Terms of Reference (ToR)

Impact Assessment of Infrastructure Projects (Road and Hydropower) in Kanchenjunga Conservation Area (KCA), Nepal

1. Introduction

WWF is the world's leading independent conservation organization originated in Switzerland in 1961 and currently running in more than 100 countries across 6 continents. WWF initiated work in Nepal with a rhino conservation program in Chitwan in 1967 while the WWF Nepal set up its office formally on 19 May 1993. Currently, WWF Nepal works in five thematic areas- Wildlife, Freshwater, Forests. Climate and Energy and Governance. WWF Nepal's focus has progressed from its localized efforts in conservation of a single species in the 1960s, to integrated conservation and development approach in 1990s, to a new horizon of landscape-level conservation encompassing national, regional, and global scales of complexity since the early 2000s.

The KCA is a protected region in the eastern Himalayas of Nepal, established in 1997. The area supports rich biodiversity, including several **threatened wildlife species such as the snow leopard, red panda**, and **the Himalayan black bear**. KCA is also home to several ethnic communities, including the Limbu, Sherpa, and Rai, whose traditional lifestyles contribute to the area's rich cultural heritage.

Managed by the Kanchenjunga Conservation Area Management Council (KCAMC) with strong community involvement, the KCA is part of a transboundary conservation landscape that borders Sikkim (India) and Tibet (China). The region faces increasing threats from expanding infrastructures, mainly roadways and hydropower projects, which intersect or fragment biodiversity-rich zones, disrupting wildlife movement and habitats. Construction of roads for hydropower development, often in remote and fragile areas, further exacerbates these threats. While infrastructure is crucial for national development, it can result in habitat fragmentation, heightened human-wildlife conflict, and long-term ecological degradation.

In addition to infrastructure-related threats, climate change is accelerating ecological shifts within the landscape, adding to the vulnerability of species and ecosystems. In response, WWF Nepal, in collaboration with the Department of National Parks and Wildlife Conservation (DNPWC) and the Department of Forest and Soil Conservation (DoFSC), is initiating a systematic impact assessment. This will evaluate the combined effects of roadways, hydropower plants, and climate change on biodiversity and ecosystem integrity within KCA.

The insights from this assessment will be synthesized into a comprehensive impact report, providing actionable recommendations for integrating natural resource safeguards into infrastructure planning and policy-making. To ensure effective implementation, WWF Nepal is therefore seeking a qualified consultant to lead field-based assessments, including biodiversity monitoring through camera trapping, stakeholder consultations around hydropower sites, data analysis, and preparation of a comprehensive impact assessment report.

2. Objectives

The overall objective of this consultancy is to conduct an evidence-based assessment of the impacts of infrastructure development (roads and hydropower projects) and climate change on biodiversity and local communities in the Kanchenjunga Conservation Area.

Specific objectives include:

- To train and supervise citizen scientists in camera trap methodologies, and the camera trap study for wildlife monitoring in KCA.
- To conduct a camera trap survey along the **Olangchungola–Tiptala road segment for a time period of 3 months** to assess wildlife presence, movement, and habitat use in areas affected by road-induced fragmentation.
- To develop questionnaires and conduct Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) in areas surrounding existing hydropower projects and associated road infrastructure within the KCA, affecting snow leopard, red panda, and other wildlife habitats, to understand the social and ecological impacts of hydropower and road development.
- To collect, analyze, and synthesize ecological and social data to demonstrate the combined impacts of linear (roads) and point (hydropower) infrastructure and climate change on biodiversity and ecosystem integrity in the KCA.

3. Scope of Work

The consultant will be responsible for conducting biodiversity and social impact assessments related to infrastructure development in the KCA, with a clear spatial focus as outlined below.

3.1 Biodiversity Assessment (Camera Trap Survey)

- Design and implement a camera trap survey along the **Olangchungola–Tiptala road segment**, a critical stretch intersecting potential snow leopard and other wildlife habitats.
- Assess immediate and potential long-term impacts of road infrastructure on wildlife presence, movement, and habitat use.
- Engage and build the capacity of local citizen scientists in camera trap deployment, maintenance, and basic data collection.
- Coordinate, mobilize, and provide technical guidance to citizen scientists deployed by WWF Nepal for data and information collection.
- Identify additional road segments within the KCA that may pose high risks to wildlife and recommend similar monitoring approaches where relevant.

- **Deliverable:** Camera trap survey protocol and low-cost long-term biodiversity monitoring framework.

3.2Social and Stakeholder Assessment

- Develop questionnaires and conduct KIIs and FGDs with Indigenous Peoples, local communities, and relevant stakeholders **in areas influenced by existing hydropower projects**, and road projects within KCA affecting the wildlife habitat of the snow leopard and red panda.
- Assess perceived and observed impacts of hydropower development and associated road infrastructure on biodiversity, livelihoods, and community well-being.
- Document local knowledge and community perspectives to complement ecological findings.

- **Deliverable:** Identification of high-risk infrastructure locations with recommendations for natural resource safeguarding measures, including potential wildlife crossing points.

4. Methodology

The consultant will adopt the following methodologies to achieve the project objectives:

4.1 Citizen Scientist Mobilization and Camera Trap Survey

- Train citizen scientists on camera trap methods and biodiversity monitoring.
- Conduct a camera trap survey along the 21 km Olangchungola–Tiptala road segment, encompassing potential snow leopard habitat. The camera trap survey along the Olangchungola–Tiptala road segment will be conducted over a continuous three-month period to capture seasonal wildlife movement patterns and assess infrastructure-related impacts.
- Apply systematic sampling, establishing sampling stations at approximately 5 km intervals along the road.
- Deploy 2–3 camera traps per station at varying distances from the road to assess wildlife response to infrastructure proximity.

4.2 Stakeholder Consultations

- Conduct KIIs and FGDs with local communities, Indigenous groups, government representatives, and conservation stakeholders, in hydropower and road-influenced areas.
- Use participatory approaches to gather qualitative data on infrastructure- and climate-related impacts.

4.3 Data Analysis

- Coordinate, mobilize, and provide technical guidance to citizen scientists deployed by WWF Nepal for data and information collection.
- Analyze camera trap data using appropriate hierarchical or occupancy models.
- Analyze social data using qualitative and quantitative techniques.
- Use GIS tools to assess spatial patterns and generate kernel density maps of wildlife activity.

4.4 Development of Recommendations

- Synthesize ecological and social findings.
- Provide practical, evidence-based recommendations for improving natural resource safeguard measures in road and hydropower planning and implementation.

5. Deliverables and Timeline

The consultant is expected to deliver the following deliverables:

Deliverable	Description	Timeline
1. Compiled Report on Camera Trap Study.	**A comprehensive report that includes:** • Biodiversity monitoring results from camera traps and field surveys. • Summary of stakeholder consultations (KII and FGDs).	By June 2026

6. Required Expertise

The consultant organization must demonstrate strong technical and field-based expertise relevant to biodiversity conservation-related activities in the Kanchenjunga Conservation Area (KCA) and/or similar landscapes or sites in Nepal. The required expertise includes, but is not limited to:

Organizational Requirements:

- Proven experience in conducting similar types of studies in Nepal.
- Capacity to mobilize and engage citizen scientists or local researchers for biodiversity monitoring.

Expertise Requirements:

WWF Nepal is seeking **one expert** with the following qualifications and experience:

- **A Master's degree** in a relevant natural science discipline, such as Ecology, Environmental Science, Conservation Biology, or Natural Resource Management.
- **Proven expertise in wildlife science**, with hands-on experience in **camera trap monitoring**, including field deployment, data management, and species identification.
- **Experience in stakeholder consultations**, including conducting **Key Informant Interviews (KIIs)** and **Focus Group Discussions (FGDs)**, particularly with **Indigenous Peoples and local communities**.
- **Demonstrated ability to analyze and synthesize ecological and social field data**.

7. Reporting and Coordination

The consultant will report to WWF Nepal and maintain regular communication throughout the consultancy period. Progress updates, reports, and deliverables should be submitted as per the agreed-upon schedule.

8. Confidentiality and Intellectual Property

All information, data, and photos collected during the consultancy will be treated as confidential and should not be shared without prior written consent from WWF Nepal, and should be copyrighted to © **WWF Nepal.**

9. Proposal Submission Details

Interested VAT-registered organizations in Nepal are requested to submit technical and financial proposals providing a detailed breakdown of the total budget in Nepali rupees, electronically to **proposalsubmission@wwfnepal.org**

Please mention "**Impact Assessment of Infrastructure Projects in KCA**" as an email subject and submit the proposal by **5 p.m. Nepal Standard Time, 22 January 2026.**

The proposal must include the following:

- Signed cover letter specifying the value of the proposal.
- Curriculum Vitae of an expert
- Technical proposal (Not exceeding 5 pages)
- Financial proposal
- Organization Registration
- VAT registration certificate
- Latest tax clearance certificate
- Latest Audit Report

Please refer to Annex 1 for the Budget Sample.

Note: Consultants with the capacity to leverage existing cameras for the study will be prioritized. The costs related to training and mobilizing citizen scientists will be covered by WWF Nepal; therefore, a separate budget allocation for these items is not required. For firms that can leverage existing cameras for this study, WWF Nepal will also cover the costs of batteries and memory cards. The purchase of new cameras is not permitted under this study; only existing resources may be utilized.

10. Mode of Payment

The payment will be made as per WWF Nepal norms and upon submission of satisfactory deliverables. Note that payments are subject to tax deduction as per prevailing government rules.

Annex 1: Budget Sample

S.N.	Description	Unit	Qty.	Rate	Amount (NPR)
1	**Fee**				**XXXX**
1.1	Expert-Name	Days			XXXX
	VAT 13% on Fee				**XXXX**
2	**Other Expense**				**XXXX**
2.1	**Field Visit Cost**				
2.1.1	Accommodation	Person x Nights			XXXX
2.1.2	Food	Person x Days			XXXX
2.1.3	Transportation				XXXX
2.1.4	FGDs and KIIs				
	Sub-Total Other Expense (2.1+2.2+....)				XXXX
	VAT 13% on Other Expense				**XXXX**
	GRAND TOTAL (1+2)				**XXXX**

Note: Please add/edit rows as required.