/MENRIS) with the support of SNV-Nepal

- Dahal, Dilli Ram (2003) *Chapter3: Social Composition of Population: Caste/ethnicity and Religion in Nepal*, In Population Monograph of Nepal, Vol. I pp 87-135, Central Bureau of Statistics (CBS), Thapathali, Kathmandu, Nepal
- DDCT (2001) *District Profile, 2001*, District Development Committee, Panchthar, Nepal
- DDCT (2009) *District Profile, 2009*, District Development Committee, Taplejung, Nepal
- Dixit, A. and Basnet, S. (2005) *Recognizing Entitlements and Sharing Benefits: Emerging Trends in Nepal's Hydropower Terrain*; The World Conservation Union (IUCN) and Nepal Water Conservation Foundation, Kathmandu
- Gaenzle, Martin, (2000). *Origins and Migrations: Kinship, Mythology and Ethnic Identity among the Mewahang Rai of East Nepal*. Mandela Book Point, the Mountain Institute
- GoN (1964) *Land Reform Act 1964 (amendment 2001)*, Government of Nepal, Kathmandu, Nepal
- GoN (1976) *Guthi Corporation Act, 1976*, Government of Nepal, Kathmandu, Nepal
- GoN (1977) *Land Acquisition Act, 1977*, Government of Nepal, Kathmandu, Nepal
- GoN (1992) *Electricity Act 1992*, Government of Nepal, Kathmandu, Nepal
- GoN (1992) *Electricity Act 1992*, Government of Nepal, Kathmandu, Nepal
- GoN (1992-1997) *The Eight Plan (1992-1997)*, National Planning Commission, Government of Nepal, Kathmandu, Nepal
- GoN (1993) *Electricity Rule 1993*, Government of Nepal, Kathmandu, Nepal
- GoN (1993) *Forest Act, 1993*, Government of Nepal, Kathmandu, Nepal
- GoN (1993) *Water Resources Act, 1993*, Government of Nepal, Kathmandu, Nepal
- GoN (1993) *Water Resources Regulation, 1993*, Government of Nepal, Kathmandu, Nepal
- GoN (1995) *Forest Regulation, 1995*, Government of Nepal, Kathmandu, Nepal
- GoN (1996) *Environment Protection Act, 1996*, Government of Nepal, Kathmandu, Nepal
- GoN (1997) *Environment Protection Rules, 1997*, Government of Nepal, Kathmandu, Nepal

- GoN (1997-2002) *The Ninth Plan (1997-2002)*, National Planning Commission, Government of Nepal, Kathmandu, Nepal
- GoN (1999) *Local Self Governance Act 1999*, Government of Nepal, Kathmandu, Nepal
- GoN (2000) *Local Self Governance Regulation, 2000*, Government of Nepal, Kathmandu, Nepal
- GoN (2001) *Development of Indigenous Nationalities Act 2001*, Government of Nepal, Kathmandu, Nepal
- GoN (2002-2007) *The Tenth Plan (2002-2007)*, National Planning Commission, Government of Nepal, Kathmandu, Nepal
- GoN (2005) *Electricity Development and Management Act 2005*, Government of Nepal, Kathmandu, Nepal
- GoN (2005) *National Human Rights Action Plan 2005*, Government of Nepal, Kathmandu, Nepal
- GoN (2007) *Interim Constitution of Nepal, 2063*, Government of Nepal, Kathmandu, Nepal
- GoN (2007-2010) *Three Years Interim Plan Paper (2007-2010)*, National Planning Commission, Government of Nepal, Kathmandu, Nepal
- HCPL (2010) *Updated Feasibility Study Report of Kabeli-A Hydroelectric Project, 2010*, Hydro Consult Pvt. Ltd., Kathmandu, Nepal
- ISRSC (2004) *District Development Profile of Nepal*, Informal Sector Research and Study Center, Asha Offset Press, Kathmandu, Nepal
- KEL (2010) *Updated Feasibility Study and EIA of Kabeli-A Hydroelectric Project, Volume 1: main, August 2010*, Kabeli Energy Limited, Kathmandu, Nepal
- KEL (2011) *Updated Feasibility Study and EIA of Kabeli-A Hydroelectric Project, Volume 1: main*, Kabeli Energy Limited, Kathmandu, Nepal
- KGEMU (2002) *Monitoring and Management in Kali Gandaki 'A' Hydroelectric Project: A Social Synthesis Report*, Kali Gandaki Environmental Management Unit, Beltari, Syangja, Nepal
- Kisan, Yam Bahadur (2009) *A Study of Dalits' Inclusion in Nepali State Governance. In Identity and Society: Social Exclusion and Inclusion in Nepal*. Kathmandu: Mandala Book Point and Social Inclusion Research Fund.
- Lionel Caplan (1970) *Land and Social Change in East Nepal: A Study of Hindu-Tribal Relation*, University of California Press: Berkeley
- Molnar, A. and Ragsdale, T. (1991) *Land Acquisition and Resettlement Issues and Procedures in Nepal*, Unpublished document

|                                      |  |
|--------------------------------------|--|
| MoWR (1981)                          | <i>Water: The Key to Nepal's Development 2nd (ed)</i> , Ministry of Water Resources, Government of Nepal, Kathmandu, Nepal   |
| MRCP (2010)                          | <i>District Development Profile of Nepal-2010/11: A Socio-economic Database of Nepal</i> , Mega Research Centre & Publication, Putalisadak, Kathmandu, Nepal   |
| NEFIN (2005)                         | <i>Nepal Federation of Indigenous Nationalities (NEFIN)</i> , Janjati Empowerment Project, Kathmandu.  |
| NPC (2006)                           | <i>Land Acquisition, Compensation and Resettlement in Development Projects</i> . National Planning Commission, Kathmandu. A report prepared with assistance by the Asian Development Bank (TA-4422-NEP). |
| Regmi. Mahesh Chandra (1978)         | <i>Land Tenure and Taxation in Nepal 2<sup>nd</sup></i> (Ed) Ratna Pustak Bhandar 1978.xii, 534  |
| Sustainable Development Forum (2006) | <i>Ownership of Dalits in Land: A Study</i> , Sustainable Development Forum, Kathmandu, Nepal  |
| UNDP (2004)                          | <i>Nepal Human Development Report 2004</i> , United Nations Development Program  |
| UNDP (2009)                          | <i>Nepal Human Development Report 2009</i> , United Nations Development Program  |

### Website Cited:

<http://go.worldbank.org/TE769PDWN0>, accessed on October 11, 2010

<http://go.worldbank.org/96LQB2JT50>, accessed on October, 10 2010

<http://go.worldbank.org/7T8EIAJQU0> accessed on October,10 2010

[http://www.nepalhydro.org.np/nha\\_db.pdf](http://www.nepalhydro.org.np/nha_db.pdf) accessed on June 11, 2010

<http://www.e7.org> accessed on October, 11, 2010

[www.moac.gov.np/](http://www.moac.gov.np/) accessed on October, 11, 2010

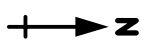
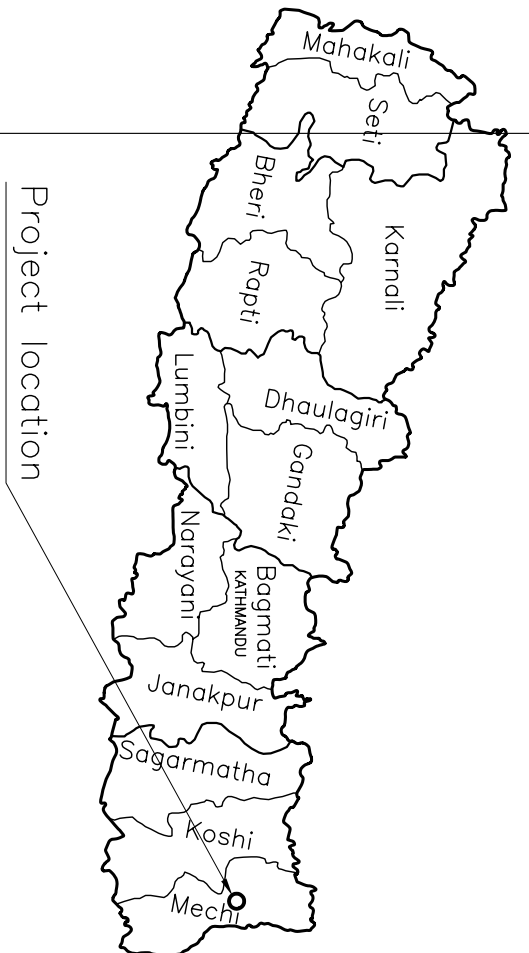
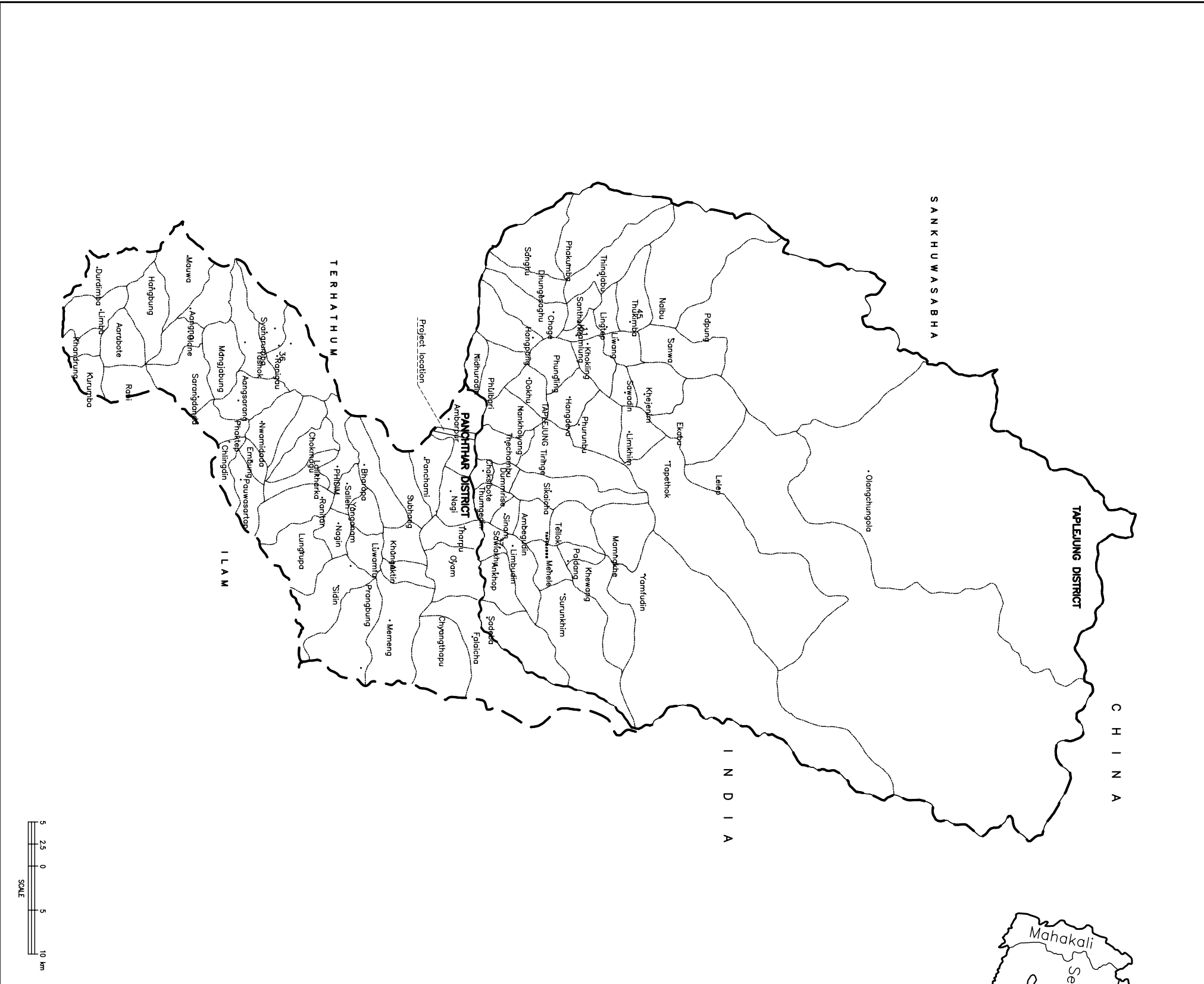
[www.ilo.org](http://www.ilo.org) accessed on July 26, 2013

**ANNEX A**




**PROJECT LOCATION MAP**

**KABELI-A HYDROELECTRIC PROJECT**  
**SA STUDY**

JULY 2013



**LEGEND**

-  District boundary
-  VDC boundary
-  Project location boundary

KABELI – A HRDROELECTRIC PROJECT

**PROJECT LOCATION**

June 2010

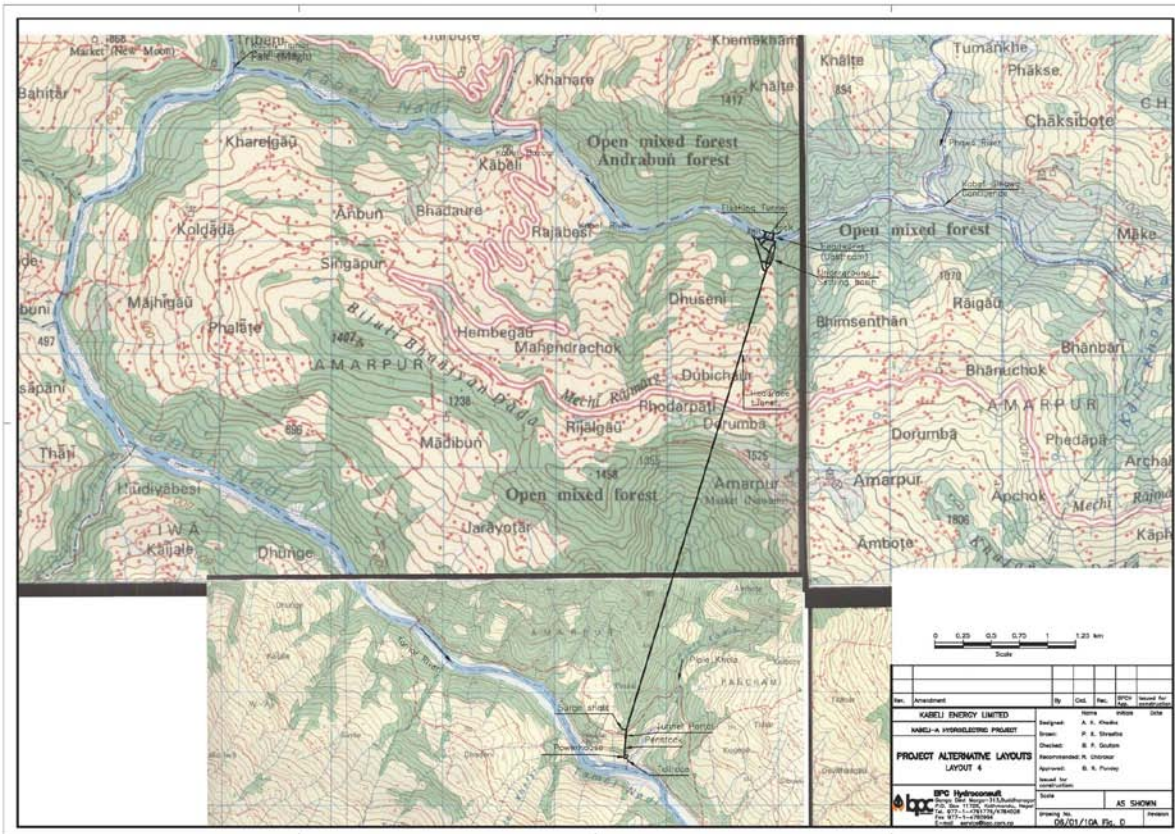
Figure 1

**ANNEX B**

**PROJECT LAYOUT MAP**

**KABELI-A HYDROELECTRIC PROJECT**  
**SA STUDY**

JULY 2013



Layout of KAHEP



# **ANNEX C**

## **CHECKLISTS**

**KABELI-A HYDROELECTRIC PROJECT**  
**SA STUDY**

JULY 2013

*FGD will be carried out with CFUGs (dam/reservoir and powerhouse), Water Users of (irrigation/spiritual) – dewatered zone of Kabeli Khola, Majhi in Powerhouse site and representative groups of Janajati/Adibasi, Dalits and Women of the four Project affected VDCs and along the canal and excess road alignment.*

## **FGD Checklist for CFUGs and Water Users**

**Location (District, VDC, Ward and Tole /Gaun):**

**Date:**

**Facilitator:**

1. **Project Description** (*Presented by the Facilitator/Researcher*)
2. **Profile of the CFUGs/Water Users**
  - Total Number of User member HH and membership Criteria
  - Caste/ethnic and gender composition of the Users
  - Leadership Patterns of the User Committee
  - Overall condition of the forest including types with major species
  - Extraction of forest products ( types, quantity per year ) and provisions of distribution among members and non members
  - Level of forest product/ water available and their sufficiency for the local users and alternative mechanisms
  - Main use/purpose of water
  - Extraction of fish and other aquatic lives from the river
  - Spiritual and cultural use and associated values of the river
3. **Attitude toward the Project and Perceived Likely Impacts (high, low or medium)**
4. **Mitigation Measures and Modes of Rehabilitation/ or Restoration**
5. **General Perception and Understanding of Local Development Needs/Issues**
6. **Expectations from the Project**
7. **Identification of Needs and their Priority within the Scope of the Project**
8. **Modes of Implementation of Social Development Program**
  - Institutional arrangements
  - Participation and consultation
  - Grievances and hearing mechanism
  - Monitoring and evaluation

# FGD Checklist for Women

**Location (District, VDC, Ward and Tole /Gaun):**

**Date:**

**Facilitator:**

- 1. Project Description** (*Presented by the Facilitator/Researcher*)
- 2. Socioeconomic Profile:** (*try to get information by caste/ethnic group if the FGD is Heterogeneous*)
  - Population/demographic Features
    - Proportion of women population
    - Women headed HHs
    - Average Age of marriage and child birth
  - Main and secondary modes of livelihood
  - Education/ skill & trainings
  - Formal Employment
  - Health condition
  - Patterns of Land and Assets Owned by Women
  - Patterns of energy used
    - Cooking
    - Lighting
  - Access to other resources and assets
    - Safe Drinking Water
    - Toilet
    - School
    - Health Centre
    - Security centre
  - Access to natural resources
    - Forest/fuelwood/fodder/timber/NTFPs
    - Animal grazing
    - River/recreation
  - Involvement in Decision Making
    - Domestic Sphere
    - Public Sphere
  - Overall status of women
- 3. Attitude toward the Project and Perceived Likely Impacts (high, low or medium)**
- 4. Mitigation Measures and Modes of Rehabilitation/ or Restoration**
- 5. General Perception and Understanding of Local Development Needs/Issues**
- 6. Expectations from the Project**
- 7. Identification of Needs and their Priority within the Scope of the Project**
- 8. Modes of Implementation of Social Development Program**
  - Institutional arrangements
  - Participation and consultation
  - Grievances and hearing mechanism
  - Monitoring and evaluation

# **FGD Checklist for Dalit**

**Location (District, VDC, Ward and Tole /Gaun):**

**Date:**

**Facilitator:**

- 1. Project Description** (*Presented by the Facilitator/Researcher*)
- 2. Socioeconomic Profile:** (try to get information by caste group if the FGD is Heterogeneous)
  - Population/demographic Features
    - Total HHs
    - Total Population
    - Male/Female Ratio
  - Main and Secondary Modes of Livelihood
  - Land Ownership Patterns
  - Food Sufficiency Level
  - Level of Education/ skill & trainings
  - Formal Employment
  - Health Condition
  - Patterns of energy used
    - Cooking
    - Lighting
  - Access to other Resources and Assets
    - Safe Drinking Water
    - Toilet
    - School
    - Health Centre
    - Security centre
  - Access to Natural Resources
    - Forest/fuelwood/fodder/timber/NTFPs
    - Animal grazing
    - River/recreation
  - Involvement in Public Decision Making
- 3. Attitude toward the Project and Perceived Likely Impacts (high, low or medium)**
- 4. Mitigation Measures and Modes of Rehabilitation/ or Restoration**
- 5. General Perception and Understanding of Local Development Needs/Issues**
- 6. Expectations from the Project**
- 7. Identification of Needs and their Priority within the Scope of the Project**
- 8. Modes of Implementation of Social Development Program**
  - Institutional arrangements
  - Participation and consultation
  - Grievances and hearing mechanism
  - Monitoring and evaluation

# **FGD Checklist for Janjati/Adibasi**

**Location (District, VDC, Ward and Tole /Gaun):**

**Date:**

**Facilitator:**

1. **Project Description** (*Presented by the Facilitator/Researcher*)
2. **Socioeconomic Profile:** (*Try to get information by Janjati/Adibasi group if the FGD is Heterogeneous*)

- Population/demographic features
  - Total HHs
  - Total population
  - Male/Female Ratio
- Main and Secondary Modes of Livelihood
- Land Ownership Patterns
- Food Sufficiency Level
- Level of Education/ skill & trainings
- Formal Employment
- Health Condition
- Patterns of energy used
  - Cooking
  - Lighting
- Access to other Resources and Assets
  - Safe Drinking Water
  - Toilet
  - School
  - Health Centre
  - Security centre
- Involvement in Public Decision Making
  - Ethnic organization
  - NGOs
  - Political Parties
  - Neighborhood
- Access to natural resources
  - Forest/fuel wood/ fodder/timber/NTFPs
  - Animal grazing
  - River/recreation

### **3. Self-identification**

1. Characteristics of Indigenous Peoples (Adhivasi Janajatis)
2. Distinct social, economic, cultural and political institutions
3. Cultural Heritage
  - a. Cultural resources- temples, shrines, and sacred elements of the land-scape, artifacts and buildings etc.
  - b. Archaeological resources-plants and animal remains, burial sites and architectural elements etc.

4. Language and Oral literature- ritual texts, curative chants, epic poems, musical genres, folk tales, creation tales, songs, myths, legends, word games, ethnic history, or historical narratives etc.
5. Ethnic history of your community, historical continuity in this present location
6. Indigenous Knowledge, tools and techniques
7. Some crucial factors to affected Adivashi Janajati's identity, survival and cultural viability

**4. Land and Natural Resources**

1. Traditional or de facto or customary rights to land and natural resources
2. Your traditional territory
3. Special relationship with their land as a basic to their existence and to all their beliefs, customs, traditions and culture.
4. Such relationships and their various social, cultural, economic, spiritual and political dimensions
5. Culture and rituals and their contributions in maintenance of social order
6. Cultural and spiritual specialties attached with Kabeli Khola
7. Communally owned region, forest, hunting areas
8. Animal and plant species found in this area that have cultural, rituals and religious functions/values

**5. Religion, Rituals, Customs and Institutions**

**6. Attitude toward the Project and Perceived Likely Impacts (high, low or medium)**

**7. Mitigation Measures and Modes of Rehabilitation/ or Restoration**

**8. General Perception and Understanding of Local Development Needs/Issues**

**9. Expectations from the Project**

**10. Identification of Needs and their Priority within the Scope of the Project**

**11. Modes of Implementation of Social Development Program**

- Institutional arrangements
- Participation and consultation
- Grievances and hearing mechanism
- Monitoring and evaluation

# **FGD Checklist for Fishermen**

Location:

Date:

1. **Project Description** (*Presented by the Facilitator/Researcher*)
2. **Socioeconomic Profile:** (*try to get information by Janjati/Adibasi group if the FGD is Heterogeneous*)
  - Population/demographic features
    - Total HHs
    - Total Population
    - Male/Female Ratio
  - Main and Secondary Modes of Livelihood
  - Number of HHs fully/partially dependent on Fishery
  - Land Ownership Patterns
  - Food Sufficiency Level
  - Level of Education/ skill & trainings
  - Formal Employment
  - Health Condition
  - Patterns of energy used
    - Cooking
    - Lighting
  - Access to other Resources and Assets
    - Safe Drinking Water
    - Toilet
    - School
    - Health Centre
    - Security centre
  - Access to natural resources
    - Forest/fuelwood/fodder/timber/NTFPs
    - Animal grazing
    - River/recreation
  - Involvement in Public Decision Making
    - Ethnic organization
    - NGOs
    - Political Parties
    - Neighborhood
3. **Attitude toward the Project and Perceived Likely Impacts (high, low or medium)**
4. **Mitigation Measures and Modes of Rehabilitation/ or Restoration**
5. **General Perception and Understanding of Local Development Needs/Issues**
6. **Expectations from the Project**
7. **Identification of Needs and their Priority within the Scope of the Project**
8. **Modes of Implementation of Social Development Program**
  - Institutional arrangements
  - Participation and consultation
  - Grievances and hearing mechanism
  - Monitoring and evaluation

## Social Assessment of Kabeli-A Hydroelectric Project

(Information Collection for Social Assessment and Social Action Plan)

### Checklist for VDC Level Discussion

*A Participatory Rapid Appraisal workshop will be done at each impacted VDC. The prospective participants will be VDC the secretary and other relevant staff, representative of major political parties, school teachers, representatives of government line agencies and service centers, representatives of the civil society organizations and so on.*

**Name of the VDC:**

**Date:**

**Venue:**

#### 1. Caste/ethnic Distribution of the VDC

| SN  | Caste/ethnic Group | No. of HH | Main Settlement Areas | Remarks |
|-----|--------------------|-----------|-----------------------|---------|
| 1.  |                    |           |                       |         |
| 2.  |                    |           |                       |         |
| 3.  |                    |           |                       |         |
| 4.  |                    |           |                       |         |
| 5.  |                    |           |                       |         |
| 6.  |                    |           |                       |         |
| 7.  |                    |           |                       |         |
| 8.  |                    |           |                       |         |
| 9.  |                    |           |                       |         |
| 10. |                    |           |                       |         |

#### 2. Distribution by Economic Status

| SN | Economic Class                   | No. of HH | Main Concentration Areas | Main Ethnic/Caste Group |
|----|----------------------------------|-----------|--------------------------|-------------------------|
| 1. | <b>Better off Group</b>          |           |                          |                         |
| 2. | <b>Middle Group</b>              |           |                          |                         |
| 3. | <b>Poor and vulnerable group</b> |           |                          |                         |
|    |                                  |           |                          |                         |

#### 3. Main Sources of livelihood

| SN | Main Sources of Livelihood   | No. of HH | Main Caste/ethnic Group | Remarks |
|----|------------------------------|-----------|-------------------------|---------|
| 1. | Farming Only                 |           |                         |         |
| 2. | Animal Husbandry only        |           |                         |         |
| 3. | Farming and Animal Husbandry |           |                         |         |
| 4. | Cottage Industry             |           |                         |         |
| 5. | Petty business and trade     |           |                         |         |
| 6. | Service/Pension              |           |                         |         |



|    |                    |  |  |  |
|----|--------------------|--|--|--|
| 7. | Remittance         |  |  |  |
| 8. | Daily Labor/Porter |  |  |  |
| 9. | Other( Specify)    |  |  |  |

#### 4. Land holding patterns of the VDC

| Land holding Range | Number of HH | Major group | Caste/Ethnic | Remarks |
|--------------------|--------------|-------------|--------------|---------|
| Landless           |              |             |              |         |
| 0-5 Ropani         |              |             |              |         |
| 6-10 Ropani        |              |             |              |         |
| 11-15 Ropani       |              |             |              |         |
| 16-20 Ropani       |              |             |              |         |
| 21 and Above       |              |             |              |         |

#### 5. Level of Food Sufficiency from own farm production

| Food Sufficiency | Number of HH | Major group | Caste/Ethnic | Remarks |
|------------------|--------------|-------------|--------------|---------|
| Whole year       |              |             |              |         |
| Up to 9 month    |              |             |              |         |
| Up to 6 month    |              |             |              |         |
| Only 3 month     |              |             |              |         |
|                  |              |             |              |         |

#### 6. Irrigation facilities and Sources of Irrigation

| Land Type | Area under the irrigation | Sources of irrigation | Types of Irrigation |
|-----------|---------------------------|-----------------------|---------------------|
| Khet      |                           |                       |                     |
| Bari      |                           |                       |                     |
| Forest    |                           |                       |                     |
| Orchard   |                           |                       |                     |

#### 7. Major Cropping Pattern of the VDC

| Land type   | Season | Recent Past Year |
|-------------|--------|------------------|
| <i>Khet</i> | Summer |                  |
|             | Winter |                  |
|             | Spring |                  |

|             |        |  |
|-------------|--------|--|
| <i>Bari</i> | Summer |  |
|             | Winter |  |
|             | Spring |  |

### 8. Land Price, Agriculture Productivity and Market Price of the Products

| SN  | Land type | Market price of the land per Ropani | Major Crops | Production per unit land ( Ropani) | Market Price per Kg |
|-----|-----------|-------------------------------------|-------------|------------------------------------|---------------------|
| 1.  | Bari      |                                     |             |                                    |                     |
| 2.  |           |                                     |             |                                    |                     |
| 3.  |           |                                     |             |                                    |                     |
| 4.  |           |                                     |             |                                    |                     |
| 5.  |           |                                     |             |                                    |                     |
| 6.  | Khet      |                                     |             |                                    |                     |
| 7.  |           |                                     |             |                                    |                     |
| 8.  |           |                                     |             |                                    |                     |
| 9.  |           |                                     |             |                                    |                     |
| 10. | Forest    |                                     |             |                                    |                     |
| 11. |           |                                     |             |                                    |                     |
| 12. |           |                                     |             |                                    |                     |
| 13. |           |                                     |             |                                    |                     |
| 14. | Orchard   |                                     |             |                                    |                     |
| 15. |           |                                     |             |                                    |                     |
| 16. |           |                                     |             |                                    |                     |
| 17. |           |                                     |             |                                    |                     |

### 9. Price of Livestock and Livestock Production

| SN | Livestock and livestock products | Market price per unit or kg |
|----|----------------------------------|-----------------------------|
| 1. |                                  |                             |
| 2. |                                  |                             |
| 3. |                                  |                             |
| 4. |                                  |                             |
| 5. |                                  |                             |
| 6. |                                  |                             |

### 10. Energy Used Pattern

| Types of Energy Used |                 | No. of households | Consumption Per HH per day |
|----------------------|-----------------|-------------------|----------------------------|
| Lighting Purpose     | Cooking Purpose |                   |                            |
| Electricity          |                 |                   |                            |
| Solar                |                 |                   |                            |
| Biogas               |                 |                   |                            |
| Kerosene             |                 |                   |                            |
| Wood ( diyalo)       |                 |                   |                            |
|                      | Fuel wood       |                   |                            |
|                      | Electricity     |                   |                            |
|                      | Solar           |                   |                            |
|                      | Biogas          |                   |                            |
|                      | Kerosene        |                   |                            |
|                      | LPG gas         |                   |                            |

### 11. Drinking Water and Sanitation Facilities

| Facilities              | Number of HH      | Major group | Caste/Ethnic | Remarks |
|-------------------------|-------------------|-------------|--------------|---------|
| Tape (Piped water)      |                   |             |              |         |
| Spring water/Stone tape |                   |             |              |         |
| Water Hole( Kuwa)       |                   |             |              |         |
| Lake                    |                   |             |              |         |
| River/rivulet           |                   |             |              |         |
| Irrigation Cannel       |                   |             |              |         |
| Toilet                  | Pit Latrine       |             |              |         |
|                         | Permanent Latrine |             |              |         |
|                         |                   |             |              |         |

### 12. Description of available water resources( river, lake and water hole etc)

| SN | Name of the River, lake etc. | Location | Name of the major aquatic lives present | Annual harvest ( if any) | Market Price /KG or /piece |
|----|------------------------------|----------|---|--------------------------|----------------------------|
| 1. |                              |          |   |                          |                            |
|    |                              |          |   |                          |                            |
|    |                              |          |   |                          |                            |
| 2. |                              |          |   |                          |                            |
|    |                              |          |   |                          |                            |
|    |                              |          |   |                          |                            |
| 3. |                              |          |   |                          |                            |
|    |                              |          |   |                          |                            |
|    |                              |          |   |                          |                            |
| 4. |                              |          |   |                          |                            |
|    |                              |          |   |                          |                            |
|    |                              |          |   |                          |                            |

|    |  |  |  |  |  |
|----|--|--|--|--|--|
|    |  |  |  |  |  |
| 5. |  |  |  |  |  |
|    |  |  |  |  |  |
|    |  |  |  |  |  |
| 6. |  |  |  |  |  |
|    |  |  |  |  |  |
|    |  |  |  |  |  |

**13. Description of Available Forest Resources**

| SN | Name of the Forest | Type | Location | Name of the major Forest Products Present | Annual harvest ( if any) | Market Price /KG/Cft/piece |
|----|--------------------|------|----------|---|--------------------------|----------------------------|
| 1. |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
| 2. |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
| 3. |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
| 4. |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
| 5. |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
| 6. |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |
|    |                    |      |          |   |                          |                            |

**14. Description of Mineral Resources**

| SN | Name of Minerals | Location | Annual extraction( if any) | Market Price /KG/piece |
|----|------------------|----------|----------------------------|------------------------|
| 1. |                  |          |                            |                        |
| 2. |                  |          |                            |                        |
| 3. |                  |          |                            |                        |
| 4. |                  |          |                            |                        |
| 5. |                  |          |                            |                        |

**15. Educational Institutions (schools) in the VDC**

| SN | Name of the School | Type | Level | No. of Teacher |        | No. of Students |      |
|----|--------------------|------|-------|----------------|--------|-----------------|------|
|    |                    |      |       | Male           | Female | Boy             | Girl |
| 1. |                    |      |       |                |        |                 |      |
| 2. |                    |      |       |                |        |                 |      |
| 3. |                    |      |       |                |        |                 |      |
| 4. |                    |      |       |                |        |                 |      |

|    |  |  |  |  |  |  |  |
|----|--|--|--|--|--|--|--|
| 5. |  |  |  |  |  |  |  |
| 6. |  |  |  |  |  |  |  |
| 7. |  |  |  |  |  |  |  |
| 8. |  |  |  |  |  |  |  |

Note: Type= Government, Private, community, other (if applicable)

### 16. Health Care Facilities

| Health Care Facilities     | No. | Remarks |
|----------------------------|-----|---------|
| Hospitals                  |     |         |
| Primary Health Care Centre |     |         |
| Health Post                |     |         |
| Sub-Health Post            |     |         |
| PHC Outreach Clinic        |     |         |
| EPI Clinic                 |     |         |
| NGO/INGO & Private Sector  |     |         |
| Traditional Healing Centre |     |         |
|                            |     |         |

### 17. Facilities of Development Infrastructures

| Development Infrastructure Facilities | No. | Name if applicable |
|---------------------------------------|-----|--------------------|
| Telephone                             |     |                    |
| Post office                           |     |                    |
| Agriculture Service centre            |     |                    |
| Livestock service centre              |     |                    |
| Micro hydro                           |     |                    |
| Peltic set                            |     |                    |
| Solar                                 |     |                    |
| Cottage industries                    |     |                    |
| Market Centers                        |     |                    |
| Financial Cooperatives                |     |                    |
| Bank and finance Companies            |     |                    |
| Other                                 |     |                    |

### 18. NGOs, User Groups and Organizations of Civil Societies

| Organizations of Civil Societies | No. | Functional Status | Name if applicable |
|----------------------------------|-----|-------------------|--------------------|
| (I)NGOs/CBOs                     |     |                   |                    |
| Community Forest User groups     |     |                   |                    |
| Water User Groups                |     |                   |                    |
| Small Farmer Groups              |     |                   |                    |
| Ethnic Association               |     |                   |                    |
| Women/Mother organization        |     |                   |                    |
| Youth Club                       |     |                   |                    |
| Kabeli Sarokar Samuha ( If any)  |     |                   |                    |
| Other                            |     |                   |                    |

### 19. Major Fest and Festivals Celebrated

| SN | Name of Fest and Festivals | Celebrated Mainly by (Caste/ethnic group) | Remarks |
|----|----------------------------|---|---------|
| 1. |                            |   |         |
| 2. |                            |   |         |
| 3. |                            |   |         |
| 4. |                            |   |         |
| 5. |                            |   |         |
| 6. |                            |   |         |
| 7. |                            |   |         |

**20. Major God and Goddess Worshiped**

| SN | Name of God and Goddess | Worshiped Mainly by (Caste/ethnic group) | Project impacts ? |
|----|-------------------------|--|-------------------|
| 1. |                         |  |                   |
| 2. |                         |  |                   |
| 3. |                         |  |                   |
| 4. |                         |  |                   |
| 5. |                         |  |                   |
| 6. |                         |  |                   |
| 7. |                         |  |                   |

**21. Places or landscape of cultural, religious, historical and archaeological importance**

| SN | Name of the place/Landscape | Location | Importance | Project impacts ? |
|----|-----------------------------|----------|------------|-------------------|
| 1. |                             |          |            |                   |
| 2. |                             |          |            |                   |
| 3. |                             |          |            |                   |
| 4. |                             |          |            |                   |
| 5. |                             |          |            |                   |
| 6. |                             |          |            |                   |
| 7. |                             |          |            |                   |
| 8. |                             |          |            |                   |

**22. Strength and Weakness of the project**

| SN | Strengths | SN | Weakness |
|----|-----------|----|----------|
| 1. |           | 1  |          |
| 2. |           | 2  |          |
| 3. |           | 3  |          |
| 4. |           | 4  |          |

**23. Suggestions to make the project appropriate socially, culturally and local people friendly**

- 1.
- 2.
- 3
- 4.

**24. Social and Family Decision Making Role of Men and Women**

| SN  | Types of family and social decisions   | Men | Women | Both | Dominant Trend by Group |
|-----|--|-----|-------|------|-------------------------|
| 1.  | Land Purchase and Sale                 |     |       |      |                         |
| 2.  | Land ownership                         |     |       |      |                         |
| 3.  | Choice of crops and plants             |     |       |      |                         |
| 4.  | Child care                             |     |       |      |                         |
| 5.  | Children education                     |     |       |      |                         |
| 5.  | Water Fetching                         |     |       |      |                         |
| 6.  | Caring and rearing of animal and birds |     |       |      |                         |
| 7.  | Washing clothes                        |     |       |      |                         |
| 8.  | Daily Household expenditure            |     |       |      |                         |
| 9.  | Marriage of Children                   |     |       |      |                         |
| 10. | Birth of new baby                      |     |       |      |                         |
| 11. | Public meeting participation           |     |       |      |                         |
| 12  | Cash and valuable control and disposal |     |       |      |                         |
| 13. | Plowing                                |     |       |      |                         |
| 14. | Roofing                                |     |       |      |                         |
| 15. | Decision on new and first initiation   |     |       |      |                         |
| 16. | Hospitality for guest                  |     |       |      |                         |
| 17  | Cooking                                |     |       |      |                         |
| 18  | Washing Dishes                         |     |       |      |                         |
| 19  | Others                                 |     |       |      |                         |

**25. Details of the Project Impacts Perceived by Local People and Corresponding Mitigation Measures**

| SN | Impacts on               | Details             | Location | Type (dimension) of the Impact (+Ve or -Ve) | Extent (severe, moderate, minimum) | Main Recipient (caste/ethnic group) of the impact | Suggestions for Mitigation measures |
|----|--------------------------|---------------------|----------|---|------------------------------------|---|-------------------------------------|
| 1  | Infrastructure           | school              |          |   |                                    |   |                                     |
|    |                          | road                |          |   |                                    |   |                                     |
|    |                          | bridge              |          |   |                                    |   |                                     |
|    |                          | Health post         |          |   |                                    |   |                                     |
| 2  | Community resources      | Quarries            |          |   |                                    |   |                                     |
|    |                          | Minerals            |          |   |                                    |   |                                     |
|    |                          | forests             |          |   |                                    |   |                                     |
| 3  | Livelihood               | Fishing             |          |   |                                    |   |                                     |
|    |                          | Collection of NTFPs |          |   |                                    |   |                                     |
| 4. | Health and sanitation    |                     |          |   |                                    |   |                                     |
| 5. | Social and cultural life |                     |          |   |                                    |   |                                     |
|    |                          |                     |          |   |                                    |   |                                     |
| 6. | Natural Resources        |                     |          |   |                                    |   |                                     |



|    |                             |  |  |  |  |  |  |
|----|-----------------------------|--|--|--|--|--|--|
| 7. | Food Security               |  |  |  |  |  |  |
| 8. | Market price of commodities |  |  |  |  |  |  |
| 9. | Other Specify               |  |  |  |  |  |  |
|    |                             |  |  |  |  |  |  |

**26. Local Development Need Identification and their Corresponding Priorities**

| SN | Needs of local development | Prioritization of Needs | Prioritization of Group (for whom) | Location or name of the settlement/ward No. |
|----|----------------------------|-------------------------|------------------------------------|---|
| 1  | Electrification            | 11                      |                                    |   |
| 2  | Drinking Water             | 10                      |                                    |   |
| 3  | Employment                 | 9                       |                                    |   |
| 4  | Soft Loan                  | 8                       |                                    |   |
| 5  | Skill development training | 7                       |                                    |   |
| 6  | Income generation program  | 6                       |                                    |   |
| 7  | Share Investment           | 5                       |                                    |   |
| 8  | Health post                | 4                       |                                    |   |
| 9  | School                     | 3                       |                                    |   |
| 10 | Road                       | 2                       |                                    |   |
| 11 | Herb processing            | 1                       |                                    |   |
|    |                            |                         |                                    |   |

**27. Further Comments and Suggestions of the Participants**

**ANNEX D**

**SUMMARY OF FOCUS GROUP DISCUSSIONS**

**KABELI-A HYDROELECTRIC PROJECT**  
**SA STUDY**

JULY 2013

## Summary of the FGD findings

A total of 14 FGDs with the local people have been conducted in different location of the project areas to identify the various issues related to the hydropower project development and its socioeconomic consequences and corresponding mitigation measures. A total of 251 individuals of representing different impact areas and groups such as dam site, dewatering zone, access road, powerhouse site, CFUG, LFUG, Dalits, Indigenous Peoples (IPs) and women participated in the FGDs. Out of the 14 FGDs, 2 were with women, 1 with Dalit, 3 with IPs, 1 with Kabeli Concern Committee, 1 with CFUG, 1 with LFUG, 1 with local school teachers and the rest 4 FGDs were conducted with mixed group comprising of male, female, IPs, Dalit, Bahun, Chhetri and so on.

Land acquisition and mode of compensation, livelihood related issues due to the loss of land, dewatering, prior information dissemination practices, ILO 169 and rights of the IPs, rural electrification, current uses of Kabeli river, perceptions towards project, socio-cultural practices associated with River Kabeli, local development needs, likely impacts due to the various project structures and corresponding mitigation measures were the major issues discussed during the FGDs. The participants freely discussed on the issues and expressed their ideas, views, suggestion, and comments on the various components of the project. The moderator (study team member) introduced the issues and agendas of the discussion and kept the discussion going, and tried to prevent domination of the discussion by a few participants.

| SN | FGDs and Consultation Meetings Held  | Date       | Participants |    |                 |    |       |  |                  |                                 |       |
|----|--|------------|--------------|----|-----------------|----|-------|--|------------------|---------------------------------|-------|
|    |  |            | Sex          |    | Caste/Ethnicity |    |       | Occupation                               |                  |                                 | Total |
|    |  |            | M            | F  | Br/Ch           | IP | Dalit | Primarily farming +supplementary fishing | Job and business | Other (leaders, school teacher) |       |
| 1  | Amarpur-6, Women   | 30/09/2010 | -            | 14 | 14              | -  |       | 14                                       |                  |                                 | 14    |
| 2  | Thechambu-5, Downstream community  | 01/10/2010 | 14           | 02 | 03              | 13 | -     | 07                                       | 04               | 05                              | 16    |
| 3  | Amarpur-6 Community Forest   | 02/10/2010 | 25           | 01 | 12              | 13 | 01    | 24                                       | -                | 02                              | 26    |
| 4  | Amarpur-8, Downstream community  | 03/10/2010 | 11           | 07 | 07              | 08 | 03    | 18                                       |                  |                                 | 18    |
| 5  | Amarpur-6 Kabeli Concern Group   | 04/10/2010 | 22           | -  | 13              | 09 | -     | 18                                       |                  | 04                              | 22    |
| 6  | Amarpur-9, Pinase affected communities of Panchami VDC                                   | 05/10/2010 | 21           | 03 | 08              | 15 | 01    | 23                                       | -                | -                               | 23    |
| 7  | Amarpur-9, Pinase affected Majhi indigenous community and Leasehold forests, Amarpur VDC | 05/10/2010 | 11           | 06 | 01              | 16 | -     | 17                                       |                  |                                 | 17    |
| 8  | Nangkholyang-5, affected communities   | 07/10/2010 | 27           | 11 | 10              | 28 | -     | 25                                       | 05               | 08                              | 38    |

|    |  |            |            |           |           |            |           |            |           |           |            |
|----|--|------------|------------|-----------|-----------|------------|-----------|------------|-----------|-----------|------------|
| 9  | Nangkholyang-5, School teachers  | 21/10/2010 | 06         | -         | 03        | 03         |           |            |           | 06        | 06         |
| 10 | Thechambu-5 Indigenous peoples and VDC representatives                 | 08/10/2010 | 25         | 02        | 05        | 21         | 01        | 21         | 06        | -         | 27         |
| 11 | Thechambu-5 women group  | 08/10/2010 |            | 07        | 01        | 06         |           | 07         |           |           | 07         |
| 12 | Amarpur-6, Indigenous peoples of four affected VDCs                    | 08/10/2010 | 19         | -         | 01        | 18         |           | 15         | 03        | 2         | 20         |
| 13 | Dalit people of Amerpur VDC  | 09/10/2010 | 7          | 3         |           |            | 10        | 8          | 2         |           | 10         |
| 14 | Amarpur-9 Pinase, Consultation Meeting with Majhi Indigenous Community | 05/10/2010 | 10         | 7         |           | 17         |           | 17         |           |           | 17         |
|    | <b>Total</b>   |            | <b>188</b> | <b>63</b> | <b>78</b> | <b>167</b> | <b>16</b> | <b>214</b> | <b>20</b> | <b>27</b> | <b>251</b> |

\*M=Male, F=Female, Br=Brahmin, Ch=Chettri, IP=Indigenous People

### Focus Group Discussion with the Representatives of the Project Affected VDCs of Taplejung and Panchthar Districts

The FGD meeting was organized by the SA consulting team by giving a prior verbal notice through a runner to the entire project affected VDCs. The main objectives of FGD were to collect information on socio-cultural landscapes, human-environment interactions, and livelihood practices, the views of local people towards the project, their perceptions, aspirations and expectations. FGDs were organized to collect the information on local development and their felt needs, their roles on project implementation, possible mitigation measures and institutional arrangements. Separate FGDs were organized for indigenous peoples, women, *Dalits* and affected households and other marginalized groups as they may have different agendas, interests and aspirations than the dominant groups. The following table gives the details of FGDs and consultation meeting conducted. However, the purpose of the focus group discussion meeting was:

- To provide factual information on the project location, particularly the main project structures such as dam, tunnel, adit portals, powerhouse, surge tank, tailrace and the project access roads besides tentative locations of the quarry sites, construction camps and operation camps of the project.
- To clarify the objective of the Project SA and its procedures
- To provide potential impacts of the project from technical considerations during project construction and operation in the project area's physical, biological, social, socio-economic and cultural domain.
- To collect information on the project areas physical, biological and socio-economic and cultural environments from the local peoples' perspective

- To collect opinion of the people on the project
- To get feedback on the potential impacts of the project in the eyes of the local people particularly on the local infrastructure, social norms and culture and on the physical and biological environments
- To solicit opinion of the local people on the alternative mitigation measures to abate, or avoid the potential impacts
- To solicit opinion of the local people with regard to the development aspiration of the project.

The focus group discussion meetings were non-formal meetings. The meetings started with the consent of the members present. To start the meeting, lead member of the consulting team first introduced the consulting members with a note on the objective of the meeting. Then the project layout and its different components and their physical location in the field were explained with details of the type of construction and operation activities of the project. Then the forum was opened for public debate on the different issues.

**Community/groups Consulted:** Downstream community

**Venue:** Amarpur-8, Anpegaund (Simle)

**Date:** 17 Ashoj, 2067 (October 03, 2010)

**Summary of the FGD:**

| <b>Perception towards the project:</b> Local people are positive towards the project. |                                  |   |   |
|---|----------------------------------|---|---|
| <b>Major themes and issues discussed</b>  |                                  | <b>Major themes and issues raised</b>   | <b>Suggested mitigation measures/expectations</b>   |
| <b>Baseline information</b>   | Demographic                      | Most of the downstream communities partially dependent on fisheries are Indigenous peoples and <i>Jogi</i> .  |   |
|   | Socio-cultural                   |   |   |
|   | Settlement pattern               | Scattered, thatched roof house, more slope village  |   |
|   | Access to natural resources      | Easy access   |   |
|   | Others                           | <ul style="list-style-type: none"> <li>Some of the household of <i>JogiDanda</i> can sustain for only 2 months on their farming production</li> <li>But the households of <i>Anpegaunda</i> won at least 5 to 6 <i>Ropani</i> (0.25-0.30 ha) land and they can sustain for 5 to 6 months on their production</li> <li>No one employed in civil service/army/policy</li> <li>Downstream communities lack socio, economic and political power to seek development benefits</li> </ul> |   |
| <b>Development infrastructure</b>   | Schools                          | High schools are located at distance  | Support schools   |
|   | Health and sanitation            | Health posts are located at distance (about 2 hrs walk). Common disease diarrhea, fever, Uterus prolepsis, gastric etc. The health posts can be characterized as frequently incompletely staffed and poorly equipped. People have toilet facility   | Support health posts  |
|   | Drinking water                   | Severe problem of drinking water  | Support supply of drinking water.   |
|   | Transportation and communication | No link road to Mechi Highway, no transportation facilities to hospital, and school. Availability of CDMA but not properly functioning  |   |
|   | Irrigation                       | Most of the farmers depend on rain as their source of irrigation  | Support irrigation. According to the participants " <i>Siyakhola</i> " will be appropriate source of irrigation which is already surveyed for the same purpose. |

|   |                           |  |  |
|---|---------------------------|--|--|
|   | Energy use                | Firewood, and kerosene   | Rural electrification.   |
|   | Electricity               | No electricity from national grid  | Rural electrification.   |
|   | Security                  | Satisfactory   |  |
| <b>Impacts on Livelihood</b>                | Impact on fishery         | Animal rearing has also supported household expenditures. Kabeli River is used as a source of drinking water for animal, and for recreational fishing by downstream communities..  | Support livelihood restoration of affected communities through employment, skill training and capacity development<br><br>Recognizing livelihoods rights as prerequisites. |
|   | Loss of agricultural land |  |  |
|   | Loss of forest land       |  |  |
| <b>Impacts on other</b>                     | Cultural Heritage         | <i>Shiva</i> temple is located at the bank of Kabeli river. Ritual performances are likely to be affected due to low flow of water in the dry season.  | Minimum flow for cultural and religious survival.  |
|   | Cremation sites           | Adverse impacts in cremation sites and religious activities in the dry season due to low flow of water.  | Minimum flow for cultural and religious survival.  |
|   | Rituals                   | <u>Rituals and customary use of flora and fauna:</u> Hindu <i>Brahmins/Chhetris</i> and non-Hindu have a ritual of purification obtained by bathing in the holy river-Kabeli. Worship Kabeli <i>Ganga</i> in every religious day like <i>Aushi, Kuse Aushi, Matatirtha</i> . Affected communities repeatedly raised the concerns that the construction of dam will have impacts on religious activities. | Minimum flow for cultural and religious survival.  |
|   | Religion                  | <u>Holiness of the river:</u> They respect Kabeli as a holy river and they called it <i>Kebli Ganga</i> . Hindu pilgrims from the surrounding Districts and VDCs come to take religious bath ( <i>Makkar</i> ) in January/February every year.   | Minimum flow for cultural and religious survival.  |
|   | Downstream ecosystem      | The impacts of blocking the river may change on downstream ecosystem including effects on riparian plant-life, decline of fish and other aquatic species.  | Minimum flow for downstream ecosystem.   |
| <b>Beneficial impacts</b>                   |                           | Electricity, employment, economic activities etc.  |  |
| <b>Local development needs and priority</b> |                           | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Drinking water</li> <li>3. Irrigation and development of scientific agriculture system</li> <li>4. Electricity and link roads</li> <li>5. Support to health post and schools</li> </ol>   |  |

**Community/groups Consulted:** Community Forest User Groups-Thulodhuseni Community Forest and Panchakholi Community Forest

**Venue:** Amarpur-6, Rajabesi

**Date:** 16 Ashoj, 2067 (October 02, 2010)

**Summary of the FGD:**

| Perception towards the project: All participants are positives towards the project. |  |  |  |
|---|--|--|--|
| Major themes and issues discussed   | Major themes and issues raised   | Suggested mitigation measures/expectations   |  |
| <b>Baseline information</b>   | <b>Thulodhuseni Community Forest Amarpur-6, Panchthar</b> <ul style="list-style-type: none"> <li>Area: 19 ha</li> <li>User Households: 135</li> <li>Population: 135*6= 810 (approximately)</li> <li>Ethnic Composition: <i>Tamang</i> in majority (an indigenous community)</li> </ul> |  |  |
|   | <b>Panchakanya Kholi Community Forest Amarpur-5 Panchthar</b> <ul style="list-style-type: none"> <li>Area:</li> <li>User Households: 227</li> <li>Population: 227*6=1362</li> <li>Ethnic Composition: Mixed</li> </ul>   |  |  |
| <b>Development infrastructure</b>   | Schools  | High schools are located at distance and lack infrastructures. Schools are being run by community through donation from each household.  | Support schools  |
|   | Health and sanitation  | Common disease diarrhea, fever, Uterus proleptis, gastric etc. Health posts are incompletely staffed and poorly equipped. Majority of population have toilet facility                                    | Support heath posts  |
|   | Drinking water   | Severe problem of drinking water. Most of the household fetch water from natural stream or creeks.   | Support supply of drinking water.                                |
|   | Transportation and communication   | No link road to Mechi Highway, no transportation facilities to hospital, and school. Availability of CDMA and NCell mobile network but not properly functioning and are concentrated in the market area. | Support link road construction in assistance with the villagers. |
|   | Irrigation   | Most of the farmers depend on rain as their source of irrigation.  | Support irrigation   |
|   | Energy use   | Firewood and Kerosene  | Rural electrification  |
|   | Electricity  | No electricity from national grid. Some elites have managed solar system at their homes.   | Rural electrification  |
| Security  | Satisfactory   |  |  |



|                                     |   |   |   |
|-------------------------------------|---|---|---|
| <p><b>Impacts on Livelihood</b></p> | <p>Possible loss of forest land and NTFPs</p> | <p>Forest clearances will impact the forest dependent people on various ways. Households dependent in the CFs mainly collect NTFPs, fire wood, agricultural tools, dry hay, fodder, cut branches, weeds etc. In average, 50 bundles of fodder are collected from each CFs per day. Similarly, 10 bundle of firewood in average is collected by each family annually from each CFs. A household has to pay Rs. 2 per bundle of firewood as tax. The community user groups have created a "Fund" of collected tax and support to the vulnerable groups in the time of need.</p> <p><b>Herbs found:</b> <i>Kali Jhar, Amala, Harrow, Barrow, Kurilo, Jhyau, Titepati, Ban Lasun, Ban Tarul, Bhyakur, Gujurgana, Harchur, Chyau, Timur, Chabo, Simali</i>, etc., but these are not extensively used in daily life.</p>  | <ul style="list-style-type: none"> <li>• Provisions of programs for plantation, with protection and conservation of flora and fauna species.</li> <li>• Awareness raising programs</li> <li>• Education on possible impacts and mitigation measures</li> <li>• Support livelihood restoration of affected households through employment, skill training and capacity development</li> </ul> |
| <p><b>Impacts on other</b></p>      | <p>Cultural Heritage</p>                      | <p><i>Shiva</i> temple is located at the bank of Kabeli river. Ritual performances are likely to be affected due to low flow of water in the dry season.</p>  | <p>Minimum flow for cultural and religious survival</p>   |
|                                     | <p>Cremation sites</p>                        | <p>Adverse impacts in cremation sites and activities in the dry season due to low flow of water.</p>  | <p>Minimum flow for cultural and religious survival.</p>  |
|                                     | <p>Rituals</p>                                | <p><u>Rituals and customary use of flora and fauna:</u></p> <ul style="list-style-type: none"> <li>• <i>Totela 'N'</i>, <i>Kokomdu 'T'</i> and <i>Mephe 'L'</i> has a high ritual and cultural values for <i>Tamang</i> and <i>Limbu</i> indigenous groups. They use <i>Kokomdu</i> in every life cycle ritual. Similarly <i>Jhakri Syaula</i> is fundamental for <i>Tamang</i> shaman.</li> <li>• <i>Harro</i> and <i>Barro</i> are used in offering god and goddess especially by Hindu people. Brahmin/Chhetri make use of <i>Totela 'N'</i> while worshipping "Saguni deity" in Dashain festival. Similarly, <i>Kush</i>, <i>Dattiwani</i> and <i>Siwali</i> are religious herb/plants that are required in Hindu cultures and worshipping.</li> <li>• A climber plant called "<i>Bhorla</i>" whose leaves are used for making leaf plates (<i>Duna Tapari 'N'</i>) for rituals and pujas of Hindu</li> </ul> | <p>Minimum flow for cultural and religious survival.</p>  |
|                                     | <p>Religion</p>                               | <p><u>Holiness of the river:</u> They respect Kabeli as a holy river and they called it <i>Kebli Ganga</i>. Hindu pilgrims from the surrounding Districts and VDCs come to take religious bath (<i>Makkar</i>) in January/February every year.</p>  | <p>Minimum flow for cultural and religious survival.</p>  |

|  |                                    |  |  |
|--|------------------------------------|--|--|
|  | Downstream ecosystem               | The impacts of blocking the river may involve changes on downstream ecosystem including effects on riparian plant-life, decline of fish and other aquatic species.   | Minimum flow for downstream ecosystem. |
|  | Free Prior Informed Consent (FPIC) | Full information before construction activities  |  |
| <b>Information, participation, and Institutional arrangement</b> | Institutional arrangement          | Kabeli Concern Committee   |  |
|  |                                    | Electricity, employment, economic activities etc.  |  |
| <b>Beneficial impacts</b>  |                                    | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Drinking water</li> <li>3. Irrigation and development of scientific agriculture system</li> <li>4. Electricity and link roads</li> <li>5. Support to health post and schools</li> </ol> |  |
| <b>Local development needs and priority</b>                      |                                    |  |  |

**Community/groups Consulted: Downstream affected communities Thechambu, Nangkholyang and Amarpur VDCs**

**Venue: Thechambu-6, Kabeli Bank**

**Date: 15 Ashoj, 2067** (October 01, 2010)

| <b>Perception towards the project:</b> Local people are positive towards the implementation of the project |                                  |   |  |
|--|----------------------------------|---|--|
| <b>Major themes and issues discussed</b>   |                                  | <b>Major themes and issues raised</b>   | <b>Suggested mitigation measures/expectations</b>  |
| <b>Baseline information</b>  | Demographic                      | Most of the downstream communities are Indigenous peoples and <i>Jogi</i> . Among them <i>Limbu and Rai</i> are dominant groups.  |  |
|  | Socio-cultural                   |   |  |
|  | Settlement pattern               | Scattered, thatched roof house, more slope village  |  |
|  | Access to natural resources      | Easy access   |  |
|  | Others                           | <ul style="list-style-type: none"> <li>Some family members collect sand and gravel in the summer season from the Kabeli River for six months (March to September). Fishing is major contributor of protein supplement.</li> <li>Women are in majority in these households.</li> </ul> |  |
| <b>Development infrastructure</b>  | Schools                          | High schools are located at distance and it lack infrastructures. Schools are being run by community through donation from each household.  | Support schools  |
|  | Health and sanitation            | Common diseases are diarrhea, fever, Uterus proleptis, gastric etc. Health posts are incompletely staffed and poorly equipped. People have no toilet facility and defecate in open area.  | Support health posts   |
|  | Drinking water                   | Severe problem of drinking water. Most of the household fetch water from natural stream or creeks.  | Support supply of drinking water.  |
|  | Transportation and communication | No link road to Mechi Highway, no transportation facilities to hospital, and school. Availability of CDMA but not properly functioning.   | Assist construction of rural motorable road linking to Mechi Highway with joint effort of community and the project. |
|  | Irrigation                       | Most of the farmers depend on rain as their source of irrigation.   | Support irrigation.  |
|  | Energy use                       | Firewood and Kerosene. Firewood mostly collected from the private and community forests.  | Rural electrification  |
|  | Electricity                      | No electricity from national grid   | Rural electrification  |

|                              |                     |   |   |
|------------------------------|---------------------|---|---|
|                              | Security            | Satisfactory  |   |
| <b>Impacts on Livelihood</b> | Loss of fishing     | Kabeli river is used as source of drinking water for animals, and recreational fishing for most of the villagers. Fish species found in the Kabeli river are (14): <i>Asala, Katle, Sar, Tite, Bam, Kabre, Buduna, Lohori, Siyo, Gardi, Dhotre, Faketa, Thema, Jalkapur</i> . Other aquatic lives are (6): <i>Paha, Gangata, Jalayo, Panihas</i> , and Snake. These fish and aquatic life may decline due to low flow of water. | Support livelihood restoration of affected communities through employment, skill training and capacity development.<br><br>Recognizing livelihoods rights as prerequisites.<br><br>Special programs for affected community. |
|                              | Possible disasters  | There is a risk of flood and other disasters due to possible damage on dam and altering the flow.   | Provision of rescue and mitigation plan for possible disaster.  |
|                              | Loss of forest land |   |   |
| <b>Impacts on other</b>      | Cultural Heritage   | <i>Shiva</i> temple is located at the bank of Kabeli river. Ritual performances are likely to be affected due to low flow of water in the dry season.   | Minimum flow for cultural and religious survival.   |
|                              | Cremation sites     | Adverse impacts in cremation sties and religious activities in the dry season due to low flow of water. Blocking the river will leave adverse impact on the downstream cremation sites which are serving the project VDCs.  | Minimum flow for cultural and religious survival.   |
|                              | Rituals             | <u>Rituals and customary use of flora and fauna:</u> Hindu <i>Brahmins/Chhetris</i> and non-Hindu have a ritual of purification obtained by bathing in the holy river-Kabeli. Worship Kabeli <i>Ganga</i> in every religious day like <i>Aushi, Kuse Aushi, Matatirtha</i> . Affected communities repeatedly raised the concerns that the construction of dam will have impacts on religious activities.                        | Minimum flow for cultural and religious survival.   |
|                              | Religion            | <u>Holiness of the river:</u> They respect Kabeli as a holly river and we call Kebli <i>Ganga</i> . Hindu pilgrims from the surrounding Districts and VDCs come to take religious bath (Makkar) in January/February every year.   | Minimum flow for cultural and religious survival.   |
|                              | Women and children  | Women dependent on river activities are likely to suffer  |   |
|                              | Downstream          | The impacts of blocking the river may involve changes on  | Minimum flow for downstream   |

|  |                               |   |   |
|--|-------------------------------|---|---|
|  | ecosystem                     | downstream ecosystem including effects on riparian plant-life, decline of fish and other aquatic species.   | ecosystem.  |
| <b>Indigenous peoples</b>  | Rituals and cultural heritage | <u>Rituals and customary use of fish</u> : Impacts on cultural life of indigenous peoples such as <i>Asala</i> (Trout) and <i>Tite</i> (Stone carp) fish ritually required for <i>Limbu</i> and <i>Rai</i> indigenous communities. <i>Gali sarap</i> ritual associated with Kabeli river practiced by <i>Limbu</i> community. | Cultural Flow Release will be the best way to meet the cultural needs of the indigenous and local people. |
| <b>Information, participation, and Institutional arrangement</b> | FPIC                          | Full information  |   |
|  | Institutional arrangement     | Community participation, consultation and major issues related with the project and communities will be dealt through Kabeli Concern Group.   |   |
| <b>Beneficial impacts</b>  |                               | Electricity, employment, economic activities etc.   |   |
| <b>Local development needs and priority</b>                      |                               | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Drinking water</li> <li>3. Irrigation and development of scientific agriculture system</li> <li>4. Electricity and link roads</li> <li>5. Support to health post and schools</li> </ol>  |   |

**Community/groups Consulted: Indigenous communities Thechambu VDC, Taplejung**

**Venue: Shree Chandeshowri Primary School, Thechambu-5, Khemkham, Taplejung**

**Date: 22 Ashoj, 2067** (October 08, 2010)

| <b>Perception towards the project:</b> All participants are positives towards the project. |                                  |  |  |
|--|----------------------------------|--|--|
| <b>Major themes and issues discussed</b>   |                                  | <b>Major themes and issues raised</b>  | <b>Suggested mitigation measures/expectations</b>  |
| <b>Baseline information</b>  | Demographic                      | <i>Limbu</i> is the dominant group in Thechambu VDC. Second dominant group is <i>Brahman/Chhetri</i> .                             |  |
|  | Socio-cultural                   |  |  |
|  | Settlement pattern               | Scattered, thatched roof house, more slope village   |  |
|  | Access to natural resources      | Easy access  |  |
| <b>Development infrastructure</b>  | Drinking water                   | Severe problem of drinking water. Most of the household fetch water from natural stream or creeks.                                 | Support supply of drinking water.  |
|  | Transportation and communication | No link road to Mechi Highway. Availability of CDMA but not properly functioning.  | Assist rural motorable road with joint effort-community and the project linking to Mechi Highway   |
|  | Irrigation                       | Most of the farmers depend on rain as their source of irrigation.  | Support irrigation.  |
|  | Energy use                       | Firewood and Kerosene. Firewood mostly collected from the private and community forests.   | Rural electrification  |
|  | Electricity                      | No electricity from national grid  | Rural electrification  |
|  | Security                         | Satisfactory   |  |
| <b>Impacts on Livelihood</b>   | Loss of fishing                  | There some households in the downstream from ward no. 4, 5, 7 and 8 who depend on river activities for their supplementary income. | Support livelihood restoration of affected communities through employment, skill training and capacity development.<br><br>Recognizing livelihoods rights as prerequisites.<br><br>Special programs for affected households. |

|                           |                           |  |   |
|---------------------------|---------------------------|--|---|
|                           | Loss of agricultural land | <u>Loss of land:</u> Acquisition of agricultural land for the construction of the project  |   |
|                           | Loss of forest land       | <u>Loss of forest:</u> Quarry site may impact the Private forests  |   |
|                           | Mode of compensation      | Affected land should be evaluated in the participation and consent of affected households, representatives of Concern group and local people. In other words, a committee or body should be formed representing the local people, affected households and the proponent. This committee will evaluate the land and determine the cost. Much land was not registered during the cadastral of 2032 in fear of owner's need to pay more land tax. But it is mentioned in <i>Sat Number Fatwari</i> (a legal document that was in force before cadastral map). Therefore, the project has to compensate the land traditionally occupied and reflected in the <i>Sat Namber Fatwari</i> but not in the cadastral map. |   |
|                           | Downstream ecosystem      | <u>Downstream ecosystem:</u> The blocking of the river may changes the downstream ecosystem including effects on riverine and riparian plant-life, decline of fish and other aquatic species.  | Minimum flow for downstream ecosystem.  |
| <b>Impacts on other</b>   | Cremation sites           | <u>Cremation sites:</u> Adverse impacts in the cremation sties and the religious activities in the dry season due to low flow of water. The impact can be felt mostly at the cremation site of Kabeli, which is commonly used not only by Thechambu but also by other VDCs.  | Minimum flow for cultural and religious survival  |
|                           | Rituals                   | <i>Limbu</i> indigenous community have some fundamental ritual practices like <i>Nuwagi</i> , clan deity etc. that require <i>Asala</i> fish (very fresh). Therefore, blocking the river will have negative implication for the customary use.   | Minimum flow for cultural and religious survival  |
|                           | Language                  |  |   |
|                           | Religion                  | <u>Holiness of the river:</u> They respect Kabeli as a holly river and we call <i>Kebli Ganga</i> . Hindu pilgrims from the surrounding Districts and VDCs come to take religious bath ( <i>Makkar</i> ) in January/February every year.   | Minimum flow for cultural and religious survival  |
|                           | Health and sanitation     |  |   |
|                           | Women and children        |  |   |
| <b>Indigenous peoples</b> | Land and territory        | <u>Land and territory:</u> Their culture, way of life, folklore, religious practices are inextricably linked with their relationship with this land and territory and nature.<br><u>Traditional ownership of land:</u> We some 10 HHs hold traditional ownership over the land and forest in the upstream zone. Such land and forests should be evaluated  | Respect the traditional ownership of land<br><br>Provisions of special programs for preservation and protection of indigenous culture |

|  |                               |   |   |
|--|-------------------------------|---|---|
|  |                               | in the participation and consent of affected households, representatives of Concern group and local people. In other words, Much land area was not registered during the cadastral of 2032 in fear of owner's need to pay more land tax but is mentioned in <i>Sat Number Fatwari</i> (a legal document that was in force before cadastral map). Therefore, the project has to compensate the land traditionally occupied and reflected in the <i>Sat Number Fatwari</i> but not in the cadastralmap. | Respect indigenous peoples rights   |
|  | Rituals and cultural heritage | <u>Rituals and customary use of fish</u> : Impacts on cultural life of indigenous peoples such as <i>Asala</i> and <i>Tite</i> fish ritually required for <i>Limbu</i> and <i>Rai</i> indigenous communities. <i>Gali sarap</i> ritual associated with Kabeli river practiced by <i>Limbu</i> community.  | Cultural Flow Release (CFR) will be the best way to meet the cultural needs of the indigenous and local people. |
|  | Self-identity                 | <u>Self-identity</u> : They call themselves <i>Limbu</i> , or <i>Subba</i> or <i>Yakthumba</i> . But at the local level, they are mostly know from their clan name such <i>Mannyanbo</i> in Thechambu, <i>Khimding</i> in Nangkholyan etc.  | Programs for protection and preservation of self identity.  |
|  | Natural resources             | Still <i>Subbas</i> of Thechambu collect <i>Asuli</i> from the inhabitant of Amarpur (War no.2, 5, 6 and 7) for using forest of Thechambu,  | Respect indigenous peoples rights. Recognize traditional ownership, possession of land and natural resources.   |
| <b>Information, participation, Institutional arrangement</b> | FPIC                          | Full information. No complete information about Kabeli A hydro-project. Similarly no information on environmental impacts, impacts on cultural life, impacts on bio-diversity etc.  |   |
|  | Institutional arrangement     | Community participation, consultation and major issues related with the project and communities will be dealt through Kabeli Concern Group. For this purpose, Kabeli concern group should be capacitated and recognized with certain entitlement as the representative of the affected areas.   |   |
| <b>Beneficial impacts</b>                                    |                               | Electricity, employment, economic activities etc.   |   |
| <b>Local development needs and priority</b>                  |                               | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Drinking water</li> <li>3. Irrigation and development of scientific agriculture system</li> <li>4. Electricity and link roads</li> <li>5. Support to health post and schools</li> </ol>  |   |



**Community/groups Consulted: Kabeli Mother Saving Group Rajabesi, Amarpur Panchthar**

**Venue: Amarpur-6, Rajabesi**

**Date: 14 Ashoj, 2067** (September 30, 2010)

| Perception towards the project: All participants are positives towards the project. |                                |   |  |
|---|--------------------------------|---|--|
| Major themes and issues discussed   | Major themes and issues raised | Suggested mitigation measures/expectations  |  |
| <b>Baseline information</b>   | Demographic                    | This Amarpur VDC is dominated by women. However, female headed household are nonexistent. Girls are married between 17 to 18 years of age. Social preference goes to son while giving child birth. Mixed caste/ethnic groups. Most of the young (both male and female) migrate to different areas in search of job and employment.  |  |
|   | Socio-cultural                 |   |  |
|   | Settlement pattern             | Scattered, thatched roof house, more slope village  |  |
|   | Education and literacy         | Most women of this VDC have attended at least primary education. There is no discrimination between son and daughter on sending school. Every family sends their children to school. Most of the older women are literate through informal education. Many girls have completed SLC but are unemployed. However, we hardly find women who completed Intermediate or Bachelor's Degree but we can find many women/girls studying in these levels |  |
|   | Property ownership pattern     | Land and other family assets are owned by male. However, this pattern of property ownership is being changed i.e. now new couples started to own jointly. The property in the name of Husband will only transfer in the name of wife after his death  | Women empowerment through awareness raising programs on human rights, capacity development programs etc. |
|   | Violence Against Women (VAW):  | Women violence is severe. Women violence is fueled by alcohol, traditional perception towards women and patriarchy environment. Comparatively, the situation of single women is good. They have formed their alliance. They are not discriminated to take part in social functions, rituals and other ceremonies. But, still they have no environment to indulge freely as other women can.   | Women empowerment through awareness raising programs on human rights, capacity development programs etc. |
|   | Women Participation            | Exclusion of women in decision making process in household matters. It is nearly 70 per cent. Public  | Women empowerment program through awareness raising programs   |

|                                   |                                  |  |  |
|-----------------------------------|----------------------------------|--|--|
|                                   |                                  | participation seems to be increased but still not equal access to key role in decision making  | on human rights, capacity development programs etc.  |
| <b>Development infrastructure</b> | Schools                          | There is one Amarpur Higher Secondary School at Amarpur-4, one Singhapur Secondary School at Singhapur and a Primary School at Kabeli. The students from Rajabesi have to walk two and half hour for Higher Secondary and one and half hour for Secondary School. But, this Secondary School is being run from VDC sources and household donation. The donation is annually collected from the villagers. Households are categorized A, B and C according to household income.   | Support to local educational institutions  |
|                                   | Health and sanitation            | Common disease diarrhea, fever, Uterus proleptis , gastric etc. Health posts are frequently incompletely staffed and poorly equipped. Women suffer from Uterus proleptis diseases. Women do not like to share such diseases in their family. There is no separate consultation centre for women. Generally delivery is done at home with the help of local expert "Sudeni" (Midwife). Two health posts-one health post and another is sub-health post. For the women of Rajabesi, it takes at least 1.30 hour walk to nearest health post. No transportation facilities though there is Mechi Highway because no provisions of local transportations for local people. Health Assistance and medicine are hardly available at the time of need. Some awareness rising programs about family planning are being implemented by the VDC. Most of the women do not share their disease with their family members. | <ul style="list-style-type: none"> <li>• Need of Ambulance</li> <li>• Help to extend health services</li> <li>• Help to establish Women Consultation Centre</li> <li>• Awareness raising program focusing women's health problems</li> </ul> |
|                                   | Drinking water                   | Severe problem of drinking water especially in Ward No. 8 and 9. Most of the household fetch water from natural stream, khola or creeks and some few households fetch water from Kabeli river.   | <ul style="list-style-type: none"> <li>• Support on supply of drinking water</li> <li>• Support on protection of traditional water resources like ponds, tapes and springs</li> </ul>  |
|                                   | Transportation and communication | No link road to Mechi Highway, no transportation facilities to hospital, and school. Availability of CDMA but not properly functioning   | Assist rural motorable road with joint effort-community and the project linking to Mechi Highway   |
|                                   | Irrigation                       | Most of the farmers depend on rain as their source of irrigation   | Support irrigation.  |
|                                   | Energy use                       | Firewood and Kerosene. Firewood mostly collected from the private and community forests.   | Rural electrification  |
|                                   | Electricity                      | No electricity from national grid  | Rural electrification  |

|                              | Security<br>NGOs              | Satisfactory  |  |
|------------------------------|-------------------------------|---|--|
| <b>Impacts on Livelihood</b> | Loss of fishing               | There some households from ward no. 4, 5, 7 and 8 who collect gravel, sand and engage in occasional fishing for supplementary income.   | Support livelihood restoration of affected communities through employment, skill training and capacity development<br><br>Recognizing livelihoods rights as prerequisites.<br><br>Special programs for affected communities. |
|                              |                               |   |  |
| <b>Impacts on other</b>      | Cremation sites               | Impacts on cultural life of all communities- caste and ethnic groups  | Minimum flow for cultural and religious survival   |
|                              | Rituals                       |   | Minimum flow for cultural and religious survival   |
|                              | Religion                      |   | Minimum flow for cultural and religious survival   |
|                              | Health and sanitation         | Pollution, communicable disease, women's security will be of great concern. In this regards, women and children are the most vulnerable groups  | Awareness raising programs   |
|                              | Women and children            | Sexual abuse of women and children, exploitation and marginalization, prostitution, women trafficking, gender disparity, family partition, overload of household work etc are the possible impacts to bear by women and children. | Women empowerment through awareness raising programs on human rights, capacity development programs etc.   |
|                              | Downstream ecosystem          |   |  |
| <b>Indigenous peoples</b>    | Land and territory            |   |  |
|                              | Rituals and cultural heritage |   |  |
|                              | Self-identity                 |   |  |
|                              | Natural resources             |   |  |

|  |                           |  |  |
|--|---------------------------|--|--|
| <b>Information, participation, and Institutional arrangement</b> | FPIC                      | Full information   |  |
|  | Institutional arrangement | Women development programs should be implemented through women network.  |  |
| <b>Beneficial impacts</b>  |                           | Electricity, employment, economic activities etc.  |  |
| <b>Local development needs and priority</b>                      |                           | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Drinking water</li> <li>3. Irrigation and development of scientific agriculture system</li> <li>4. Electricity and link roads</li> <li>5. Support to health post and schools</li> </ol> |  |

**Community/groups Consulted: Indigenous nationalities of four affected VDCs –Amarpur and Panchami (Panchthar) Thechambu, and Nangkholyang (Taplejung)**

**Venue: Bijuli Bhanjyang-6, Amarpur, Panchthar**

**Date: 22 Ashoj, 2067** (October 08, 2010)

| <b>Perception towards the project:</b> All participants are positives towards the project. |                                       |   |   |
|--|---------------------------------------|---|---|
| <b>Major themes and issues discussed</b>   | <b>Major themes and issues raised</b> | <b>Suggested mitigation measures/expectations</b>   |   |
| <b>Indigenous peoples</b>  | Land and territory                    | <p><u>Land and territory:</u> The culture, way of life, folklore, religious practices are inextricably linked with their relationship with this land and territory and nature.</p> <p><i>This land and territory is where we belong – it is our forefathers' gift to us and has made us who we are. We know its ways: and the things that happened here are known and remembered, so that the stories the old people told are still alive here.</i></p> <p><i>This is the place where we know where to find all that it provides for us – food from hunting and fishing, and farms, buildings and tool materials, medicines. Also the spirits around us know us and are friendly and helpful.</i></p> <ul style="list-style-type: none"> <li>• Kipat system-Subangi</li> </ul>    | <p>Respect the traditional ownership of indigenous people over land</p> <p>Provisions of special programs for preservation and protection of indigenous cultures and literatures</p> <p>Respect indigenous peoples rights</p> |
|  | Rituals and cultural heritage         | <p><u>Rituals and customary use of flora and fauna:</u> <i>Makchiri Maklang Phung</i> (a black flower having smell), <i>Namyoba</i> (Titepati), <i>Shiru</i>, <i>Sidingba</i> (Arerikada), <i>Tongsing</i>, <i>Yukniba</i> (Harkato), <i>Sarpa Gandha</i>, <i>Ban Lasun</i>, <i>Sunkhari Phul</i> etc are ritually required plants located in the project area.</p> <p><i>Tite</i> and <i>Asala</i> fish are used in rituals. A fish named <i>Papoi</i> (<i>Limbuni Machha</i>) with which a myth is attached. Similarly, Leopards found in the dam site area related with the myth of origin of <i>Limbu</i> community.</p> <p>A special bird, <i>Chingjingna</i> (<i>Muste Chara</i>) is related with (<i>Limbu</i>) ethnic history and has a customary use in <i>Limbu</i></p> | <p>Provisions of special programs for preservation and protection of indigenous culture</p>   |

|  |                           |  |   |
|--|---------------------------|--|---|
|  |                           | rituals. This bird is found around the inundation area.  |   |
|  | Self-identity             | <ul style="list-style-type: none"> <li>• Our language, territory. Most of the places and things are named in Limbu language which later changed with Hindu meanings. For example Amarpur (Anbung "L") , Kabeli Khola (Kawama "L"), Thechambu, Nangkholyang, Panchami (Sibuwa "L"), Bijuli Bhanjyang (Khekmakham "L") etc.</li> <li>• We have myths and mythology attached with this territory. For example, firstly, this area Amarpur was inhabited by Lepcha and our forefather defeated them and acquired this land. Still some clan of Lepcha are with Limbu such as Sangdang, Sigu and Mayong The clans of Limbu are once Lepcha.</li> <li>• We have historical place located in the top of ward no 3 of Amarpur where remainders of old palce are still found. According to myths, two clan groups of Limbu-Thindaling Khokyang and Yonghyang had fought in that place.</li> <li>• We have oral literatures like Mundhum, Palam and other folk songs. We have traditional dance and music like Dhan Nach, and Chyabrung that are distinct from other communities.</li> </ul> | Respect the self identity and provisions of special programs for preservation and protection of self identity |
|  | Main festivals            | <ul style="list-style-type: none"> <li>• Udhouli and Ubhouli</li> <li>• Chsok (Nuwangi), Makkar Sankranti and Saune Sankranti, Chaite Dashain</li> <li>• Dewali, Khola Puja, (Majhi)</li> </ul>  |   |
| <b>Information, participation, Institutional arrangement and</b> | FPIC                      | Full information   |   |
|  | Institutional arrangement | Community participation, consultation and major issues related with the project and communities will be dealt indigenous peoples' organizations. There should be separate programs for indigenous peoples  |   |
| <b>Beneficial impacts</b>  |                           | Electricity, employment, economic activities etc.  |   |
| <b>Local development needs and priority</b>                      |                           | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Electricity</li> <li>3. Special programs for indigenous peoples</li> </ol>  |   |

## Community/groups Consulted: Affected communities of Panchami VDC

**Venue:** Amarpur-9, Pinase, Powerhouse

**Date:** 19 Ashoj 2067 (October 05, 2010)

| <b>Perception towards the project:</b> All participants are positives towards the project. But doubtful, what sorts of impacts people will suffer in the future due to the project activities. |                                  |   |   |
|--|----------------------------------|---|---|
| <b>Major themes and issues discussed</b>   |                                  | <b>Major themes and issues raised</b>   | <b>Suggested mitigation measures/expectations</b>   |
| <b>Baseline information</b>  | Demographic                      | <i>Limbu (Sigu)</i> is the dominant group in Panchami VDC..   |   |
|  | Socio-cultural                   |   |   |
| <b>Development infrastructure</b>  | Schools                          | Schools and health posts are located at distance.   |   |
|  | Health and sanitation            | Poor condition  |   |
|  | Drinking water                   | Problem of drinking water. Most of the household fetch water from natural stream, khola or creeks.  | Support supply of drinking water.   |
|  | Transportation and communication | No link road to Mechi Highway. Availability of CDMA but not properly functioning.   | Support rural motorable road with joint effort-community and the project linking to Mechi Highway |
|  | Irrigation                       | Most of the farmers depend on rain as their source of irrigation  | Support irrigation.   |
|  | Energy use                       | Firewood and Kerosene. Firewood mostly collected from the private and community forests.  | Rural electrification   |
|  | Electricity                      | No electricity from national grid   | Rural electrification   |
|  | Security                         | Satisfactory  |   |
| <b>Impacts on Livelihood</b>   | NGOs                             |   |   |
|  | Loss of agricultural land        | Temporary camp on the agricultural land   |   |
|  | Mode of compensation             | <i>Compensations of loss of land. We agree the valuation determined by the village representatives, representatives of affected households and other jointly. But, if we are going to be displaced from this area, the compensation paid to affected/displaced household should be enough to restore our livelihood in another place.</i> |   |
|  | Loss of forest land              | Forests will be impacted due to project activities  |   |
|  | Downstream ecosystem             |   |   |
|  | Cultural Heritage                | <i>Satighat</i> (Pinasi Ghat) is of historical significance that will be affected by the project activities especially by the camp and powerhouse construction  |   |

|  |                           |  |  |
|--|---------------------------|--|--|
| <b>Impacts on other</b>  | Cremation sites           |  |  |
|  | Rituals                   | <i>Udhyouli and Ubhauri, Dhuli Puja, Sansari Puja, Tammar Puja</i> etc. rituals are performed in the Tamor river. Among them <i>Sansari</i> and Puja spots are located close to the powerhouse site.   |  |
|  |                           |  |  |
| <b>Information, participation, Institutional arrangement and</b> | FPIC                      | Full information   |  |
|  | Institutional arrangement | Community participation, consultation and major issues related with the project and communities will be dealt through Kabeli Concern Group.  |  |
| <b>Beneficial impacts</b>  |                           | Electricity, employment, economic activities etc.  |  |
| <b>Local development needs and priority</b>                      |                           | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Drinking water</li> <li>3. Irrigation and development of scientific agriculture system</li> <li>4. Electricity and link roads</li> <li>5. Support to health post and schools</li> </ol> |  |



**Community/groups Consulted: Majhi and Leasehold Forest Groups**

**Venue: Amarpur-5, Pinase**

**Date: 19 Ashoj, 2067** (October 05, 2010)

| Perception towards the project: All participants are positives towards the project. |                                |  |  |
|---|--------------------------------|--|--|
| Major themes and issues discussed   | Major themes and issues raised | Suggested mitigation measures/expectations   |  |
| <b>Baseline information</b>   | Demographic                    | <ul style="list-style-type: none"> <li>Total Household 17 at Pinase out of which 2 households are <i>Prasain</i> and the rest are <i>Majhi</i></li> <li>Approximate population 120</li> <li>2 HH out of 15 HH <i>Majhi</i> are totally involved in fishing.</li> <li>2 HH out of 15 HH are landless. Dependent on rented land</li> <li>1 HH out of 15 HH have food sufficiency.</li> <li>Most of the <i>Majhi</i> 14 out of 15 suffer from food deficiency. Loan, fishing, remittance, and daily wages are other means of coverage.</li> </ul>   |  |
|   | Leasehold forests              | <ul style="list-style-type: none"> <li>Pinasi Leasehold Forest Group includes 7 (2 household <i>Prasain</i> and 5 households <i>Majhi</i>) households</li> <li>Majuwa Leasehold Forest Group includes 6 households</li> <li>Devithan Leasehold Forest Group includes 6 households</li> <li>Legally Pinasi Leasehold Forest is registered in the District Forest Office of Panchthar and other two Leasehold Forests are under the process of registration.</li> <li>Most of the households are from <i>Majhi</i> indigenous community of these Leasehold Forest Groups except two <i>Prasain</i> Households</li> </ul> |  |
|   | Socio-cultural                 | <i>Majhi</i> community has some fundamental rituals-like <i>Tamor Puja</i> , death rituals etc associated with <i>Tamor</i> river. The <i>Majhi</i> seem to have lost their language totally and marginalized community. <i>Majhi</i> community is socially, economically and politically the weakest communities in the affected areas. There is not a single person who passed SLC from <i>Majhi</i> .   |  |
|   | Settlement pattern             | Scattered, thatched roof house   |  |
|   | Access to natural              | Easy access  |  |

|                                   |                                  |   |  |
|-----------------------------------|----------------------------------|---|--|
|                                   | resources                        |   |  |
| <b>Development infrastructure</b> | Schools                          | Schools are at distance. At least one and half hour walk.   |  |
|                                   | Health and sanitation            | Health posts are also at distance. At least 2hrs walk. Most of the Majhi households have no toilet facilities.  |  |
|                                   | Drinking water                   | There is facility of pipe water.  |  |
|                                   | Transportation and communication | No link road to Mechi Highway. Communication facility is available through CDMA.  | Assist rural motor able road with joint effort-community and the project linking to Mechi Highway                      |
|                                   | Irrigation                       | Severe problem of irrigation. Most of the farmers depend on rain as their source of irrigation  | Support irrigation.  |
|                                   | Energy use                       | Firewood, Kerosene from the private forest and community forest   | Rural electrification  |
|                                   | Electricity                      | No electricity from national grid   | Rural electrification  |
|                                   | Security                         | Satisfactory  |  |
|                                   | NGOs                             |   |  |
| <b>Impacts on Livelihood</b>      | Loss of fishing                  | Many households do fishing in the Tamor for household consumption. But 2 out of 15 HH of Majhi are mainly dependent on the fishing as their source of livelihood.   | Recognizing livelihoods rights as prerequisites.   |
|                                   | Loss of agricultural land        | <u>Loss of land:</u> Agricultural land occupied by Majhi and other local community.   | Proper compensation and restoration of livelihood of the affected households.  |
|                                   | Loss of forest land              | <u>Loss of forest:</u> Some leasehold forest that are traditionally owned by indigenous <i>Majhi</i> communities who lack legal entitlement.  | Respect traditional ownership of <i>Majhi</i>  |
|                                   | Mode of compensation             | Fair and proper compensation with the participation of affected community and households.   |  |
|                                   |                                  |   |  |
| <b>Impacts on other</b>           | Cultural Heritage                |   |  |
|                                   | Cremation sites                  | Project may impact the cremation sites due to project construction.   | Protection of cremation site   |
|                                   |                                  |   |  |
| <b>Indigenous peoples</b>         | Land and territory               | <u>Traditional ownership of forest land:</u> <ul style="list-style-type: none"> <li>Pinase Leasehold Forest (about 4.5 ha) is traditionally occupied by the <i>Majhi</i></li> <li>The so called <i>Majuwa</i> and <i>Devithan</i> Leasehold forests have been hitherto used by <i>Majhi</i> indigenous</li> </ul> | Respect traditional ownership of land and forest<br><br>Special programs for dependent households on leasehold forests |

|  |                               |  |  |
|--|-------------------------------|--|--|
|  |                               | community traditionally. These forest areas left to be registered during the cadastral of 2032 BS.   |  |
|  | Rituals and cultural heritage | <ul style="list-style-type: none"> <li>• A particular burial site is located in the Pinase Ghat (Pinase Cremation site). Death ritual of <i>Majhi</i> community is partly conducted at the bank of Tamor river nearby burial site. Mourning period is up to 10 days. Before the purification, the son of dead person has to stay two nights in the burial site. It is on the sixth and seventh day since the death of a family member.</li> <li>• They have distinct birth and marriage rituals than other ethnic groups. They also observe <i>Udyouli</i> and <i>Ubhauli</i> rituals like other indigenous communities of Nepal. In <i>Ubhauli</i>, they worship <i>Tamor Bassha</i>, <i>Thakurani</i> offering egg, milk and sacrificing a cock. Basically they do this on the bank of Tamor rivier to beg forgiveness for their mistakes committed knowingly or unknowingly (spitting, crossing etc) that may heart <i>Tamor Bassha Thkurani</i>.</li> <li>• <i>Majhi</i> community observes "<i>Dewali</i>" rite twice a year. In <i>Dewali</i> rite they worship their ancestors and clan deity. They observe this ritual in the household premises. Sacrifice seep, and chicken. They sing and dance collectively in the day of <i>Dewali</i> throughout night</li> <li>• An old paty (place for the rest in the time of funeral procession) and temple are located in the Powerhouse site.</li> </ul> <p><u>Rituals and customary use of fish:</u> <i>Asala</i> fish is ritually required for <i>Majhi</i>.</p> | <p>There should not be restriction performing these rituals at traditional sites. Similarly, there should not be restriction on fishing. Historical and religious sites and spots should be protected and preserved</p> <p>The socio-cultural rights should be ensured and respected</p> |
|  | Self-identity                 | <u>Self-identity:</u> They call themselves <i>Majhi</i> . <i>Pinasi</i> is also understood as <i>Majhitar</i> . Their traditional occupation was boat making and crossing the Tamor river.   | Respect self identity  |
|  | Natural resources             | The surrounding forest areas seem to be traditionally occupied by the <i>Majhi</i> though they have no legal entitlement. These forests are serving fuel wood, timber, fodders, weeds and other NTFPs to the community.  | Recognize traditional ownership, possession of land and natural resources.   |
| <b>Information, participation, Institutional arrangement</b> | FPIC                          | Full information. No complete information about Kabela A hydro-project.  |  |
|  | Institutional arrangement     | <i>Majhi</i> are one of the vulnerable groups of the project areas. They have their ethnic organization <i>Majhi Utthan Sang</i> .   |  |

|   |  |  |  |
|---|--|--|--|
| <b>Beneficial impacts</b>                   |  | Electricity, employment, economic activities etc.  |  |
| <b>Local development needs and priority</b> |  | <ol style="list-style-type: none"><li>1. Employment</li><li>2. Irrigation and development of scientific agriculture system</li><li>3. Electricity and link roads</li><li>4. Support to health post and schools</li></ol> |  |

**Community/groups Consulted: Downstream affected communities Nangkholyang VDC, Taplejung**

**Venue: Nangkholyang-6, Mewakha**

**Date: 21 Ashoj, 2067** (October 07, 2010)

| Perception towards the project: Local people are positive |                                  |  |   |
|---|----------------------------------|--|---|
| Major themes and issues discussed                         | Major themes and issues raised   | Suggested mitigation measures/expectations   |   |
| <b>Baseline information</b>                               | Demographic                      | Most of the downstream communities partially dependent on fisheries and other river activities are <i>Rai, Newar</i> and <i>Limbu</i> .  |   |
|   | Socio-cultural                   |  |   |
|   | Settlement pattern               | Scattered, thatched roof house, more slope village   |   |
| <b>Development infrastructure</b>                         | Schools                          | High schools are located at distance and lack infrastructures.   | Support schools   |
|   | Health and sanitation            | Common disease diarrhea, fever, Uterus proleptis, gastric etc. Health posts are frequently incompletely staffed and poorly equipped. People have no toilet facility and defecation in open area. | Support health posts  |
|   | Drinking water                   | Problem of drinking water. Most of the household fetch water from natural stream, khola or creeks.   | Support supply of drinking water.   |
|   | Transportation and communication | No link road to Mechi Highway, no transportation facilities to hospital, and school. Availability of CDMA but not properly functioning.  | Support rural motorable road with joint effort-community and the project linking to Mechi Highway   |
|   | Irrigation                       | One of the problems they have been facing is irrigation as they said. Most of the farmers depend on rain as their source of irrigation   | Support irrigation and supply of drinking water. According to the participants "Khokse Khola" will be appropriate source of irrigation and drinking water for the affected areas. |
|   | Energy use                       | Firewood and Kerosene. Firewood mostly collected from the private and community forests.   | Rural electrification   |
|   | Electricity                      | No electricity from national grid  | Rural electrification   |
|   | Security                         | Satisfactory   |   |
| NGOs  |                                  |  |   |

|                              |                       |  |  |
|------------------------------|-----------------------|--|--|
| <b>Impacts on Livelihood</b> | Loss of fishing       | There are some HH who are engaged in collection of gravel and sand and fishing activities for supplementary income.  | Support livelihood restoration of affected communities through employment, skill training and capacity development<br><br>Recognizing livelihoods rights as prerequisites. |
|                              | Possible disasters    | There is a risk of flood and other disasters due to possible damage on dam and altering the timing the stream flow.  | Provision of rescue and mitigation plan for possible disaster  |
|                              | Loss of forest land   |  |  |
| <b>Impacts on other</b>      | Cultural Heritage     | Shiva temple is located at the bank of Kabeli river. Ritual performances is likely to be affected due to low flow of water in the dry season.  | Minimum flow for cultural and religious survival   |
|                              | Cremation sites       |  | Minimum flow for cultural and religious survival   |
|                              | Rituals               | <u>Rituals and customary use of flora and fauna:</u> Hindu Brahmins/Chhetris and non-Hindu have a ritual of purification obtained by bathing in the holy river-Kabeli. Worship Kabeli in every religious day like <i>Aushi, Kuse Aushi, Matatirtha</i> . Affected communities repeatedly raised the concerns that the construction of dam will have impacts on religious activities. | Minimum flow for cultural and religious survival   |
|                              | Language              |  |  |
|                              | Religion              | <u>Holiness of the river:</u> They respect Kabeli as a holy river and call the river Kabeli <i>Ganga</i> . Hindu pilgrims from the surrounding Districts and VDCs come to take religious bath ( <i>Makkar</i> ) in January/February every year.  | Minimum flow for cultural and religious survival   |
|                              | Health and sanitation |  |  |
|                              | Women and children    |  |  |
|                              | Downstream ecosystem  | The impacts of blocking the river may involve changes on downstream ecosystem including effects on riparian plant-life, decline of fish and other aquatic species.   | Minimum flow for downstream ecosystem  |
|                              | Land and territory    |  |  |
|                              | Rituals and cultural  | <u>Rituals and customary use of fish:</u> Impacts on cultural life of  | Cultural Flow Release (CFR) will be  |

|  |                           |  |   |
|--|---------------------------|--|---|
| <b>Indigenous peoples</b>  | heritage                  | indigenous peoples as <i>Asala</i> and <i>Tite</i> fish ritually required for <i>Limbu</i> and <i>Rai</i> indigenous communities. <i>Gali sarap</i> ritual associated with Kabela river practiced by <i>Limbu</i> community.                             | the best way to meet the cultural needs of the indigenous and local people. |
|  | Self-identity             | Most of the indigenous communities of the downstream areas introduce themselves as <i>Rai</i> , <i>Limbu-Khimding</i> , and <i>Shrestha</i> .  |   |
|  | Natural resources         |  |   |
| <b>Information, participation, and Institutional arrangement</b> | FPIC                      | Full information   |   |
|  | Institutional arrangement | Community participation, consultation and major issues related with the project and communities will be dealt through Kabela Concern Group.  |   |
| <b>Beneficial impacts</b>  |                           | Electricity, employment, economic activities etc.  |   |
| <b>Local development needs and priority</b>                      |                           | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Drinking water</li> <li>3. Irrigation and development of scientific agriculture system</li> <li>4. Electricity and link roads</li> <li>5. Support to health post and schools</li> </ol> |   |

**Community/groups Consulted: Kabeli Concern Group**

**Venue: Amarpur-6, Office of Bijulibhanjyang Community Forest, Phaudarpaty**

**Date: 18 Ashoj, 2067** (October 04, 2010)

| <b>Perception towards the project:</b> Local people are positive |                                       |   |   |
|--|---------------------------------------|---|---|
| <b>Major themes and issues discussed</b>                         | <b>Major themes and issues raised</b> | <b>Suggested mitigation measures/expectations</b>   |   |
| <b>Baseline information</b>                                      | Demographic                           |   |   |
|  | Socio-cultural                        |   |   |
|  | Settlement pattern                    |   |   |
|  | Access to natural resources           |   |   |
|  | Others                                |   |   |
| <b>Development infrastructure</b>                                | Schools                               | High schools are located at distance and lack infrastructures.  | Support schools   |
|  | Health and sanitation                 | Common disease diarrhea, fever, Uterus proleptis, gastric etc. Health posts are frequently incompletely staffed and poorly equipped. People have inadequate toilet facilities.  | Support health posts  |
|  | Drinking water                        | Problem of drinking water. Most of the household fetch water from natural stream, khola or creeks.  | Support supply of drinking water.   |
|  | Transportation and communication      | No link road to Mechi Highway, No transportation facilities to hospital, and school. Availability of CDMA but not properly functioning.   | Support rural motorable road with joint effort-community and the project linking to Mechi Highway |
|  | Irrigation                            | One of the problems they have been facing is irrigation as they said. Most of the farmers depend on rain as their source of irrigation  | Support irrigation  |
|  | Energy use                            | Firewood and Kerosene. Firewood mostly collected from the private and community forests.  | Rural electrification with the provision of no load shading                                       |
|  | Electricity                           | No electricity from national grid   | Rural electrification with the provision of no load shading                                       |
|  | Security                              | Satisfactory  |   |
|  | NGOs                                  |   |   |
| <b>Impacts on Livelihood</b>                                     | Loss of fishing                       | It is mainly the indigenous peoples, marginal farmers, landless laborers who depend on the river resources to support their income. Whether it is fishing in the river, collecting sand and gravel or using forest produce. | Livelihood restoration programs   |



|  |                     |  |   |
|--|---------------------|--|---|
|  |                     |  |   |
|  | Loss of forest land | <p>Impacts on community forests: <i>Kabeli Garjite, Thulo Dhuseni and Pachkanya Kholi</i> community forests. Special attention should be paid so that minimum forest/trees are cleared/submerged. At least 75 to 150 households are primarily depending for forest products in Panchakanya Kholi community forest.</p> <p>Forests located at the headworks areas will be affected. It is the source of forest products for Amarpur VDC. Especially, local people of ward no. 2, 4, 5, 6 and 7 collect NTFPs from this forest paying tax or "Asuli" to the forest owner <i>Subbas</i>. Each household who collect NTFPs from the forest pay <i>Asuli</i> of Rs. 150 per year.</p> | Replacement of community forest in another area with the provisions of programs for plantation, protection and conservation of plant species. |

|                         |                 |   |   |
|-------------------------|-----------------|---|---|
| <b>Impacts on other</b> | Cremation sites | <i>Shiva Panchayan</i> temple and downstream cremation sites will be affected due to low flow of water in the river in the dry season.  | <p>Cultural Flow Release (CFR) will be the best way to maintain cremation activities and to meet the cultural needs of the indigenous and local people. CFR can be defined as "cultural requirements and planned flow release program for culturally approved development."</p> <p>Another option is to release more than 10 per cent water in the time of need or in the day of cremation.</p> <p>For Ward No. 1, 2, 3, 4 and 5, and Ward No. 7, 8 and 9 of Amarpur VDC, <i>Khibuna</i> and <i>Tamor</i> cremation site will be the alternative respectively if proper foot trails are constructed. If we adopt this option, one foot trail of 2 to 3 km length for <i>Khibuna</i> cremation site and another foot trail of 3 km length for <i>Tamor</i> cremation site are to be constructed.</p> |
|                         | Rituals         | <u>Rituals and customary use of flora and fauna:</u> Hindu <i>Brahmins/Chhetris</i> and non-Hindu have a ritual of purification obtained by bathing in the holy river-Kabeli. Worship Kabeli Ganga in every religious day like <i>Aushi, Kuse Aushi, Matatirtha</i> . Affected communities repeatedly raised the concerns that the construction of dam will have impacts on religious activities. | CFR will be the best way to maintain cremation activities and to meet the cultural needs of the indigenous and local people.  |
|                         | Language        |   |   |
|                         | Religion        | <u>Holiness of the river:</u> They respect Kabeli as a holly river and we call it Kabeli Ganga. Hindu pilgrims from the surrounding Districts and VDCs come to take religious bath ( <i>Makkar</i> ) in January/February every year.  | CFR will be the best way to maintain cremation activities and to meet the cultural needs of the indigenous and local people.  |

|  |                               |  |  |
|--|-------------------------------|--|--|
|  | Downstream ecosystem          | The impacts of blocking the river may involve changes on downstream ecosystem including effects on riparian plant-life, decline of fish and other aquatic species.   | Minimum flow for downstream ecosystem  |
| <b>Indigenous peoples</b>  | Rituals and cultural heritage | <u>Rituals and customary use of fish:</u> <i>Asala</i> and <i>Tite</i> fish are ritually required for <i>Limbu</i> and <i>Rai</i> communities. <i>Gali sarap</i> ritual associated with Kabeli river practiced by <i>Limbu</i> community.                | CFR will be the best way to maintain cremation activities and to meet the cultural needs of the indigenous and local people. |
| <b>Information, participation, and Institutional arrangement</b> | FPIC                          | Full information   |  |
|  | Institutional arrangement     | Community participation, consultation and major issues related with the project and communities will be dealt through Kabeli Concern Group. Recognition of Kabeli Concern Group  |  |
| <b>Beneficial impacts</b>  |                               | Electricity, employment, economic activities etc.  |  |
| <b>Local development needs and priority</b>                      |                               | <ol style="list-style-type: none"> <li>1. Employment</li> <li>2. Drinking water</li> <li>3. Irrigation and development of scientific agriculture system</li> <li>4. Electricity and link roads</li> <li>5. Support to health post and schools</li> </ol> |  |

**Community/groups Consulted: Dalit community**

**Venue: Amarpur-6, Bhaluchowk**

**Date: 23 Ashoj, 2067** (October 09, 2010)

| Perception towards the project: The participants were found not well informed about the project. |                                |  |   |
|--|--------------------------------|--|---|
| Major themes and issues discussed  | Major themes and issues raised | Suggested mitigation measures/expectations   |   |
| <b>Baseline information</b>  | Demographic                    | There are nearly about 110 <i>Dalit</i> household distributed in the ward no 3, 4, 6 and 8 of Amarpur VDC. <i>Kami</i> and <i>Damai</i> are the dominant <i>Dalit</i> caste group. Among them the number of the latter one is somehow greater than the first. Sex ratio among the <i>Dalit</i> is nearly 50-50. The average family size among the <i>dalit</i> was reported to 6.  |   |
|  | Religion                       | Most of the <i>Dalit</i> of Amarpur practiced Hinduism. Nowadays some of them have reported change their religion to Christianity.   |   |
|  | Access to natural resources    | Like the other groups the <i>Dalits</i> also enjoying on the available natural resource. The available grazing land is not sufficient for them. Generally they collect necessary firewood and fodder from the nearest community and government forests. In addition to this the necessary housing materials like wood timber and <i>Khar</i> (thatch) from the forest and private land. According to them there is no constraint for them to use the available forest resource according to the rule of the particular institutions. |   |
|  | Educational Status             | Nearly about 35 percent <i>Dalit</i> are illiterate among them male contributing 40 % and female 60 %. Altogether 60 to 70 individuals have passed SLC level and about 20-25 intermediate passed. Only 10 -15 have attended the university education among them women's are very few in number. Due to the poor economic status they have no access to the private boarding school.  | Increase income generating program to the poor and oppressed groups |
| <b>Development infrastructure</b>  | Schools                        | Schools are located near to the major <i>Dalit</i> settlement. Though, the school enrolment rate among the <i>Dalit</i> is high, the school attendance rate is very low.   |   |
|  | Health and sanitation          | The overall health status among the <i>Dalit</i> is not satisfactory. Health centre located near their settlement always face the scarcity of medicine, manpower. Moreover they felt a kind of discrimination on healthy service being <i>Dalit</i> which may be in the form of misbehave, and lack of concern etc. Nowadays the toilet culture is increasing among the <i>Dalits</i> also. Majority of them have built temporary toilet which dramatically reduced the open excreta which was prevalent in the past.                | Support heath posts   |
|  | Drinking water                 | Scarcity of drinking water during the dry season is one of the major problems especially for the <i>Dalits</i> of ward no 6 and 3. Like the other community the <i>Dalits</i> also are not well confident about the hygiene.   | Support supply of drinking water.                                   |

|                         |                                |   |  |
|-------------------------|--------------------------------|---|--|
|                         | Energy use                     | Almost all <i>Dalits</i> of Amarpur use firewood for cooking and Kerosene for lightening purpose. They collect necessary firewood from community and government forests located near to their settlements.  | Rural electrification  |
|                         | Electricity                    | No electricity from national grid   | Rural electrification  |
|                         | Participation of <i>Dalits</i> | In present time <i>Dalit</i> have reservation quota for every organization like CFUG, Political Parties, Kabeli Hydro Concern Group etc. So the presence of the <i>Dalit</i> in public sphere is increasing but their real participation is not achieved till now due to their lower access to the decision making level. According to them<br><i>“The majority of the inhabitants of this area are Limbus, so they occupy every top post of all Political parties, Social Organization, School and all other place where there is the exercise of power and prestige. They are very wealthier than us. In other words they are the manager and Distributor of this area. They along with some influential Brahmins and Chhetries take all the decision even that is not related to them. we have to obey their decision. Well talking about the Kabeli Concern Committee there is our representative also but the representation is only in paper but not in practice. These days we have heard that the Adabeshi Janajati have organized many secret meetings separately and they are going to force the project to fulfill all their demands without consulting with the other oppressed groups like us. Therefore it creates great doubt within us whether this committee headed by them works for our welfare. So we think there is great risk of further marginalization to us from the service and facility provided by the project.</i> | Increase meaningful participation of the poor and oppressed groups   |
| <b>Impacts on other</b> | Health and sanitation          | Health problems ( outbreaks of various kind of communicable disease due to poor level of sanitation especially in the construction camp).   | Increase health facility (hospital and medical personals)  |
|                         | Women and children             | Weakening Social Security (robbery, murder, insecurity especially for women’s due to the immigrant workers, increased alcoholism and violence)  | Increase training and awareness program<br>Increase the presence and number of security system and personals       |
|                         | Environment                    | Environmental Pollution (air pollution due to smoke and dust particles that were released during construction activities)   | Proper management of the sewage and discarded items during construction<br>Increase training and awareness program |
| <b>Information,</b>     | FPIC                           | Full information  |  |

|   |                           |  |
|---|---------------------------|--|
| <b>participation, and Institutional arrangement</b> | Institutional arrangement | They have formed a <b><i>Dalit Organization</i></b> at VDC level which works for the empowerment, development and welfare of the <i>Dalits</i> . In addition, they have democratically formed executive body. Presently the committee tries to make link to Governmental organizations, Nongovernmental organizations political parties and others. In addition, they are planning to make socioeconomic profile of the <i>Dalits</i> of Amarpur VDC.  |
| <b>Beneficial impacts</b>                           |                           | <ul style="list-style-type: none"> <li>• Employment opportunity which ultimately increases their income level</li> <li>• Utilization of the local resources</li> <li>• Market access to their Agricultural and other caste specific skill and products</li> <li>• Electrification.</li> </ul>  |
| <b>Local development needs and priority</b>         |                           | <ul style="list-style-type: none"> <li>• Priority to the local <i>Dalit</i> in employment according to their skills and capabilities</li> <li>• Vocational Training to the <i>Dalits</i> like handicrafts weaving</li> <li>• Assistance for making permanent toilet for <i>Dalit</i> and others</li> <li>• Conform the facilities and quota reserve for the <i>Dalits</i> so that other groups may not misuse the facility delivered to the <i>Dalits</i></li> <li>• Consultation, Involvement and coordination with the <i>Dalit</i> Committee</li> <li>• Programs must be conducted according to the democratic system.</li> </ul> |

## **ANNEX E**

# **LIST OF PARTICIPANTS IN CONSULTATIONS/FGDS**

## **KABELI-A HYDROELECTRIC PROJECT SA STUDY**

JULY 2013

## List of Participant in Consultations/FGDs

### Consultation Meeting With the Majhi Adivashi/Janajatiu of the Powerhouse Area

Date: 2067/06/19 (October 05, 2010)

Venue: Amarpur -9 Majhitar Pinase

| S.N | Name                 | Age | Sex | Occupation/<br>Organization | Address   | Contact<br>No. |
|-----|----------------------|-----|-----|-----------------------------|-----------|----------------|
| 1   | Purna Bahadur Majhi  | 70  | M   | Agriculture                 | Amarpur-9 | -              |
| 2   | Dambar Bahadur Majhi | 65  | M   | Agriculture                 | Amarpur-9 | -              |
| 3   | Hari Maya Majhi      | 55  | F   | Agriculture                 | Amarpur-9 | -              |
| 4   | Tika Prasad Majhi    | 55  | M   | Agriculture                 | Amarpur-9 | -              |
| 5   | Gopal Majhi          | 25  | M   | Agriculture                 | Amarpur-9 | -              |
| 6   | Jes Bahadur Majhi    | 84  | M   | Agriculture                 | Amarpur-9 | -              |
| 7   | Shree Prasad Majhi   | 47  | M   | Agriculture                 | Amarpur-9 | -              |
| 8   | Gagan Majhi          | 24  | M   | Agriculture                 | Amarpur-9 | -              |
| 9   | Jeevan Majhi         | 27  | M   | Agriculture                 | Amarpur-9 | -              |
| 10  | Kal Maya Majhi       | 52  | F   | Agriculture                 | Amarpur-9 | -              |
| 11  | Saradha Majhi        | 35  | F   | Agriculture                 | Amarpur-9 | -              |
| 12  | Man Kumar Majhi      | 22  | M   | Agriculture                 | Amarpur-9 | -              |
| 13  | Nirmala Majhi        | 25  | F   | Agriculture                 | Amarpur-9 | -              |
| 14  | Kamala Majhi         | 35  | F   | Agriculture                 | Amarpur-9 | -              |
| 15  | Kumari Majhi         | 28  | F   | Agriculture                 | Amarpur-9 | -              |
| 16  | Narayan Majhi        | 20  | M   | Agriculture                 | Amarpur-9 | -              |
| 17  | Dilli Kumar Parsain  | 55  | M   | Agriculture                 | Amarpur-9 | -              |
| 18  | Abishek B.C          | 30  | M   | Environmental Engineer-     | Kathmandu | -              |
| 19  | Hari Bhattraai       | 47  | M   | Anthropologist              | Kathmandu | -              |
| 20  | Hom Prasad Rai       |     |     | IP. Exerts                  | Kathmandu | 9841488786     |
| 21  | Pralhad Parsain      | 32  | M   | KEL-PRA                     | Amarpur-9 |                |
| 22  | Amrit Poudel         | 30  | M   | Environmentalist/ HCPL      | Kathmandu |                |
| 23  | Prakash Poudel       | 25  | M   | Anthropologist /HCPL        | kathmandu |                |



## Consultation Meeting With the Representatives of Kholi Panchakanya and Thulo Dhuseni Community Forest User Groups

Date: 2067/06/16 (October 02, 2010)

Venue: Amarpur-5 Dhusani

| S.N | Name of the Participants  | Age | Sex | Occupation/<br>(Organization)                      | Address     | Contact No. |
|-----|---------------------------|-----|-----|--|-------------|-------------|
| 1   | Bishnu Prasad Katuwal     | 31  | M   | Agriculture  | Amarpur- 6  |             |
| 2   | Dil Bahadur Tamang        | 49  | M   | Agriculture  | Amarpur- 5  | 9742602564  |
| 3   | Tika Maya Katuwal         | 58  | F   | Agriculture  | Amarpur- 6  |             |
| 4   | Dal Bahadur Bhatteari     | 44  | M   | Agriculture  | Amarpur- 5  | 9742637086  |
| 5   | Punya Prasad Oli          | 35  | M   | Agriculture  | Amarpur- 7  |             |
| 6   | Kul Bahadur Basnet        | 54  | M   | Agriculture  | Amarpur- 5  |             |
| 7   | Dil Bikram Thapa          | 43  | M   | Agriculture/Vice president<br>KHEAP Concern Group) | Amarpur- 7  | 9742638955  |
| 8   | Dhan Bahadur Tamang       | 53  | M   | Agriculture/(Treasurer<br>Kholi Panchakanya C.F    | Amarpur- 6  | 9742630704  |
| 9   | Amrit Bahadur Basnet      | 55  | M   | Agriculture/(President<br>Kholi Panchakanya C.F.)  | Amarpur- 6  | 9742629686  |
| 10  | Ram Prasad Tamang         | 28  | M   | Agriculture/ (Secretary<br>Thulo Dhuseni C.F.)     | Amarpur - 5 | 9742616817  |
| 11  | Harka Thapa               | 36  | M   | Teacher  | Amarpur- 7  | 9742618171  |
| 12  | Indra Narayan Adhakari    | 52  | M   | Agriculture  | Amarpur- 6  | 9742605874  |
| 13  | Nanda kumar Tamang        | 57  | M   | Agriculture  | Amarpur- 2  | 9741063209  |
| 14  | Laxmi Hembya              | 40  | M   | Agriculture  | Amarpur- 6  | 9742637061  |
| 15  | Narendra Prakash Shrestha | 53  | M   | Agriculture  | Amarpur- 5  | 026-690649  |
| 16  | Nar Bahadur Hemba         | 58  | M   | Agriculture  | Amarpur- 6  | 9742637067  |
| 17  | Machindra Bikram Tamang   | 55  | M   | Agriculture  | Amarpur- 5  | 023-691983  |
| 18  | Prem Prasad Adhakari      | 64  | M   | Agriculture  | Amarpur- 6  |             |
| 19  | Harka Bir Tamang          | 55  | M   | Agriculture  | Amarpur-5   | 9742637351  |
| 20  | Nar Bahadur Tamang        | 71  | M   | Agriculture  | Amarpur- 5  | -           |
| 21  | Santa Bahadur Tamang      | 53  | M   | Agriculture  | Amarpur- 5  | 9742656163  |
| 22  | Ram Kumar Khati           | 53  | M   | Agriculture  | Amarpur- 5  |             |
| 23  | Bhola Gautum              | 26  | M   | Student  | Amarpur- 6  | 9742637533  |
| 24  | Hari Prasad Rizal         | 48  | M   | Agriculture  | Amarpur- 6  | 9742604230  |

|    |                          |    |   |                         |            |            |
|----|--------------------------|----|---|-------------------------|------------|------------|
| 25 | Pashang Tamang           | 42 | M | Agriculture             | Amarpur- 5 | -          |
| 26 | Laxmi Prasad Hembya (Ga) | 32 | M | Agriculture             | Amarpur- 6 | 9742629931 |
| 27 | Krishna Bahadur Poudel   | 45 | M | Agriculture             | Amarpur- 6 | 9742665308 |
| 28 | Parbat Krishna Pokherel  | 29 | M | Admin Officer -KEL      | Kathmandu  | 9841532467 |
| 29 | Krishna Das Shrestha     | 46 | M | PRO -KEL                | Kathmandu  | 9752001382 |
| 30 | Abhishek B.C.            | 30 | M | Environm,ental Engineer | Kathmandu  | 9841579575 |
| 31 | Shalik Ram Shigdel       | 30 | M | Botanist-(NESS)         | Kathmandu  | 9841242334 |
| 32 | Hom Prasad Rai           | 38 | M | I.P. Exerts             | Kathmandu  |            |
| 33 | Amrit Poudel             | 30 | M | Environmentalist/ HCPL  | Kathmandu  |            |
| 34 | Prakash Poudel           | 25 | M | Anthropologist/HCPL     | Kathmandu  |            |

### **Focused Group Discussion with Dalits of Project Area**

Date: 2067/6/23 (October 09, 2010)

Venue: Amarpur-4 Bhaluchock

| <b>S.N</b> | <b>Name</b>            | <b>Age</b> | <b>Sex</b> | <b>Occupation/<br/>Organization</b> | <b>Address</b> | <b>Contact<br/>No.</b> |
|------------|------------------------|------------|------------|-------------------------------------|----------------|------------------------|
| 1          | Shrawan Kumar Rashaily | 48         | M          | Agriculture/Goldsmith               | Amarpur-4      | 9742637025             |
| 2          | Dil Kumar Nepali       | 47         | M          | Teacher                             | Amarpur-4      | 023-690481             |
| 3          | Uday Bahadur Khatti    | 51         | M          | Goldsmith                           | Amarpur-4      | 023-693540             |
| 4          | Dhan Kumar Nepali      | 30         | M          | Tailoring                           | Amarpur-4      | 9742633711             |
| 5          | Sarita Kalikota        | 21         | F          | Student                             | Amarpur-4      | 9742619315             |
| 6          | Buddiman Sundas        | 36         | M          | Tailoring /Agriculture              | Amarpur-4      |                        |
| 7          | Junita Sundas          | 15         | F          | Student                             | Amarpur-4      |                        |
| 8          | Ram Chandra Nepali     | 43         | M          | Teacher                             | Amarpur-4      | 023-697622             |
| 9          | Amrit Poudel           | 30         | M          | Environmentalist/HCPL               | Kathmandu      |                        |
| 10         | Prakash Poudel         | 25         | M          | Anthropologist/ HCPL                | Kathmandu      | 9841746447             |

## Consultation with of the VDC representatives of and the affected communities of Panchami

Date: 2067/06/19 (October 05, 2010)

Venue: Amarpur-9 Pinasi

| S.N | Name of the Participants | Age | Sex | Occupation/<br>(Organization) | Address     | Contact No. |
|-----|--------------------------|-----|-----|-------------------------------|-------------|-------------|
| 1   | Kumar Chaulagain         | 32  | M   | Agriculture                   | Panchami- 8 | -           |
| 2   | Ganesh Sigu              | 62  | M   | Agriculture                   | Panchami- 8 | -           |
| 3   | Devi Prasad Subedi       | 66  | M   | Agriculture                   | Panchami- 8 | -           |
| 4   | Biddh Pati Subedi        | 56  | M   | Agriculture                   | Panchami- 8 | -           |
| 5   | Jagat Bahadur Humjan     | 68  | M   | Agriculture                   | Panchami- 8 | -           |
| 6   | Dill Kumar Parsain       | 58  | M   | Agriculture                   | Amarpur- 9  | -           |
| 7   | Deu Kumar Tamang         | 42  | M   | Agriculture                   | Panchami- 8 | -           |
| 8   | Surendra Tamang          | 32  | M   | Agriculture                   | Panchami- 8 | -           |
| 9   | Ganesh Parsain           | 30  | M   | Agriculture                   | Amarpur- 9  | -           |
| 10  | Narayan Majhi            | 18  | M   | Agriculture                   | Amarpur- 9  | -           |
| 11  | Gayatri Chaulagain       | 29  | F   | Agriculture                   | Panchami- 8 | -           |
| 12  | Madeni Prasad Acharya    |     | M   | Agriculture                   | Panchami- 8 | -           |
| 13  | Bhumi Prasad Chaulagain  |     | M   | Agriculture                   | Panchami- 8 | -           |
| 14  | Jagat Shrestha           |     | M   | Agriculture                   | Panchami- 8 | -           |
| 15  | Bhagirath Barayali       |     | M   | Agriculture                   | Panchami- 8 | -           |
| 16  | Shran Sigu               |     | M   | Agriculture                   | Panchami- 8 | -           |
| 17  | Khagendra Sigu           |     | M   | Agriculture                   | Panchami- 8 | -           |
| 18  | Shree Prasad Majhi       |     | M   | Agriculture                   | Amarpur- 9  | -           |
| 19  | Prasad Singh Majhi       |     | M   | Agriculture                   | Amarpur- 9  | -           |
| 20  | Tika Prasad Majhi        | 58  | M   | Agriculture                   | Amarpur- 9  | -           |
| 21  | Man Kumari Majhi         |     | F   | Agriculture                   | Amarpur- 9  | -           |
| 22  | Ram Kumar Maghi          |     | M   | Agriculture                   | Amarpur- 9  | -           |
| 23  | Kamala Majhi             | 35  | F   | Agriculture                   | Amarpur- 9  | -           |
| 24  | Jas Bahadur Majhi        |     | M   | Agriculture                   | Amarpur- 9  | -           |
| 25  | Prahlad Parsain          | 32  | M   | PRA-KEL                       | Amarpur- 9  | 9742637603  |

|    |                           |    |   |                       |             |  |
|----|---------------------------|----|---|-----------------------|-------------|--|
| 26 | Sona Limbu                | 17 | F | PRA-KEL               | Panchami- 8 |  |
| 27 | Hom Prasad Rai            | 38 | M | IP Expert             | Kathmandu   |  |
| 28 | Hari Prasad Bhattra       | 46 | M | Anthropologist/TU     | Kathmandu   |  |
| 29 | Krishna Das Shrestha      | 46 | M | PRO-KEL               | Kathmandu   |  |
| 30 | Dr. Mukesh Kumar Chalishe | 53 | M | Zoologist/TU          | Lalitpur    |  |
| 33 | Raj Kapur Napit           | 49 | M | Fish Export           | Lalitpur    |  |
| 34 | Salil Devkota             | 42 | M | Environment Engineer  | Kathmandu   |  |
| 35 | Abihsek B.C.              | 30 | M | Environment Enginee   | Kathmandu   |  |
| 36 | Amrit Poudel              | 30 | M | Environmentalist/HCPL | Kathmandu   |  |
| 37 | Prakash Poudel            | 25 | M | Anthropologist/HCPL   | Kathmandu   |  |

**Joint Consultation with of the representatives Indigenous People of Amarpur, Panchami, Thechambu and Nangkholyang VDCs**

Date: 2067/06/23 (October 09, 2010)

Venue: Amarpur-6 Bijuli Bhanjyang

| S.N | Name of the Participants | Age | Sex | Occupation/ (Organization)   | Address        | Contact No. |
|-----|--------------------------|-----|-----|------------------------------|----------------|-------------|
| 1   | Bhabani Prasad Lingden   | 52  | M   | President KEHP-Concern Group | Amarpur- 3     | 9742612060  |
| 2   | Bhim Raj Manyangbo       | 30  | M   | KEHP-Concern Group           | Thechambu-4    | 9742639581  |
| 3   | Bikram Hemba             | 42  | M   | Agriculture                  | Amarpur- 6     | 9742711901  |
| 4   | Mahesh Manyangbo         | 43  | M   | Teacher                      | Panchami- 8    | 023-691108  |
| 5   | Laxmi Prasad Hemba       | 40  | M   | President-NEFIN Amarpur      | Amarpur-6      | 9742637061  |
| 6   | Dev Manyangbo            | 51  | M   | President-NEFIN              | Thechambu-4    | 9742045844  |
| 7   | Prem Raj Sigu            | 40  | M   | Teacher                      | Amarpur-6      | 9742636901  |
| 8   | Tara Bahadur Rai         | 50  | M   | Agriculture                  | Nangkholyang-6 | 9742601604  |
| 9   | Dipendra Sigu            | 24  | M   | Agriculture                  | Amarpur- 9     | 9814958715  |
| 10  | Laxmi Prasad Shrestha    | 45  | M   | Secretary NEFIN-Amarpur      | Amarpur- 6     | 9742607119  |
| 11  | Jaya Bahadur Rai         | 37  | M   | Agriculture                  | Amarpur- 1     | -           |
| 12  | Dil Bahadur Khaling      | 39  | M   | Agriculture                  | Amarpur- 1     | 9742637023  |
| 13  | Ran Dhoj Hemba           | 67  | M   | Agriculture                  | Amarpur- 9     | -           |

|    |                       |    |   |                       |            |            |
|----|-----------------------|----|---|-----------------------|------------|------------|
| 14 | Mani Lingden          | 22 | M | Student               | Amarpur- 4 | 9742633749 |
| 15 | Narayan Hemba         | 60 | M | Agriculture           | Amarpur- 9 | 9742629880 |
| 16 | Dhiren Lingden(Bhim)  | 27 | M | Agriculture           | Amarpur- 3 | 024-690838 |
| 17 | Sundar Rai            | 20 | M | Agriculture           | Amarpur- 2 | 024-690858 |
| 18 | Bhim Raj Hemba        | 44 | M | Agriculture           | Amarpur- 6 | 9742637008 |
| 19 | Ganga Chauhan         | 44 | M | Agriculture           | Amarpur- 9 | 9742601580 |
| 20 | Krishna Das Shrestha  | 46 | M | PRO-KEL               | Kathmandu  | -          |
| 21 | Sona Sigu             | 18 | F | Student               | Panchami-8 | -          |
| 22 | Hom Prasad Rai        | 38 | M | IP Expert             | Kathmandu  | -          |
| 23 | Hari Prasad Bhattarai | 46 | M | Anthropologist        | Kathmandu  | -          |
| 24 | Amrit Poudel          | 32 | M | Environmentalist/HCPL | Kathmandu  |            |
| 25 | Prakash Poudel        | 25 | M | Anthropologist/HCPL   | Kathmandu  | 9841746447 |

### VDC Level Consultation, Nangkholyang

Date: 2067/06/21 (October 07, 2010)

Venue: Nangkholyang - 5

| S.N | Name of the Participants | Age | Sex | Occupation/<br>(Organization) | Address         | Contact No. |
|-----|--------------------------|-----|-----|-------------------------------|-----------------|-------------|
| 1   | Narayan Shrestha         | 32  | M   | Labor                         | Nangkholyang-5  |             |
| 2   | Buddhi Bahadur Sunuwar   | 72  | M   | Agriculture                   | Nangkholyang-5  |             |
| 3   | Krishna Bahadur Subba    | 45  | M   | Agriculture                   | Nangkholyang-5  |             |
| 4   | Kaji Man Shrestha        | 46  | M   | Agriculture                   | Nangkholyang- 5 |             |
| 5   | Gopi Shrestha            | 45  | M   | Business                      | Nangkholyang- 5 | 023-694401  |
| 6   | Jas Bahadur Limbu        | 35  | M   | Labor                         | Nangkholyang- 5 |             |
| 7   | Naresh Shrestha          | 35  | M   | Business                      | Nangkholyang- 5 |             |
| 8   | Chandra Narayan Shrestha | 60  | M   | Agriculture                   | Nangkholyang-5  |             |
| 9   | Chandra Narayan Shrestha | 53  | M   | Agriculture                   | Nangkholyang-5  |             |
| 10  | Tara Prasad Upreti       | 58  | M   | Agriculture                   | Nangkholyang- 5 | 023-696860  |
| 11  | Jamuna Shrestha          | 26  | F   | Agriculture                   | Nangkholyang- 5 | 9742622407  |
| 12  | Shayam Maya Limbu        | 23  | F   | Agriculture                   | Nangkholyang- 5 | 9806030575  |
| 13  | Binita Kandel            | 21  | M   | Agriculture                   | Nangkholyang- 5 | 9842605286  |

|    |                        |    |   |                        |                 |            |
|----|------------------------|----|---|------------------------|-----------------|------------|
| 14 | Farendra Karki         | 18 | M | Agriculture            | Nangkholyang-5  |            |
| 15 | Purna Bahadur Rai      | 42 | M | Agriculture            | Nangkholyang-6  |            |
| 16 | Bhim Narayan Shrestha  | 50 | M | Agriculture            | Nangkholyang-5  |            |
| 17 | Salik Ram Khattiwada   | 35 | M | Agriculture            | Nangkholyang-5  |            |
| 18 | Buddiman Rai           | 20 | M | Student                | Nangkholyang-6  |            |
| 19 | Rumendra               | 35 | M | Agriculture            | Nangkholyang-7  |            |
| 20 | Dhan Narayan Shrestha  | 69 | M | Agriculture            | Nangkholyang- 5 |            |
| 21 | Dharma Prasad Upreti   | 65 | M | Agriculture            | Nangkholyang-6  |            |
| 22 | Rabindra Upreti        | 33 | M | Business               | Jhapa           | 9842691670 |
| 23 | Hasta Bahadur Subba    | 45 | M | Agriculture            | Nangkholyang-5  |            |
| 24 | Kul Prasad Khattiwada  | 57 | M | Agriculture            | Nangkholyang- 5 | 9842636955 |
| 25 | Sujan Limbu            | 20 | M | Student                | Nangkholyang- 5 |            |
| 26 | Sujan Limbu            | 20 | M | Student                | Nangkholyang- 5 |            |
| 27 | Sita Rai               | 20 | F | Student                | Nangkholyang-6  |            |
| 28 | Asha Maya Subbha       | 43 | F | Agriculture            | Nangkholyang- 5 |            |
| 29 | Dhan Maya Shrestha     | 25 | F | Agriculture            | Nangkholyang-5  |            |
| 30 | Kishor Upreti          | 20 | M | Student                | Nangkholyang- 5 |            |
| 33 | Krishna Maya Tokoju    | 57 | F | Agriculture            | Nangkholyang-5  |            |
| 34 | Shyam Bahadur Khimding | 43 | M | Agriculture            | Nangkholyang- 5 |            |
| 35 | Sharmila Mukhuya       | 32 | F | Agriculture            | Nangkholyang-5  |            |
| 36 | Santosh Subbha         | 17 | M | Student                | Nangkholyang- 5 |            |
| 37 | Manuka Shrestha        | 31 | F | Agriculture            | Nangkholyang-5  |            |
| 38 | Bal Bahadur Rai        | 42 | M | Business               | Nangkholyang- 6 |            |
| 39 | Parabata Shrestha      | 39 | F | Agriculture            | Nangkholyang-5  |            |
| 40 | Tulshi Maya Shrestha   | 57 | F | Agriculture            | Nangkholyang-5  |            |
| 41 | Janardan Khatiwada     | 44 | M |                        | Nangkholyang- 5 |            |
| 42 | Hom Prasad Rai         | 38 | M | IP Expert              | Kathmandu       |            |
| 43 | Hari Prasad Bhattarai  | 46 | M | Anthropologist         | Kathmandu       |            |
| 44 | Amrit Poudel           | 30 | M | Environmentalist/ HCPL | Kathmandu       |            |
| 45 | Prakash Poudel         | 25 | M | Anthropologist/ HCPL   | Kathmandu       |            |

## Consultation Meeting with the teachers of Nangkholyang

Date: 2067/06/21 (October 07, 2010)

Venue: Nangkholyang- 8, Kuwa Panchami Dada

| S.N | Name                     | Age | Sex | Occupation/<br>Organization | Address         | Contact<br>No. |
|-----|--------------------------|-----|-----|-----------------------------|-----------------|----------------|
| 1   | Devendra Khimding        | 32  | M   | Teacher                     | Nangkholyang- 4 | 9807988309     |
| 2   | Yaggya Prasad Khattiwada | 47  | M   | Teacher                     | Nangkholyang- 3 | 9842773715     |
| 3   | Hem Raj Ktattiwada       | 38  | M   | Teacher                     | Nangkholyang- 5 | 9741122053     |
| 4   | Dil Kumar Rai            | 47  | M   | Teacher                     | Nangkholyang- 8 | 9742609107     |
| 5   | Gangaram Khimding        | 25  | M   | Teacher                     | Nangkholyang- 5 | 9742706144     |
| 6   | Ghana Shyam Poudel       | 50  | M   | Teacher                     | Nangkholyang- 5 | 9842629615     |
| 7   | Hari Prasad Bhatteari    | 46  | M   | Anthropologist              | Kathmandu       |                |
| 8   | Hom Prasad Rai           | 38  | M   | IP expert                   | Kathmandu       |                |
| 9   | Prakash Poudel           | 25  | M   | Anthropologist/HCPL         | Kathmandu       |                |

## Consultation Meeting With the representative of KAHEP Concerned Group

Date: 2067/06/18 (October 04, 2010)

Venue: Bijuli Bhanjyhg Community Forest Office, Faudar Party Amarpur- 6

| S.N | Name of the Participants | Age | Sex | Occupation/<br>(Organization)                         | Address        | Contact No. |
|-----|--------------------------|-----|-----|---|----------------|-------------|
| 1   | Bhabani Prasad Lingden   | 52  | M   | President<br>KEHP-Concern Group                       | Amarpur- 3     | 9742612060  |
| 2   | Dil Bikram Thapa         | 43  | M   | Agriculture/Vice<br>president KHEAP<br>Concern Group) | Amarpur- 7     | 9742638955  |
| 3   | Indra Narayan Adhakari   | 52  | M   | Agriculture   | Amarpur- 6     | 9742605874  |
| 4   | Bhim Wagle               | 32  | M   | Agriculture   | Amarpur- 2     | 9742637100  |
| 5   | Raj Kumar Basnet         | 51  | M   | Agriculture   | Amarpur-8      | 9742046286  |
| 6   | Chhtra Bahadur Katuwal   | 35  | M   | Agriculture   | Amarpur- 8     | 9804910003  |
| 7   | Dipendra Sigu            | 24  | M   | Agriculture   | Amarpur- 9     | 9814958715  |
| 8   | Janardan Khattiwada      | 44  | M   |   | Nangkholyang5  | 9741122053  |
| 9   | Hem Raj Khattiwada       | 38  | M   | Teacher   | Nangkholyang-5 |             |
| 10  | Gopi Krishna Bhandari    | 47  | M   | Business  | Amarpur-4      | 024690013   |
| 11  | Laxmi Prasad Oli         | 44  | M   | Agriculture   | Amarpur- 5     | 9742610562  |

|    |                         |    |   |  |             |            |
|----|-------------------------|----|---|--|-------------|------------|
| 12 | Bhuwani Prasad Lingden  | 59 | M | Social Service                                 | Panchami-1  | 9742601494 |
| 13 | Khadak Bahadur Khaling  | 39 | M | Agriculture                                    | Amarpur-1   | 9742645094 |
| 14 | Amrit Bahadur Basnet    | 55 | M | Agriculture/(President Kholi Panchakanya C.F.) | Amarpur- 6  | 9742629686 |
| 15 | Nar Bahadur Hemba       | 58 | M | Agriculture                                    | Amarpur- 6  | 9742637067 |
| 16 | Chitra Bahadur Karki    | 38 | M | Agriculture                                    | Panchami    | 9742640330 |
| 17 | Ganga Chauhan           | 44 | M | Agriculture                                    | Amarpur- 9  | 9742601580 |
| 18 | Bhim Raj Hemba          | 44 | M | Agriculture                                    | Amarpur- 6  | 9742637008 |
| 19 | Binod Hemba             | 45 | M | Agriculture                                    | Amarpur- 6  | -          |
| 20 | Aaita Raj Hemba         | 45 | M | Agriculture                                    | Amarpur- 6  | 9742636918 |
| 21 | Surya Prasad Hemba      | 21 | M | Agriculture                                    | Amarpur- 6  | -          |
| 22 | Santa Bahadur Khattri   | 25 | M | Agriculture                                    | Amarpur- 9  | -          |
| 23 | Sona Sigu               | 18 | F | PRA-KEL  | Panchami- 8 |            |
| 24 | Prahlad Parsain         | 32 | M | PRA-KEL  | Amarpur- 9  |            |
| 25 | Krishna Bahadur Poudel  | 45 | M | PRA-KEL  | Amarpur- 6  | 9742665308 |
| 26 | Krishna Das Shrestha    | 46 | M | PRO -KEL                                       | Kathmandu   | 9752001382 |
| 27 | Parbat Krishna Pokherel | 29 | M | Admin Officer -KEL                             | Kathmandu   | 9841532467 |
| 28 | Shalik Ram Shigdel      | 30 | M | Botanist-NESS                                  | Kathmandu   | 9841242334 |
| 29 | Abhishek B.C.           | 30 | M | Environmental Engineer (NESS)                  | Kathmandu   | 9841579575 |
| 30 | Hom Prasad Rai          | 38 | M | Indigenous Expert(HCPL)                        | Kathmandu   |            |
| 31 | Hari Prasad Bhattra     | 46 | M | Anthropologist                                 | Kathmandu   |            |
| 32 | Amrit Poudel            | 30 | M | Environmentalist/ HCPL                         | Kathmandu   |            |
| 33 | Prakash Poudel          | 25 | M | Anthropologist/HCPL                            | Kathmandu   |            |



## VDC level Consultation, Amarpur

Date: 2067/06/20 (October 06, 2010)

Venue: Amarpur-7 Ghumtibazar

| S.N | Name                  | Age | Sex | Occupation/<br>Organization | Address    | Contact<br>No. |
|-----|-----------------------|-----|-----|-----------------------------|------------|----------------|
| 1   | Ganga Chauhan         | 44  | M   | Agriculture                 | Amarpur- 9 | 9742601580     |
| 2   | Bhim Raj Hemba        | 44  | M   | Agriculture                 | Amarpur- 6 | 9742637008     |
| 3   | Bhim Hemba            | 27  | M   | Agriculture                 | Amarpur- 6 | -              |
| 4   | Binod Hemba           | 45  | M   | Agriculture                 | Amarpur- 6 | -              |
| 5   | Sujan Limbu           | 25  | M   | Agriculture                 | Amarpur-7  | -              |
| 6   | Bijaya Hemba          | 24  | M   | Agriculture                 | Amarpur-7  | -              |
| 7   | Sunil Limbu           | 22  | M   | Agriculture                 | Amarpur- 7 | -              |
| 8   | Hari Prasad Bhatteari | 46  | M   | Anthropologist              | Kathmandu  | -              |
| 9   | Hom Prasad Rai        | 38  | M   | IP Expert                   | Kathmandu  | -              |
| 10  | Amrit Poudel          | 30  | M   | Environmentalist/HCPL       | Kathmandu  | -              |
| 11  | Prakash Poudel        | 25  | M   | Anthropologist/ HCPL        | Kathmandu  | -              |

## VDC Level Consultation, Thechambu

Date: 2067/06/22 (October 08, 2010)

Venue: Shree Chandashawari Lower Secondary School Thechambu-5 Chifewa Consultation Meeting With the Affected Downstream Communities Date: 2067/06/17 Venue: Amarpur-8 Aapagauda

| S.N | Name of the Participants | Age | Sex | Occupation/<br>(Organization) | Address      | Contact<br>No. |
|-----|--------------------------|-----|-----|-------------------------------|--------------|----------------|
| 1   | Dev Limbu                | 50  | M   | Business                      | Thechambu- 4 | 9742045824     |
| 2   | Ram Kumar Limbu          | 28  | M   | Agriculture                   | Thechambu-5  | 9742637504     |
| 3   | Ram Prakash Limbu        | 22  | M   | Agriculture                   | Thechambu- 6 | -              |
| 4   | Rupa Limbu               | 30  | F   | Agriculture                   | Thechambu-6  | -              |
| 5   | Prasad Singh Limbu       | 63  | M   | Agriculture                   | Thechambu- 5 | -              |
| 6   | Shran Kumar Limbu        | 69  | M   | Agriculture                   | Thechambu- 5 | -              |
| 7   | Khil Lal Devkota         | 64  | M   | Agriculture                   | Thechambu- 6 | -              |
| 8   | Purna Bahadur Limbu      | 49  | M   | Agriculture                   | Thechambu- 5 | -              |
| 9   | Harka Bahadur Manangbo   | 53  | M   | Agriculture                   | Thechambu- 6 | -              |

|    |                       |    |   |                           |              |            |
|----|-----------------------|----|---|---------------------------|--------------|------------|
| 10 | Lila Bahadur Limbu    | 55 | M | Agriculture               | Thechambu- 6 | -          |
| 11 | Dil Prasad Manangbo   | 50 | M | Agriculture               | Thechambu- 5 | -          |
| 12 | Gopal Nepali          | 43 | M | Agriculture               | Thechambu- 5 | -          |
| 13 | Dhoj Man Ratna        | 60 | M | Agriculture               | Thechambu- 5 | -          |
| 14 | Dinesh Limbu          | 38 | M | Agriculture               | Thechambu- 5 | -          |
| 15 | Buddhi Raj Limbu      | 32 | M | Agriculture               | Thechambu- 5 |            |
| 16 | Mahesh Manangbo       | 43 | M | Teacher                   | Thechambu- 5 | 032-691188 |
| 17 | Maham Lal Manangbo    | 79 | M | Agriculture               | Thechambu- 6 | 023-696215 |
| 18 | Kumar Dahal           | 35 | M | Teacher                   | Thechambu-2  | 9842943239 |
| 19 | Sarad Kumar Manangbo  | 70 | M | Agriculture               | Thechambu- 5 |            |
| 20 | Dal Bahadur Dahal     | 62 | M | Teacher                   | Thechambu- 2 |            |
| 21 | Purna Tiwari          | 51 | M | Business                  | Thechambu- 4 |            |
| 22 | Narayan Poudel        | 45 | M | Health workers            | Thechambu- 4 | 9742607326 |
| 23 | Sachin Manangbo       | 25 | M | Student                   | Thechambu- 4 | 023-696405 |
| 24 | Manoj Limbu           | 30 | M | Agriculture               | Thechambu-3  | 9742607172 |
| 25 | Bhim Raj Limbu        |    | M | Agriculture               | Thechambu- 5 | -          |
| 26 | Mangal Kumari Sudha   | 35 | F | Agriculture               | Thechambu- 5 | -          |
| 27 | Machindra Manangbo    | 60 | M | Agriculture               | Thechambu- 5 | -          |
| 27 | Krishna Das Shrestha  | 46 | M | PRO-KEL                   | Kathmandu    | -          |
| 28 | Hari Prasad Bhattarai | 46 | M | Anthropologist            | Kathmandu    | -          |
| 29 | Hom Prasad Rai        | 38 | M | IP Expert                 | Kathmandu    | -          |
| 30 | Amrit Poudel          | 30 | M | Environmentalist/<br>HCPL | Kathmandu    | -          |
| 31 | Prakash Poudel        | 25 | M | Anthropologist /HCPL      | Kathmandu    | -          |

| S.N | Name of the Participants | Age | Sex | Occupation/<br>(Organization) | Address    | Contact No. |
|-----|--------------------------|-----|-----|-------------------------------|------------|-------------|
| 1   | Brikha Bahadur Shrestha  | 52  | M   | Agriculture/Fishing           | Amarpur- 8 |             |
| 2   | Shree Prasad Shitula     | 31  | M   | Agriculture/Fishing           | Amarpur- 8 |             |
| 3   | Dil Bahadur Shrestha     | 32  | M   | Agriculture/Fishing           | Amarpur- 8 |             |
| 4   | Prahlad Bhattarai        | 53  | M   | Agriculture/Fishing           | Amarpur- 8 |             |
| 5   | Laxmi Jogi               | 20  | M   | Agriculture/Fishing           | Amarpur- 8 |             |

|    |                       |    |   |                       |            |            |
|----|-----------------------|----|---|-----------------------|------------|------------|
| 6  | Dal Bahadur Shrestha  | 43 | M | Agriculture/Fishing   | Amarpur- 8 |            |
| 7  | Bir Bahadur Shrestha  | 42 | M | Agriculture/Fishing   | Amarpur- 8 |            |
| 8  | Bom Bahadur Neupane   | 32 | M | Agriculture/Fishing   | Amarpur- 8 |            |
| 9  | Januka Shrestha       | 24 | F | Agriculture/Fishing   | Amarpur- 8 |            |
| 10 | Bir Bahadur Jogi      | 28 | M | Agriculture/Fishing   | Amarpur- 8 |            |
| 11 | Raj Kumar Jogi        | 17 | M | Agriculture/Fishing   | Amarpur- 8 |            |
| 12 | Hom Prasad Rai        | 38 | M | IP Expert             | Kathmandu  | -          |
| 13 | Hari Prasad Bhattarai | 46 | M | Anthropologist        | Kathmandu  | -          |
| 14 | Amrit Poudel          | 32 | M | Environmentalist/HCPL | Kathmandu  |            |
| 15 | Prakash Poudel        | 25 | M | Anthropologist/HCPL   | Kathmandu  | 9841746447 |