

# ENVIRONMENTAL & SOCIAL ASSESSMENT, PLANNING & DESIGN

## Draft Terms of Reference

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### **Upper Arun and Ikhuwa Khola Hydroelectric Projects**

First Consultation Workshop

April 30, 2014

Nepal Electricity Authority (NEA)



# Objectives of the studies

**Over-arching:** Ensure the Project is environmentally and socially sustainable, and meets requirements of relevant national laws, World Bank policies, and applicable international conventions and treaties

## **Specific:**

- **Determine potential environmental and social impacts** of the Project (including transboundary and global impacts)
- **Influence decisions about Project design, construction and operation**, to avoid or reduce negative impacts and enhance positive impacts
- **Develop mitigation and management measures** for residual negative impacts
- Ensure affected people at least retain their pre-Project living standards, and are able to **share Project benefits**
- **Facilitate stakeholder involvement** in Project planning and implementation

# The Project

- **Upper Arun Hydroelectric Project (UAHP)**
- **Ikhuwa Khola Hydroelectric Project (IKHP)**
- **Ancillary and “linked”\* activities** related to each -- e.g. transmission lines, access roads, contractor camps, spoil and waste rock disposal areas, borrow areas, quarries, NEA staff housing, etc.
- \* “linked activities” are defined by World Bank policies as *activities which are directly related, necessary to achieve the Project objectives, and planned to be carried out contemporaneously*

All the above collectively comprise –  
**The Project**

# What guidelines will the studies and activities follow?



**Laws and regulations of the Government of Nepal, including international conventions and treaties to which GoN is signatory**



## **World Bank Operational Policies**

- Safeguard Policies
- Environmental, Health, and Safety (EHS) Guidelines

Standards of other development partners who are known at time of study execution, and other relevant international best practices

# Applicable GoN requirements on Environmental and Social Assessment

## **National Acts/Rules**

- Environment Protection Act, 1997 (2053 BS)/Rules, 1997(2054 BS)
- Aquatic Animal Protection Act, 1960 (2017 BS)
- National Park and Wildlife Conservation Act, 1973 (2029 BS)
- Land Acquisition Act, 1977 (2034 BS)
- Water Resources Act, 1992 (2049 BS)/Regulations,1993 (2050 BS)
- Electricity Act, 1992 (2049 BS)/Rules, 1993 (2050 BS)
- Forest Act, 1993 (2049 BS)
- Buffer zone Management Rules, 1996 (2052 BS)
- **International Conventions and Treaties to which GoN is signatory**
- Convention on International Trade in Endangered Species of Wild Fauna & Flora (CITES)
- ILO Convention of Indigenous and Tribal Peoples (No.169)

# Environment Protection Act/Rules, 1997

- Sections 3, 4, 5 and 6 of the EPA, 1997 have explicitly mentioned the need for undertaking Environmental Impact Assessment (EIA).
- Proposals EIA have been included in Schedule (2) of the EPR.

(Schedule-2E : Water Resources and Energy Sector)

- Electricity generation project with a capacity of more than 50 MW
- Displacement of 100 people with permanent residence
- Clear felling of national forest with an area of more than 5 ha (Schedule-2A Forestry Sector)
- Construction of development project in National Park, Wildlife Reserve, Conservation Area and Wetlands(Schedule- 2K)

# Applicable World Bank safeguard policies

- **Environmental Assessment (“umbrella”) policy**  
objectives:
  - To help ensure the environmental and social soundness and sustainability of investment projects
  - To support integration of environmental and social aspects of projects into the decision making process

# Applicable World Bank safeguard policies

- **Natural habitats**
- **Forests**
- **Physical Cultural Resources**
- **Dam Safety**
- **Pest Management**
- **International Waterways**
- **Indigenous Peoples**
- **Involuntary Resettlement**



# Requirements for consultation (WB and GoN)

- Mandated by World Bank (Environmental Assessment, Involuntary Resettlement and Indigenous Peoples) Policies
- Mandated by GoN
- A two-way process in which beneficiaries provide advice and input on the design of proposed projects that affect their lives and environment
- Promotes dialogue between governments, communities, NGOs and implementing agencies to discuss all aspects of the proposed project
- Undertaken during both project preparation and implementation – it is **an ongoing process**

# Who will conduct the studies and activities?

- An independent consulting firm (or consortium) with a multi-disciplinary team
- Team to include both international and national experts with relevant prior experience

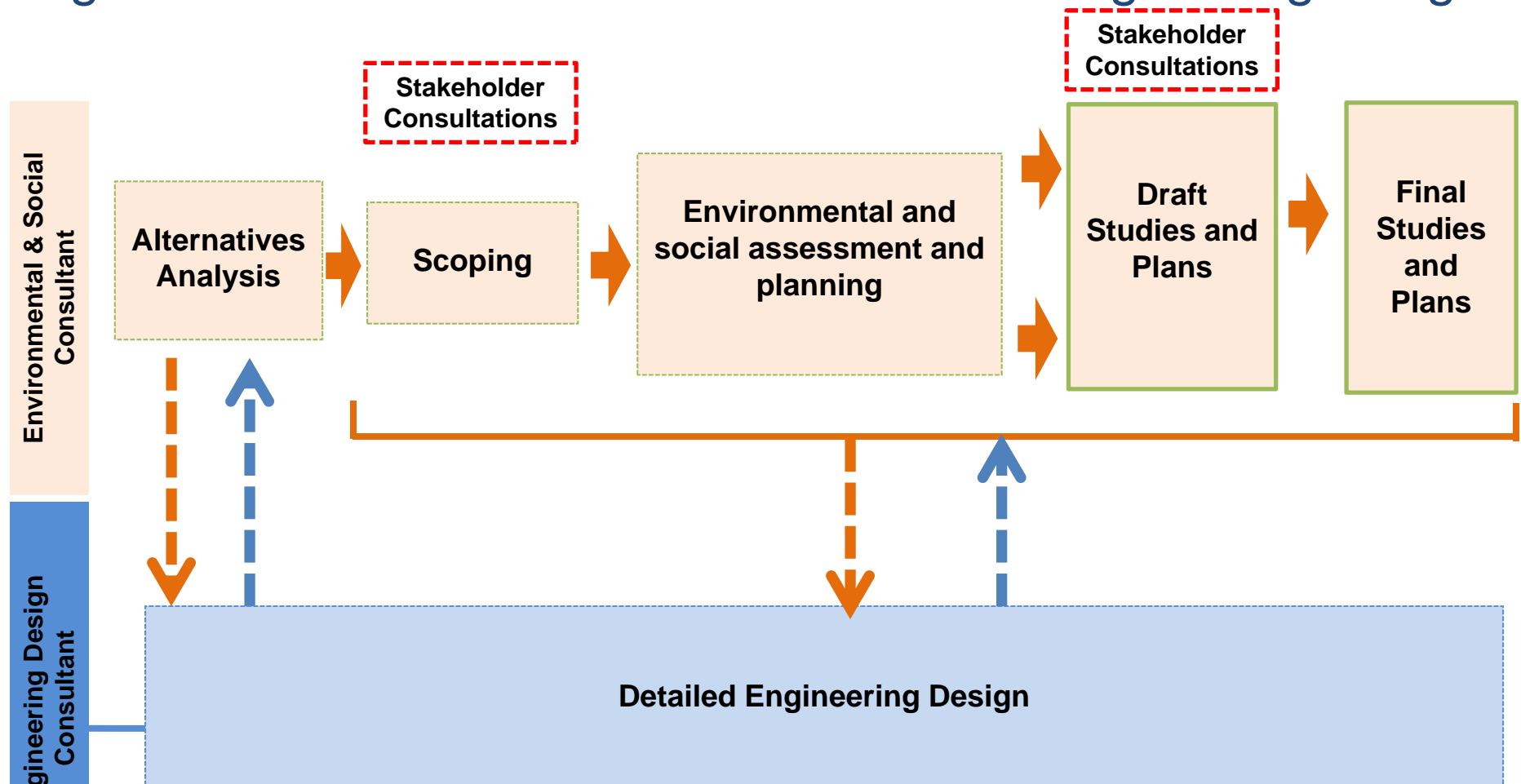


**Consultant Core Team – led by Team Leader**

# Independent Panels of Experts

- To be contracted separately by NEA in accordance with World Bank safeguard policy requirements, in light of:
  - size and complexity of project and its potential significant environmental and social impacts
  - Inclusion of large dam (>10m height)
- **Environmental and Social Panel of Experts:**
  - Will provide guidance throughout the environmental and social assessment and planning process and during implementation
  - Will review draft and final deliverables of consultancy, as part of the Government's review and approvals process
- **Dam Safety Panel of Experts:** will provide guidance and independent review on technical aspects of dam design, construction, and operation

## Progression of E&S studies and interaction with Engineering Design



- NEA responsible to ensure smooth interaction between E&S Consultant and Engineering Consultant
- Stakeholder engagement throughout (beyond formal consultation events)

# Specific Study Outputs

## Phase I

- Environmental and Social Input into Analysis of Project Alternatives

## Phase II

- Task 1 : **Scoping** -> detailed outlines and work plans for each study
- Task 2: **Environmental and Social Impact Assessment(s)** (ESIA), including as key elements:
  - Baseline
  - Impact Assessment, including Cumulative Impact Assessment
  - Analysis of Alternatives (from Phase I)
  - Environmental and Social Management Plans (ESMPs)
- Task 3: Specific complementary **Social Planning and Design Studies**

**Phase I:**  
**Environmental and Social Input into**  
**Analysis of Project Alternatives**

# Analysis of Alternatives: Scope

- **“Without project” alternative**
- **Alternatives to meet national energy demand**

- Alternative energy supply sources
- Energy efficiency investment alternatives

- **Project design alternatives**

- Dam and facility siting
- Access road and transmission line alignments
- Other project design aspects, including peaking power generation type
- Phasing and construction techniques

Analyze environmental and social aspects of energy sector planning processes leading to the current project concept; compare project with other energy options for Nepal on social and environmental grounds

Evaluate design options and identify alternatives to minimize negative social and environmental impacts and maximize positive impacts, to influence decision making about final project design aspects

**Output: Alternatives Analysis Report**

## **Phase II:**

# **Detailed Environmental and Social Impact Assessment, Planning and Design Studies**

**Task 1: Scoping of Studies**

**Task 2 : ESIA**

**Task 3 : Social Planning**



# Task 1: Scoping of Studies

***For the chosen basic project design alternative, consultant to...***

- Determine project **Area of Influence**
- Identify and scope **priority social and environmental issues** to focus on in the studies
- Identify and map stakeholders, and **develop initial stakeholder consultation strategy and plan for preparation stage**
- **Carry out stakeholder consultations to identify key issues**
- **Finalize the detailed Terms of Reference / outlines** for specific environmental and social assessment and planning studies to be undertaken

**Output:** Inception Report, detailed Work Plan

# Defining Area of Influence (Aol)

**All areas which may experience *direct, indirect, induced or cumulative* impacts, for example:**

- Direct footprint of all project facilities and ancillaries
- Areas used for livelihood activities (hunting, fishing, grazing, gathering, agriculture, etc.), or religious or ceremonial purposes which may be affected by the Project
- Areas required for resettlement, offsets, or other mitigation measures
- Arun River watershed (including transboundary areas), especially areas where land use changes may affect erosion and sedimentation rates, landslide risk, etc. and/or where the project may induce land use or aquatic changes
- Areas of *demonstrable ecological connectivity* to directly affected areas:
  - Aquatic habitat: both upstream and downstream, including tributaries, spawning or feeding areas for affected aquatic species, etc.
  - Forests, other terrestrial habitats of importance to migratory species, etc.

# Stakeholder consultation for scoping task

- VDC level stakeholder consultation meetings in each Project affected VDC
- Meeting with Buffer Zone Management Authority and Makalu Barun National Park Authority
- District level stakeholder meeting, targeting District Forest Office, DDC Office, District Administration Office, District Education Office, District Agriculture Development Office, local NGOs working in the area, etc.
- Central Level workshop in Kathmandu (similar audience as the current event)

## Task 2: ESIA

The next section of the presentation focuses on the *core* elements of environmental and social assessment and planning process:

- Baseline
- Impact Assessment (including Cumulative Impact Assessment)
- Environmental and Social Management Plans

The *output* is one or more ESIA documents, encompassing relevant management plans. **We would like *your feedback* on the proposed areas of focus and issue coverage of this process.**

Social assessment and planning is discussed in more detail under Task 3.

## Task 2: ESIA - Baseline studies (1)

**Field work and secondary research of entire Aol, to establish:**

- **Physical context, including for example:**
  - Hydrology, including the Aol's context in full trans-boundary watershed
  - Sediment movement, sedimentation, and erosion
  - Water quality
  - Geology, geomorphology, and seismology
  - Landslide and other natural hazard propensity
  - Climate change projections and their implications for hydrology, flood profiles, and ecological effects
  - Physical cultural resources
- **Biological context, including for example:**
  - Aquatic and terrestrial flora and fauna (identify endemic, protected, threatened, culturally or economically important), migratory routes, breeding areas, etc.
  - Aquatic and terrestrial natural habitats and critical natural habitats (including Makalu Barun NP and Buffer Zone)

## Task 2: ESIA - Baseline studies (2)

- **Socioeconomic and cultural context, including:**
  - Water use and users (upstream and downstream)
  - Land use and land tenure
  - Demography and ethnicity
  - Livelihood activities
  - Socioeconomic development status
  - Community health
  - Indigenous and vulnerable peoples
- **Other development activities in the basin which may be relevant for Cumulative Impact Assessment**

## Task 2: (ESIA) – Impact Assessment

- Identification and Analysis of Positive and Negative Impacts:

- Direct
- Indirect
- Induced
- Cumulative



...for construction and operation phases of all Project components

...determine significance

...identify mitigation and management measures (negative) and enhancement measures (positive)

## Task 2: (ESIA): Impact Assessment **key** issues

- Changes to downstream flow rates and patterns, velocities, water depth and water quality
- Loss of river connectivity -> impacts to migratory fish and biodiversity
- Ecological flow analysis -> to establish minimum flow required for ecological, socioeconomic, cultural/religious, and recreational functions
- Degradation or loss of natural habitat and critical natural habitat, including forests
- Impacts of sediment movement, sediment deposition, and erosion



## Task 2: (ESIA): Impact Assessment **key** issues

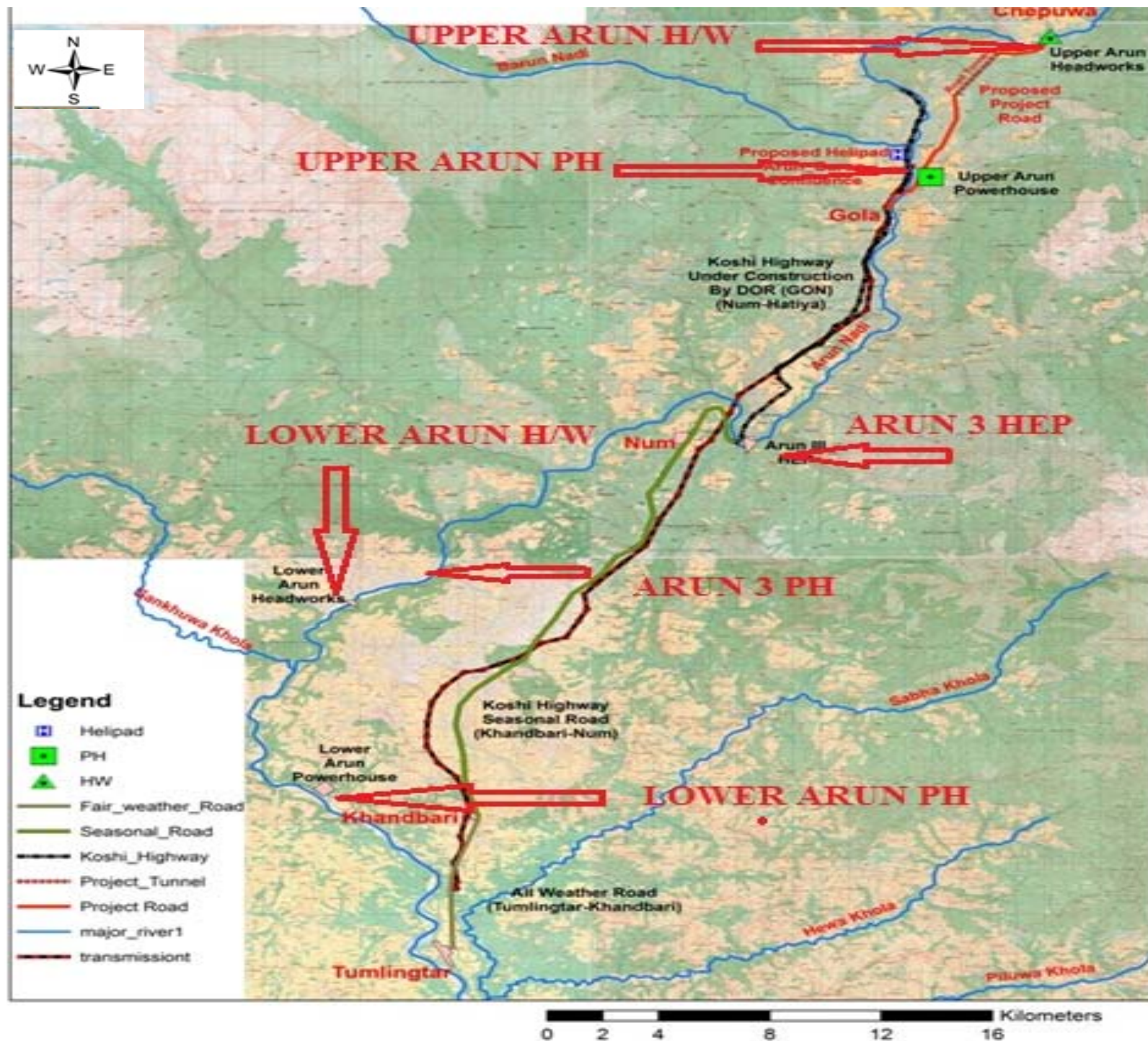
- Downstream impacts related to peaking pond flushing
- Changes in drainage patterns
- Environmental impacts related to land acquisition and resettlement
- Public health impacts
- Traffic safety
- Induced impacts from Project-related influx: increased stress on natural resources (especially forests), pollution and waste management issues, strain on local services and infrastructure, safety issues for the local community etc.
- Additional social impacts discussed in more depth later in presentation

### FOR DISCUSSION:

- ANY CRITICAL ELEMENTS MISSING?
- SPECIFIC CONSIDERATIONS FOR EACH OF THE ABOVE?

## ESIA example methodology: Assess significance

		Likelihood of Impact		
		Low likelihood	Moderate likelihood	High likelihood
Severity / Magnitude of Impact	Low severity or magnitude	Insignificant	Minor significance	Minor significance
	Moderate severity or magnitude	Minor significance	Moderate significance	Moderate significance
	Severe or high magnitude	Moderate significance	High significance	Very high significance



## Task 2: Cumulative Impact Assessment

- Identify reasonably foreseeable or ongoing development activities which may impact Arun basin flow regime, water demand, water quality, erosion/sedimentation propensity, etc.
- Identify and prioritize Valued Environmental (and Social) Components – **VECs**:
  - Components that are vulnerable to expected hydrological or water quality changes from the stressors
  - Examples: key sensitive species, fisheries, irrigated agriculture drawing from river, etc.
- Assess impacts, propose mitigations – (a) to be implemented by the project, and (b) to be implemented by GoN and other actors more broadly

**FOR DISCUSSION: WHAT SHOULD BE THE VECs?**

## Task 2: Environmental and Social Management Plans (ESMPs)

Examples of **sub-plans** to develop include:

- Ecological flow specification and management
- Aquatic ecology management, including fish and fisheries restoration measures
- Terrestrial ecology and wildlife management
- Natural habitats conservation offset program
- Makalu Barun Buffer Zone management program
- Erosion prevention and sediment management, including: upper watershed management and restoration, sediment flushing and management, afforestation, etc.
- Construction management (including land clearing, camps, hazardous substances, wastes, spoils, etc.)
- Occupational health and safety management
- Dam safety and emergency management
- Traffic safety
- Specific social plans described in next section of presentation



## Task 2: Environmental and Social Management Plans (ESMPs)

- Each sub-plan to include:
  - Specific measures
  - Implementation arrangements and responsibilities
  - Monitoring indicators and requirements
  - Reporting requirements
  - Timeline
  - Budget
  - Assessment of institutional capacity for implementation, and capacity strengthening measures

### FOR DISCUSSION:

- ANY CRITICAL ELEMENTS MISSING?
- SPECIFIC CONSIDERATIONS FOR EACH OF THE ABOVE?

## Task 3: Social Planning - Assessments

- Establishing socioeconomic baseline in the Project area
- Stakeholder analysis
- Political economy analysis
- Impact identification and assessment
- Gender assessment
- Public health service and need assessment
- Communication needs assessment
- Institutional assessment

## Task 3: Social Planning – methodology

- **Collection and desk review** - relevant legal policy framework in Nepal, past operational experiences, government statistics and academic research;
- **Field surveys** – on sample and census basis, using different sociological tools, to be designed for different planning activities by selected consultant teams;
- **A continuous consultative and participatory process**, involving relevant stakeholders for their contribution, ownership and support of the planned interventions;
- **Documentation and dissemination** of planning findings and interventions for **further stakeholder input** before their submission for review and approval
- **Review and approval** by GoN, Panel of Experts and relevant financiers



## Task 3: Social Planning – key outputs

- Social Assessment - documenting findings on socioeconomic baseline, stakeholder analysis, political economy analysis, impact screening and consultation feedback
- Land acquisition and resettlement action plan
- Vulnerable and indigenous peoples plan
- Downstream impacts management plan
- Gender strategy and action plan
- Approach and measures on benefit-sharing with local communities
- Public health action plan
- Public participation and consultation plan
- Communications strategy and action Plan
- Institutional strengthening plan

# Next Steps

- Finalize TOR addressing feedback received: May, 2014
- Commission ESIA studies:
- Execute studies (including additional stakeholder engagement)
- Disclose final products
- Implementation of Resettlement Action Plan and other key mitigation measures

# Q&A and Discussion

## FOR DISCUSSION:

- 1) Task 2: (ESIA): Impact Assessment **key** issues
  - ANY CRITICAL ELEMENTS MISSING?
  - SPECIFIC CONSIDERATIONS FOR EACH OF THE ABOVE?
- 2) Task 2: Cumulative Impact Assessment
  - WHAT SHOULD BE THE VECs?
- 3) Task 2: Environmental and Social Management Plans (ESMPs)
  - ANY CRITICAL ELEMENTS MISSING?
  - SPECIFIC CONSIDERATIONS FOR EACH OF THE ABOVE?

# Project Contacts & Information

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