

Terms of Reference (ToR)
for
Initial Environmental Examination (IEE)
of
Bhotechour-Kauledovan Road Sub-Project

Submitted to:
**Ministry of Local Development,
Government of Nepal**

Proponent:
District Development Committee (DDC)
District Technical Office (DTO)
Sindhupalchowk
Telephone No. - 011-620338
Fax No. - 011-620087

December 2008

TABLE OF CONTENT

1.0	NAME AND ADDRESS OF THE PROPONENT	1
2.0	INTRODUCTION.....	1
2.1	GENERAL INTRODUCTION.....	1
2.2	BACKGROUND OF THE SUB-PROJECT	1
2.3	OBJECTIVES.....	5
2.4	RELEVANCY OF THE SUB-PROJECT	5
3.0	REVIEW OF RELEVANT LAWS, RULES AND GUIDELINES	5
4.0	PROCEDURE TO BE ADOPTED WHILE PREPARING THE REPORT	6
4.1	DESK REVIEW.....	6
4.2	PUBLIC CONSULTATION AND INFORMATION DISCLOSURE.....	6
4.3	FIELD WORK.....	6
5.0	ALTERNATIVES FOR THE IMPLEMENTATION OF THE PROPOSAL.	7
6.0	REQUIREMENT OF THE IEE STUDY.....	7
6.1	TIME SCHEDULE.....	7
6.2	ESTIMATED BUDGET AND STUDY TEAM.....	7
7.0	ENVIRONMENTAL BASELINE.....	8
8.0	ANALYSIS AND INTERPRETATION	8
9.0	IDENTIFICATION, PREDICTION AND EVALUATION OF IMPACT	8
9.1	BENEFICIAL IMPACTS.....	8
9.2	ADVERSE IMPACTS	9
10.0	BENEFIT AUGUMENTATION/MITIGATION MEASURES	10
11.0	ENVIRONMENTAL MANAGEMENT PLAN	10
12.0	IEE REPORT FORMAT	11

TABLES

TABLE 1. PROPOSED WORK SCHEDULE	7
--	----------

FIGURE

FIGURE 1. MAP OF NEPAL SHOWING THE LOCATION OF BHOTECHOR-KAULEDOVAN ROAD SUB-PROJECT IN SINDHUPALCHOWK DISTRICT	3
--	----------

FIGURE 2. MAP OF SINDHUPALCHOWK DISTRICT SHOWING BHOTECHOR-KAULEDOVAN ROAD SUB-PROJECT	4
---	----------

ABBREVIATIONS

ADB	Asian Development Bank
Ch	Chainage
CF	Community Forest
CISC	Central Implementation Support Consultants
CITES	Convention on International Trade in Endangered Species of Flora and Fauna
DDC	District Development Committee
DG	Director General
DIST	District Implementation Support Team
DoLIDAR	Department of Local Infrastructure Development and Agricultural Roads
DPO	District Project Office
DPCC	District Project Coordination Committee
DTO	District Technical Office
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management Section
EPA	Environmental Protection Act
EPR	Environmental Protection Rules
FGD	Focus Group Discussion
GoN	Government of Nepal
IEE	Initial Environmental Examination
IUCN	The World Conservation Union
Km	Kilometer
LEP	Labour based, environment friendly and participatory
MLD	Ministry of Local Development
NGO	Non-Governmental Organization
PAM	Project Administrative Memorandum
PCU	Project Coordination Unit
REA	Rapid Environmental Checklist
RRRSDP	Rural Reconstruction and Rehabilitation Sector Development Project
SDC	Swiss Agency for Development and Cooperation
SDS	Social Development Specialist
SM	Social Mobilizer
SMO	Social Mobilization Officer
TA	Technical Assistance
ToR	Terms of Reference
VDC	Village Development Committee
ZoI	Zone of Influence

1.0 NAME AND ADDRESS OF THE PROPONENT

The District Development Committee (DDC)/District Technical Office (DTO), Sindhupalchowk is the executing agency at the district level and the proponent of the Initial Environmental Examination (IEE) study for the rehabilitation and construction of Bhotechor-Kaledovan road sub-project. The Ministry of Local Development (MLD) is the concerned authority for the approval of IEE study report.

Address of the Proponent

District Development Committee (DDC)
District Technical Office (DTO)
Chautara, Sindhupalchowk
Telephone No. – 011-620377, 011-620338
Fax No. – 011-620087

2.0 INTRODUCTION

2.1 GENERAL INTRODUCTION

The Rural Reconstruction and Rehabilitation Sector Development Project (RRRSDP) covers 20 districts spread over the country, which focuses on immediate post conflict development priorities for accelerated poverty reduction and inclusive development, thereby enhancing the effectiveness and efficiency of the delivery of public services, and improving access of rural people to economic opportunities and social services.

RRRSDP is funded by grant assistance from the Asian Development Bank (ADB); loan assistance from OPEC fund for International Development, counterpart fund of GoN, grant from DFID and Swiss Agency for Development and Cooperation (SDC). The coordinating government department is the Department for Local Infrastructure Development and Agricultural Roads (DoLIDAR), under the Ministry of Local Development (MoLD).

FRISA/ITECO joint venture (in association with SKAT) on behalf of SDC are District Implementation Support Team (DIST) for RRRSDP and have the responsibility of providing technical assistance in four districts; Kabhrepalanchowk, Sindhupalchowk, Dolakha and Sindhuli. In order to ensure that the road selected by the DDC for implementation under the project fulfils the road selection criteria as mentioned in the RRP, DIST is required to carry out a walkover survey and verify if the road proposed fulfils the criteria.

This Terms of Reference (ToR) is prepared to conduct an IEE study of Bhotechor-Kaledovan road sub-project in Sindhupalchowk District.

2.2 BACKGROUND OF THE SUB-PROJECT

Bhotechor-Kaledovan Road is one of the important roads of district which links Sindhupalchowk district to Kathmandu District at one end and to audit road of Melanchi Water Supply Project on the other end. Considering such exposure, this road alignment

was given high priority during 15th District Council (*Jilla Parishad*) and was proposed for rehabilitation under RRRSDP. This section of the road alignment was rehabilitated under DRSP in year 2001-2002 and it has been carried out the periodic and routine maintenance regularly until July 2007.

The proposed Bhotechor-Kaledovan road sub-project lies in the South-west part of Sindhupalchowk district of Central Development region of Nepal. This sub-project starts from Jarke khola of Bhotechaur Village Development Committee (VDC) and ends at Piple of Thakani VDC. In Between the road passes through Haibung VDC. Major settlements along the road alignment are Bhotechour, Nibugawn, Jaisegawn, Patibhangyang, Kaledova and Piple.

This alignment is one of the oldest vehicle pliable alignments of the district; it was constructed during B.S.2052 with the fund support from MoLD, DDC and VDC. The alignment starts from Jarke Khola which is the boarder of Kathmandu and Sindhupalchok district. The total length of Bhotechor-Kaledovan road sub project is 10.83 km.

Distance from Sankhu to Bhotechour is 12 km which is seasonal rural road. Thus, till this section is not made all weather road, full utilization of Bhotechour Kaledovan will not be obtained specially during rainy season. However, as other end of this road links to audit road of Melamchi Water Supply Project which is gravelled road gives good access to Melamchi Bazaar which is one of the major market center of the district.

Construction of this road will provide physical and economical access to the people of South-west part of the district with district headquarter and other part of Nepal.

The location and alignment of the road is given in Figure 1 and 2.

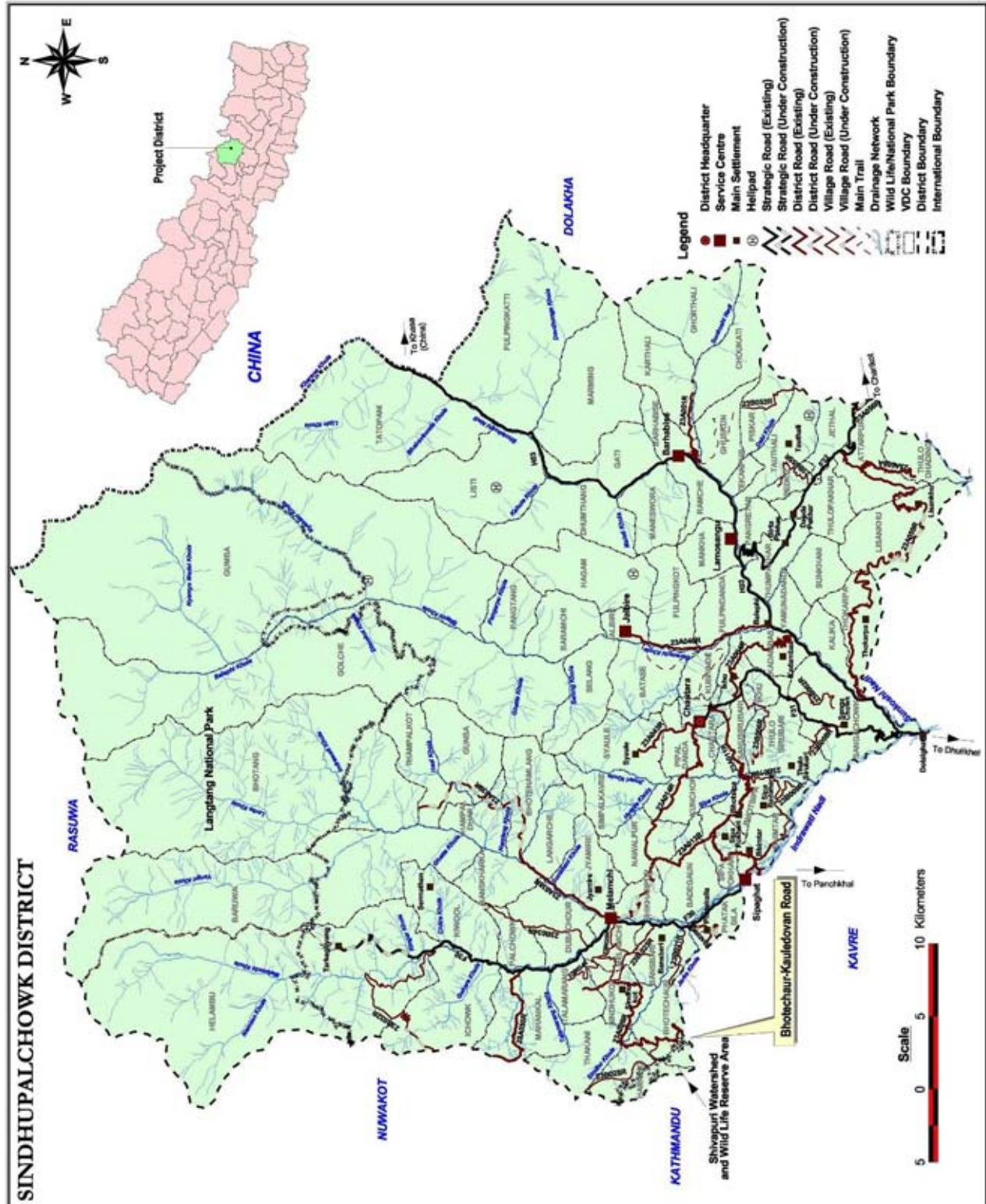


Figure 1. Map of Nepal showing the location of Bhotechor-Kauleodan road sub-project in Sindhupalchowk district

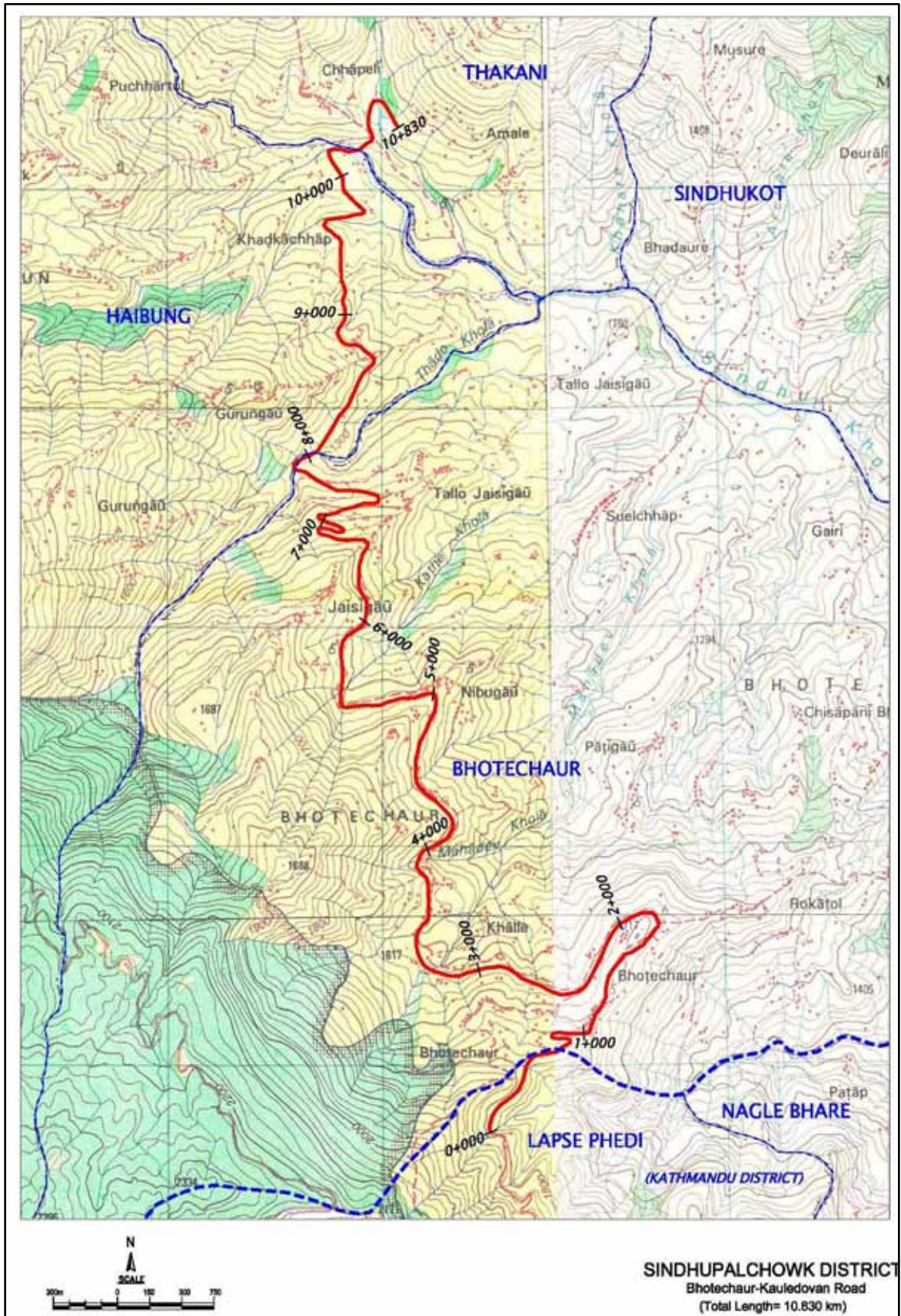


Figure 2. Map of Sindhupalchowk district showing Bhotechor-Kauledivan road sub-project

2.3 OBJECTIVES

The objectives of the proposed IEE study includes to:

- identify the major issues that may arise as a result of proposed works on bio-physical, socio-economic and cultural environment of the project area,
- recommend practical and site specific environmental mitigation and enhancement measures, prepare and implement environmental monitoring plan for the sub-project,
- make sure that IEE is sufficient for the proposed road sub-project, and
- provide information on the general environmental setting of the sub-project area as baseline data.

2.4 RELEVANCY OF THE SUB-PROJECT

The district headquarter is linked with Kathmandu by Araniko highway. Main means of transportation for the large area of the district is motorable roads which can not be operated during rainy season. Consequently, transportation of goods and services from the market centers to the rural areas and vice-versa has been difficult, insufficient and costly. It is one of the shortest routes joining Kathmandu and Sindhupalchowk district via Melamchi. The proposed road sub-project connects several VDCs of south western part of district to the Melamchi audit marga and Sankhu-Bhotechour road and hence facilitates the easy access to Kathmandu and district headquarters of Sindhupalchowk.

An IEE of the proposed road is necessary in order to assess the environmental consequences of the proposed rural road construction activities and suggest appropriate, practical and site specific mitigation and enhancement measures. Since this is a district road, an IEE is a legal requirement according to Environmental Protection Act, 1997 (EPA, 1997) and Environmental Protection Rules, 1997 (EPR, 1997). Preparation of IEE report by concerned District Development Committee (DDC) and approval by the Ministry of Local Development (MLD) according to Nepali legal provision is considered sufficient by the ADB. However, rapid environmental assesment (REA) checklist will also be considered during IEE report preparation based on ADB Environmental Guideline.

3.0 REVIEW OF RELEVANT LAWS, RULES AND GUIDELINES

Government of Nepal has adopted various acts, regulations and guidelines to ensure the integration of development and conservation of environment. The IEE study will be guided by the requirements and provisions of the following acts, rules and guidelines as applicable.

- Environment Protection Act, 1997 and Environment Protection Rules, 1997 (amended 1999)
- Forest Act, 1993 and Forest Rules, 1995
- *Batabaraniya Nirdesika* (Nepal; MLD), 2057
- National Park and Wildlife Conservation Act, 1973
- Local Self Governance Act, 1999 and Local Self Governance Rules, 2000
- Land Acquisition Act, 1977 and Land Acquisition Rules, 1969
- National Environmental Impact Assessment Guidelines, 1993
- APPROACH for the Development of Agricultural and Rural Roads, 1999 (DoLIDAR)

- RRRSDP Environmental Assessment & Review Procedures (EARP) guidelines, 2007
- REFERENCE MANUAL for Environmental and Social Aspects of Integrated Road Development, 2003 (Department of Road)
- Green Roads in Nepal, Best Practices Report – An Innovative Approach for Rural Infrastructure Development in the Himalayas and Other Mountainous Regions. GTZ, SDC, 1999.
- ADB Environmental Assessment Guidelines, 2003
- Three Years Interim Plan, 2007/08-2009/10

4.0 PROCEDURE TO BE ADOPTED WHILE PREPARING THE REPORT

The IEE approach, methodology and procedure should generally follow the provisions of the EPA and EPR. In this connection, following approach and methodology will be adopted during the IEE report preparation.

4.1 DESK REVIEW

The following steps will be followed during the desk review:

- Collection and review of secondary sources of information from various sources
- Initial interaction and consultation with the local community and district level stakeholders
- Delineation of geographical boundary of the Zone of Influence (ZoI) on the topographical map
- Preparation of project specific checklist

4.2 PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

The role of public consultation and participation is to ensure the quality, comprehensiveness, effectiveness of IEE as well as to ensure that the public view's are adequately taken into consideration in the decision making process. It is done during the preparation of an IEE. In order to ensure the public involvement, the following procedures will be followed during IEE report preparation:

- Publication of notice- A public notice of 15 days will be published in a national level daily newspaper seeking written opinion from concerned VDCs, DDC, school, health posts and related local organizations. A copy of the public notice will be affixed in the above mentioned organizations and deed of enquiry (*muchulka*) will be collected.
- Recommendation letter from concerned VDCs and/or municipality will also be obtained.
- IEE team will also carryout interaction with local communities and related stakeholders and will also collect the public concerns and suggestions.
- Draft IEE report will be sent to concerned VDCs for information disclosure.
- The approved IEE report will be made accessible to interested parties and general public through information center of DDC and websites of ADB, DoLIDAR and RRRSDP.

4.3 FIELD WORK

The IEE team will walk through along the road alignment visiting the significant environmental features in the probable influence corridor, and make necessary measurements, inspect/observe and discuss it with the local stakeholders. The

information collection will be made covering physical, biological, socio-economic and cultural aspects of the environment.

5.0 ALTERNATIVES FOR THE IMPLEMENTATION OF THE PROPOSAL

Alternative analysis has been considered as an integral part of IEE study, which involves an alternative ways of achieving the objectives of a proposed sub-project. The aim of alternative analysis is to arrive at a development option, which maximizes the benefits while minimizing the unwanted impacts.

The study team will conduct alternative analysis considering the following issues:

- No action option
- Project alternatives
- Alternative alignment
- Alternative design and construction approach
- Alternative schedule and process
- Alternative resources

6.0 REQUIREMENT OF THE IEE STUDY

This includes time schedule, estimated budget and appropriate manpower (experts) for conducting IEE study.

6.1 TIME SCHEDULE

IEE report will be completed within eight weeks after the approval of ToR. An indicative time frame for conducting IEE is given in the table 1 below:

Table 1. Proposed work schedule

SN	Activities	Week							
		1	2	3	4	5	6	7	8
1	Orientation training to the team	■							
2	Desk study and review		■						
3	Public notice publication			■					
4	Field visit for survey and consultation with community			■	■				
5	Collection of suggestions and recommendations from stakeholders					■			
6	Analysis and interpretation						■		
7	Draft report preparation							■	
8	Comments on draft report								■
9	Final Report preparation and submission								■
10	Approval of the final report.								

6.2 ESTIMATED BUDGET AND STUDY TEAM

Most commonly an IEE of an infrastructure sub-project in the district need expert inputs from the following sectors:

- Landslides, slope stability, bio-engineering and erosion

- Forestry and wildlife
- Geology
- Road engineering
- Social, economic and culture.

The IEE will be carried out and prepared by DIST Environmental Specialist, with support from DIST team Sindhupalchowk, Environmental Specialist (CISC) and District Project Office (DPO). In the preparation of the IEE, CISC Environmental Specialist will provide the necessary training to DIST. The activity of IEE preparation will be supervised by DPO office. Since, the IEE report will be prepared by the DIST team with the support of the CISC, no separate budget and manpower is required. However, if needed specific subject matter experts will be hired for short term input.

7.0 ENVIRONMENTAL BASELINE

This will describe environmental setting of the project location and surrounding areas and will contain information on relevant bio-physical, socio-economic and cultural factors and features. The updated, processed and analyzed information and data on each of the relevant bio-physical, socio-economic and cultural aspects will be presented in the IEE study. As far as possible, other environmental features such as, sensitive area, population and settlements, forests, geological features will be shown in the map.

8.0 ANALYSIS AND INTERPRETATION

Both secondary and primary information and data collected will be analyzed and interpreted. The bio-physical information will be tabulated to the extent possible. The socio-economic, cultural and religious information will be cross checked and analyzed.

9.0 IDENTIFICATION, PREDICTION AND EVALUATION OF IMPACT

The identification and prediction of impacts shall be carried out by considering the proposed project actions/activities in terms of rehabilitation and construction of the road project. The impacts of the activities shall be on bio-physical, socio-economic and cultural resources in a defined zone of influence (i.e. 1.5 hours walking distance from the road alignment or 5 km distance).

The impacts shall be classified in terms of extent (site specific, local and regional), magnitude (low, medium and high) and duration (short term, medium term and long term) as well as reversible, irreversible, severe, moderate and significant. The likely impact shall be assessed covering both adverse and beneficial ones. The methodology adopted for impact identification and prediction will be checklists and matrix method. The likely impacts of the proposed road construction as well as operation are described in the following sections.

9.1 BENEFICIAL IMPACTS

Beneficial impacts due to the construction of the road shall be assessed by the study team in terms of impacts on physical, biological, socioeconomic and cultural systems of the project area. The impacts shall also be assessed in the category of extent, duration and magnitude. Based on the identification and prediction of the impacts, the suitable enhance

measures to maximize the project benefits shall be explored and designed. The largest beneficial impacts will be on the physical and socio-economic environment as given below:

9.1.1 Construction Stage

- Employment Generation and Increase in Income
- Skill Enhancement
- Enterprise Development and Business Promotion
- Community Empowerment and Ownership

9.1.2 Operation Stage

- Access to Inputs and Services`
- Development of Market centers
- Appreciation of Land Value
- Increased Crop Productivity and Sale of Farm Products
- Enhancement of Community Development Services
- Promotion of Tourism Activity
- Women Empowerment and Indigenous People Empowerment

9.2 ADVERSE IMPACTS

The likely adverse impacts during construction and subsequent operation and maintenance in terms of physical, biological, socioeconomic, cultural and religious aspects due to project actions shall be identified, predicted and evaluated. Based on the identified impacts, appropriate mitigation measures shall be recommended.

9.2.1 Construction Stage - Though the sub-projects will apply LEP approach to the extent possible during the implementation, it may not be possible to avoid all likely impacts; the study shall take into account the following issues:

Physical environment

The issues and concerns generally related to physical environment typically include, but not necessarily limited to:

- Change in Land Use
- Spoil Disposal
- Slope Instability
- Water Management, Spring, Streams, Rain Water (Drainage and Cross Drainage Works etc.)
- Air Dust, Noise and Water Pollution
- Quarrying and Borrow Pit
- Decline in Aesthetic Value

Biological environment

The issues and concerns generally related to biological environment typically include, but not necessarily limited to:

- Loss or degradation of forests and vegetation. Impact on wildlife including birds due to loss or degradation of habitat, increased hunting and other form of human pressure.
- Impacts on flora and fauna (as listed in CITES and IUCN Red data book)

Socio-economic and cultural environment

The issues and concerns generally related to socio-economic and cultural environment typically include, but not necessarily limited to;

- Loss or degradation of farm land and productivity
- Loss or degradation of private properties such as houses, farm sheds, and other structures, crops and fodder/ fruit trees
- Impact on community infrastructure such as irrigation, water supply, schools, health post, trail and trail bridges
- Impacts on cultural, religious and archeological sites
- Impacts on health and safety matters.

9.2.2 Operation stage - The following issues will be taken into account during operation and maintenance stage:

Physical environment

- Road slope stability and management
- Impact due to air, noise and water pollution

Biological environment

- Depletion of forest resources
- Disturbance to wild life and illegal hunting

Socio-economic and cultural environment

- New settlement along the road alignment
- Change in social behaviour
- Impact on Livelihood and economic activities
- Road safety measures

10.0 BENEFIT AUGUMENTATION/MITIGATION MEASURES

The IEE study will propose site-specific benefit augmentation and mitigation measures to optimize the benefits expected from the sub-project and minimize/mitigate avoid or control of proposal's adverse impacts. The benefit augmentation and mitigation measures will be selected based upon appropriateness and cost analysis and these will be suggested for pre-construction, construction and post construction phase of the project. Mitigation measures will be proposed for the impacts on physical, biological, socio-economic and cultural environment.

11.0 ENVIRONMENTAL MANAGEMENT PLAN

The study will ensure the implementation and monitoring of mitigation measures for minimizing adverse impacts and maximizing the beneficial impacts. This plan will also identify the key environmental monitoring indicators with respect to activities, methods and

responsibilities in order to monitor the environmental condition and adoption of suitable mitigation measures.

12.0 IEE report format

This format will be in line with provision made in the Schedule 5 of EPR, 1997 and should be adapted to project specific situation. The IEE report will contain the following sections:

- i. Cover page with name of the proposal and proponent and address**
- ii. Table of content**
- iii. List of Abbreviation (acronyms)**
- iv. Executive Summary that includes:**
 - Background
 - Project Proponent
 - Objective
 - Relevancy of the Proposal
 - Project Description
 - Existing Condition
 - Identification of Impacts and Benefit Augmentation/Mitigation Measures
 - Environmental Management Plan
 - Conclusions and recommendations
- v. Salient Features of the Project**
- vi. Introduction:** This section should describe the project in simple terms and concisely, without missing relevant points but avoiding unnecessary details. The project description should provide following information:
 1. Background
 2. Relevancy of the proposal
 - Objectives
 - Methodology adopted
 3. Name and Address of the Proponent
 4. Description of the Sub-project
 5. Construction Approach
 6. Proposed Schedule for Implementation of Sub-project
- vii. Public Consultation and Information Disclosure**
- viii. Review of Relevant Acts, Regulations and Guidelines:** During the study relevant policies, legislations and guidelines should be reviewed and their salient features should be mentioned in this section. Similarly related institutions should be consulted.
- ix. Existing Environmental condition:** Baseline information on the existing physical, biological as well as socio-economic and cultural resources of the proposed sub-projects is described here. Environmental features such as sensitive areas, population and settlements, forests should be shown in a map

x. Project Alternatives: This section summarizes the alternatives by environmental comparison. This may include the following sub-headings.

- a. Project alternative
- b. Alternative routes
- c. Alternative design and construction approach
- d. Alternative schedule and process
- e. Alternate resources
- f. Any other alternatives

xi. Identification of Impacts and Benefit Augmentation/Mitigation Measures: This section contains the process, findings and conclusions of analysis and interpretations. The impacts are predicted in terms of their magnitude (minor, moderate and high), extent (site specific, local and regional) and duration (short, medium and long term) and appropriate benefit enhancement and mitigation measures are suggested as following:

a) **Physical Impacts:** such as land, air, water, noise, infrastructure impacts and other factors

b) **Biological Impacts:** such as flora, and fauna, population, and natural habitats and ecosystems

c) **Socio-economic-cultural impacts:** such as agricultural land, human health, social, cultural and religious values, implications of physical and biological impacts and other relevant socio-cultural-economic impacts.

This section also summarizes the recommended mitigation measures including basis for selection and cost if possible.

xii. Environmental Management Plan: This section summarizes the recommended implementation of IEE, monitoring parameters/indicators, activities, methods and responsibilities.

xiii. Conclusion and Recommendations: This section should clearly indicate whether IEE report is sufficient or further assessment is needed. Likewise, it should also be recommended that what aspects should be covered if further environmental assessment is needed.

xiv. Miscellaneous: Reference materials should be mentioned here if used during IEE report preparation in standard format.

xv. Annex

- ToR of IEE
- Rapid Environmental Assessment (REA) Checklist
- Abstract of cost
- RRRSDP environmental checklist
- Public notice
- Deed of enquiry (*muchulka*)
- Name of the organizations
- List of person contacted

- Recommendation letters from municipality and VDC's
- Existing condition
 - a. Distribution of household by major occupation
 - b. Summary of public services and infrastructures according to settlement
 - c. Land holding pattern of settlements within ZoI
 - d. Number of households belonging to different food security category
- List of trees
- Maximization of slope cutting and preservation of vegetation cover
- Photographs