Royal Government of Bhutan

Department of Surface Transport (DoST), Ministry of Infrastructure and Transport (MoIT)

Government Technology Agency (GovTech)

Department of Forests and Park Services (DoFPS), Ministry of Energy and Natural Resources (MoENR)

Accelerating Trade and Transport in Eastern South Asia (ACCESS) Project – Bhutan [P181278]

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

February 2025

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Abbreviations and Acronyms

ACCESS	Accelerating Trade and Transport in Eastern South Asia Project – Bhutan
BMP	Biodiversity Management Plan
CA	Competent Authority
CBOs	Community-Based Organizations
CIA	Cumulative Impact Assessment
CFPs	Chance Find Procedures
DECC	Department of Environment and Climate Change
DoFPS	Department of Forests and Park Services
DoST	Department of Surface Transport
EC	Environmental Clearance
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
E&S	Environmental and Social
ESCOP	Environmental and Social Codes of Practice
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESIA	Environmental and Social Impact Asessment
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
GMC	Gelephu Mindfulness City
GovTech	Government Technology Agency
GRM	Grievance Redress Mechanism
G-SOC	Governmental Security Operation Center
HEC	Human-Elephant Conflict
HFCs	Hydrofluorocarbons
IAS	Invasive Alien Species
IEE	Initial Environmental Examination
IWT	Inland Water Transport
LMP	Labor Management Procedures
MoENR	Ministry of Energy and Natural Resources
MoIT	Ministry of Infrastructure and Transport
NDI	National Digital Identification System
NEC	National Environment Commission
NLCS	National Land Commission Secretariat
NSW	National Single Window
OA	Overhead Assessment
OHS	Occupational Health and Safety
PMU	Project Management Unit
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
QRT	Quick Response Team
RAMS	Roads Asset Management System
SEA/SH	Sexual Exploitation, Abuse, and Sexual Harassment
SEP	Stakeholder Engagement Plan
SEWH	Southern East-West Highway
TA	Technical Assistance
ToRs	Terms of Reference

Executive Summary

The World Bank will support the Department of Surface Transport (DoST) of the Ministry of Infrastructure and Transport (MoIT) and the Government Technology Agency (GovTech) in implementing the Accelerating Trade and Transport in Eastern South Asia (ACCESS) Project—Bhutan. The Project's objective is to increase the efficiency and resilience of trade and transport along selected corridors in Bhutan.

The Project will support the following activities:

- **Component 1: Digital Systems for Trade ($37.5M)**
  - Development of a National Single Window (NSW) for digital trade.
  - Strengthening cybersecurity and digital connectivity to improve resilience and efficiency in trade operations.
- **Component 2: Green and Resilient Transport and Trade Infrastructure ($112.2M)**
  - Construction of a 15 km road link with four bridges along the Southern East-West Highway (SEWH) from Gelephu to Tareythang.
  - Implementation of a Biodiversity Management Plan (BMP) and wildlife conservation measures (e.g., habitat enrichment, elephant corridor development, and human-wildlife conflict mitigation).
  - Enhancing road asset management through performance-based maintenance contracts.
  - Studying multimodal connectivity options, including inland water transport and rail.
- **Component 3: Institutional and Policy Strengthening ($5.3M)**
  - Strengthening the DoST and GovTech through policy reforms and capacity building.
  - Supporting the development of a National Surface Transport Policy and climate-resilient infrastructure planning.

Among all the project activities or subprojects, the construction of a 15-km long Gelephu-Tareythang Road (G-T Road) is the only subproject (part of Component 2.1) is categorized as a high-risk activity from the World Bank Environmental and Social Framework (ESF) perspective and an Environmental and Social Impact Assessment (ESIA) has been prepared. Other activities or subprojects under the Project will mainly involve procuring software solutions and Information Technology (IT) systems, hardware and IT equipment, consultancy services, training and capacity building, and minor civil works. No land acquisition and resettlement are required for all the subprojects. As per the ESF, all these subprojects are categorized as low to moderate risk, and their environmental and social (E&S) management and mitigation follow mainly national regulations.

Component 1 activities will be implemented nationally in the existing government buildings. Component 2.1 activities will primarily concentrate near Gelephu in the Sarpang district along the southern border. Specific locations of subproject activities are unknown at this stage because the relevant Technical Assessment (TA) studies are still being prepared or have yet to be identified. The subproject locations will be known once these studies and identification are completed during project implementation.

Other activities in Component 2 and Component 3 will mainly include feasibility studies for trade and transport infrastructure, including detailed E&S studies. The current Project will not fund the implementation of downstream investments in these studies.

This Environmental and Social Management Framework (ESMF) has been prepared to identify the potential environmental and social risks and impacts of all proposed project activities (except for the construction of G-T Road) and to propose suitable mitigation measures. It maps out the laws and

regulations of Bhutan applicable to the Project and describes the principles, approaches, implementation arrangements, and mitigation measures to be followed.

Key Environmental and Social Risks

The potential environmental and social risks for project activities are identified as:

- **Component 1: Digital Systems for Trade**
    - E-waste generation due to the procurement of new IT infrastructure.
    - Energy consumption increases from data centers and digital connectivity upgrades, and risk of use of banned refrigerants in cooling systems.
    - Digital divide risks, particularly for rural communities, women traders, and small-scale businesses, may face challenges in accessing and utilizing digital trade platforms.
    - Cybersecurity threats that could compromise sensitive trade and financial data.
    - Localised environmental impacts, including occupational health and safety (OHS), risks from small-scale construction activities.
- Mitigation Measures:
    - Implement e-waste management guidelines to ensure responsible disposal and recycling.
    - Promote energy-efficient technologies and use environmentally friendly refrigerants such as Hydrofluorocarbons (HFCs), isobutane, and propane (R-290) for cooling systems.
    - Provide digital literacy programs and targeted support to ensure inclusive access to digital trade systems.
    - Implement robust cybersecurity measures.
    - Implement Environmental and Social Codes of Practice (ESCOP), which are given in Annex 2.

- **Component 2: Green and Resilient Transport and Trade Infrastructure**
    - Although the net gain measures are targeted towards biodiversity conservation, the implementation of these activities may disturb fauna, community and occupational health and safety (OHS) risks, risk of re-invasion of invasive plant species after completion of the project and risk of elephants habituating ineffective fences.
    - Environmental pollution, community health and safety and OHS risks during road maintenance activities.
    - Inadequate coverage of World Bank ESF requirements in the planning and design of transport projects, including climate vulnerability.
- Mitigation Measures:
    - Plan and implement international good practices such as an ecosystem-based management approach for habitat restoration and biodiversity net gain measures, as well as long-term monitoring.
    - Submit the terms of reference (ToRs) of the engineering studies, including E&S studies, for the transport projects to the World Bank for their no-objection. Review the output of these studies to ensure compliance with the World Bank requirements.
    - Adopt climate-resilient road designs, including slope stabilization, proper drainage, and nature-based solutions.
    - Implement ESCOP, enforce strict OHS standards and provide training for road maintenance workers.

- **Component 3: Institutional and Policy Strengthening**
    - Policy delays that could slow the implementation of trade and transport reforms.

    - Limited institutional capacity within implementing agencies, affecting project execution.
    - Lack of stakeholder engagement and inclusivity, leading to gaps in policy adoption and implementation.
    - Risk of the outcome of the TA studies not meeting the requirements of the World Bank
- Mitigation Measures:
    - Develop clear policy roadmaps with stakeholder consultations to accelerate regulatory approvals.
    - Provide training and capacity-building programs for government agencies and implementing partners.
    - Establish inclusive stakeholder engagement mechanisms, ensuring participation from local communities, businesses, and vulnerable groups.
    - Obtain approvals from the World Bank on the ToRs and conduct these studies in compliance with the World Bank requirements.

To further minimize risks, an Exclusion List will be applied to prevent activities with significant adverse environmental and social impacts, such as those affecting protected areas, critical natural habitats or requiring large-scale displacement. Early screening and impact assessments will guide project design and implementation, ensuring compliance with Bhutan's regulatory framework.

Management of E&S Risks

The project activities primarily consist of studies, capacity-building activities, and the establishment of IT systems, with some minor renovation works in government offices and improvements in last-mile digital connectivity. The activities for implementation of BMP will include some small-scale civil works, such as fencing and vegetation management for biodiversity conservation. All the civil works in the Project will fall under the 'Green Category' as per national environmental regulations and, hence, do not require environmental approvals or licenses.

The potential environmental and social impacts of these activities are well understood, limited in scope, and straightforward.

To ensure effective environmental and social risk management, a detailed ESCOP has been developed to provide clear mitigation measures for these impacts.

The E&S management procedures to be followed for each subproject are given in the table below.

Table 1: Project Cycle and E&S Management Procedures

Project Stage	**E&S Stage**	**E&S Management Procedures**
a. Assessment and Analysis: Subproject Identification	Subproject type	1. If the subproject is related to the procurement of consultancy services for studies, no screening is needed. The terms of reference (ToRs) for the studies to be submitted for the World Bank review and no objection. Thereafter, prepare and finalize the outputs of such activities in compliance with the ToRs. 2. If the subproject involves procuring goods, installing equipment, or performing work, proceed with the screening in the next step.
	Screening	3. During subproject identification, ensure subproject eligibility by referring to the Exclusion List in Table 5.2. 4. Use the Screening Form in Annex 1 to identify and assess potential E&S risks and impacts.

Project Stage	E&S Stage	E&S Management Procedures
		5. Based on the Screening Form, identify and adopt the relevant E&S measures given in (i) Environmental Codes of Practices (ESCOP) in Annex 2 (ii) Labour Management Procedures (LMP) in Annex 4 (iii) Chance Find Procedures (CFP) in Annex 5 (iv) Temporary Land Disturbance and Compensation in Annex 6 (v) Key planning and design considerations are given in Section 4.5. 6. Identify the appropriate documentation and ECs required under Bhutan's E&S regulatory systems
b. Formulation and Planning: Planning for subproject activities	Planning	1. Submit the screening forms for 5 subprojects (for each subcomponent) along with the relevant E&S measures for review and no objection by the World Bank prior to World Bank prior to initiating bidding processes (for subprojects involving bidding processes) and/or launching activities (for subproject activities not subject to bidding). 2. Share the subproject details with the stakeholders in an accessible manner, and consultations will be held with the affected communities in accordance with the SEP. 3. Train staff responsible for implementation and monitoring of plans. 4. Incorporate relevant environmental and social procedures and plans into contractor bidding documents; train contractors on relevant procedures and plans. 5. If the Screening Form indicates the proposed subproject falls into the Blue Category and requires EC, prepare an Environmental and Social Management Plan (ESMP) using the template given in **Annex 3**. 6. Complete all documentation, permits, and clearances required for EC.
c. Implementation and Monitoring: Implementation support and continuous monitoring of projects	Implementation	1. Ensure implementation of plans through site visits and regular monitoring. 2. Submit quarterly reports on the E&S performance of the Project 3. conduct training for PMU and PIU staff and Project workers on E&S risk management.
d. Review and Evaluation: Progress and completion of E&S mitigation measures	Completion	1. Assess whether E&S measures have been effectively implemented 2. Ensure that the physical sites are properly restored after completion of civil works 3. Prepare the completion report describing the final status of compliance with E&S risk management measures and submit it to the World Bank

Implementation Arrangements

The project activities will be implemented by the following three implementing agencies.

- **The GovTech** will implement Component 1. It will house a Project Management Unit (PMU) and include an E&S consultant.

- **The DoST** will implement Components 2 and 3 activities and will establish a PMU with an environmental specialist, a social specialist, an environmental consultant, a social consultant, and a GBV consultant.
- The **Department of Forests and Park Services (DoFPS)** will implement the BMP under Component 2.1. It will establish a Project Implementation Unit (PIU) with a designated E&S focal officer¸ exclusively dedicated to the implementation of this ESMF.

These implementing agencies will procure consultants and contractors to implement the project activities.

No separate budget is allocated for implementing the ESMF, as its activities are integrated into the overall Project budget, ensuring that E&S risks are implemented as part of the broader project execution.

Capacity Building and Training

A comprehensive capacity-building program will ensure that all implementing agencies, contractors, and stakeholders are equipped to comply with environmental and social safeguards.

Training will target Government officials from MoIT, DoST, GovTech and DoFPS, Contractors and workers and local governments and community representatives engaged in project activities.

Training topics will include environmental and social risk management, biodiversity conservation, digital security, stakeholder engagement, and occupational health and safety (OHS).

Training methods will involve national and regional workshops, onsite training for contractors, digital learning modules, and refresher courses.

Monitoring

Each implementing agency (DoST, GovTech, and DoFPS) will be responsible for monitoring their respective project components to ensure compliance with environmental and social safeguards.

Monitoring will involve regular site visits, monthly written reports from contractors, and quarterly progress reports by the implementing agencies to track E&S performance.

The PMUs will submit quarterly reports to the World Bank, covering ESMF implementation, stakeholder engagement, capacity building contractor compliance, biodiversity conservation, and grievance redress. Contractors and consulting firms will provide monthly monitoring reports, which will be annexed to the quarterly reports.

A separate **Stakeholder Engagement Plan** (SEP) has been prepared for the Project, based on the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement. The SEP can be found here: https://www.moit.gov.bt/en/access-bhutan-project/

1 Introduction

This Environmental and Social Management Framework (ESMF) is developed[1] to support the environmental and social due diligence provisions for activities financed by the World Bank in the Accelerating Trade and Transport in Eastern South Asia (ACCESS) Project – Bhutan. The Project aims to increase the efficiency and resilience of trade and transport along selected corridors by implementing digital trade systems, green and resilient transport infrastructure, and institutional strengthening across Bhutan's nationwide transport and trade network. The Department of Surface Transport (DoST) of the Ministry of Infrastructure and Transport (MoIT) and the Government Technology Agency (GovTech) are the lead implementing agencies. The Department of Forests and Park Services (DoFPS), under the Ministry of Energy and Natural Resources (MoENR), working alongside the DoST, will implement some of the project activities.

This ESMF follows Bhutan's national laws and regulations. The objective of the ESMF is to assess and mitigate potential negative environmental and social risks and impacts of the project activities or subprojects consistent with the national requirements. More specifically, the ESMF aims to

a) assess the potential environmental and social risks and impacts of the proposed Project and propose mitigation measures;
b) establish procedures for the environmental and social screening, review, approval, and implementation of activities;
c) specify appropriate roles and responsibilities and outline the necessary reporting procedures for managing and monitoring environmental and social issues related to the activities;
d) identify the staffing requirements, as well as the training and capacity building needed to implement the provisions of the ESMF successfully;
e) address mechanisms for public consultation and disclosure of project documents as well as redress of possible grievances; and
f) establish the budget requirements for implementation of the ESMF.

This ESMF should be read together with other plans prepared for the Project, including the Stakeholder Engagement Plan (SEP), the Environmental and Social Commitment Plan (ESCP) and the Biodiversity Management Plan (BMP).

[1] This ESMF has been developed by the DoST's international environmental consultant, Dr. Venkata Nukala.

2 Project Description

The ACCESS Bhutan Project is a World Bank-financed initiative designed to enhance trade efficiency and transport resilience across Bhutan's national trade corridors. The Project is organized into three components, each with specific subcomponents aimed at improving trade efficiency, transport infrastructure, and institutional capacity. The following sections provide a detailed description of these components.

2.1 Component 1: Digital Systems for Trade (US$42 million[2])

Subcomponent 1.1: Implementation of National Single Window (NSW) (US$14 million)

- **Purpose and Activities**
  - Design, develop, and implement an NSW solution to replace manual and paper-based processes with a fully digitized trade facilitation system.
  - Modernize customs and border agency requirements, supported by policy reforms.
  - Provide training, capacity building, and targeted awareness for both government agencies and women traders.
- **Expected Outcomes**
  - Enhanced transparency, reduced transaction costs, and faster clearance times.
  - Better inter-agency coordination for trade-related services.
  - Reduced environmental impact from paper usage and unnecessary travel.
- **Implementation Approach**
  - A blueprint (under preparation) will detail governance, operational models, fee structure, helpdesk, and change management.
  - A multi-sectoral management committee and stakeholder working group will ensure the NSW meets Bhutan's cross-border trade needs.

Subcomponent 1.2: Strengthening Digital Enablers (US$5 million)

- **Purpose and Activities**
  - Establish the legal, regulatory, and institutional foundations (or "digital public infrastructure") necessary for secure and efficient electronic transactions, with an initial emphasis on trade.
  - Conduct data protection impact assessments and implement safeguards for trusted data sharing and secure digital trade.
  - Enhance functionalities of the national digital identification system (NDI), develop a digital data/business intelligence hub, and integrate these platforms with the NSW and other trade systems.
- **Expected Outcomes**
  - Strengthened policy and regulatory environment for e-transactions and digital IDs.
  - Improved data-sharing and interoperability among government and private-sector systems, accelerating digital trade.

Subcomponent 1.3: Enhancing Cybersecurity (US$6 million)

- **Purpose and Activities**

[2] The component and subcomponent costs are based on the draft Project Appraisal Document of January 2025. Please refer to the latest document for the upto date component and subcomponent wise costs.

- Establish a Governmental Security Operation Center (G-SOC) to monitor, detect, and respond to cyber threats, with a focus on protecting digital trade systems.
- Develop a critical infrastructure protection (CIP) plan and deploy common security measures (firewalls, encryption, intrusion detection).
- Assess options to strengthen the cybersecurity legal framework, accompanied by policy development, guidelines, and capacity-building.
- Foster regional partnerships to bolster cybersecurity resilience across neighbouring countries.

- **Expected Outcomes**
  - A more secure environment for digital trade and data transfer across regional corridors.
  - Coordinated and well-equipped cyber-incident response for critical trade infrastructures.

Subcomponent 1.4: Improving Digital Connectivity and Data Infrastructure Resilience (US$17 million)

- **Purpose and Activities**
  - Procure high-capacity international bandwidth through long-term, competitively sourced contracts to diversify routes and strengthen redundancy.
  - Enhance last-mile connectivity for key trade, agricultural, and logistics centers, building on existing infrastructure.
  - Building/enhancing co-location shelters to house core network infrastructure in dzongkhags and thromdes.
  - Strengthen disaster recovery capabilities of the existing Government Data Center (GDC) and upgrade the backup data center in Bumthang to a cloud-based environment with active-active disaster recovery.
- **Expected Outcomes**
  - More robust and resilient connectivity to facilitate reliable trade operations.
  - Expanded capacity for digital government services, including the NSW, ensuring continuous operations during disaster events.

2.2 Component 2: Green and Resilient Transport and Trade Infrastructure (US$233 million)

Subcomponent 2.1: Developing Green, Resilient, and Safe Road Connectivity (US$218.25 million)

- **Purpose and Activities**
  - Construct a new 15-km "greenfield" road segment and five major bridges to complete a missing link along the Southern East-West Highway (SEWH). *Note that this subproject is not covered under this ESMF, and a separate ESIA has been prepared*.
  - Implement biodiversity net gain measures such as habitat enrichment, wildlife movement research, and local community partnerships to reduce human-wildlife conflict.
  - Prepare studies (feasibility, design, ESIA) for the approximately 60 km missing link between Tareythang and Panbang.
  - Conduct a full-scale Cumulative Impact Assessment (CIA) to manage broader environmental and social impacts, especially in the context of planned growth centers.
- **Expected Outcomes**
  - Feasibility study and ESIA for Tareythang and Panbang road and a CIA
  - Achieve net gain measures on the biodiversity impacts of G-T road

Subcomponent 2.2: Strengthening Road Asset Management and Maintenance (US$11.50 million)

- **Purpose and Activities**

    - Upgrade the existing road asset management system (RAMS) with better data collection and GIS integration to prioritize climate-resilient maintenance.
    - Use data on road deterioration from climate-induced hazards to adopt preventive strategies (e.g., flood attenuation slope stabilization).
- **Performance-Based Maintenance**
    - Pilot a five-year Performance-Based Maintenance (PBM) contract for national highway sections of the SEWH.
    - Incorporate green technologies and climate adaptation measures into routine maintenance operations.

Subcomponent 2.3: Improving Multimodal Connectivity (US$3 million)

- **Purpose and Activities**
    - Conduct pre-feasibility and feasibility studies on inland waterways transport (IWT) routes and selected regional rail corridors.
    - Explore operationalizing regional rail cargo movement and update the feasibility of dry ports, ensuring alignment with emerging agricultural/industrial growth centers.
    - Develop a trade logistics masterplan (including cold chains, processing centers, and laboratories) with climate resilience as a key design priority.
    - Seek private financing opportunities for trade and transport logistics initiatives.
- **Expected Outcomes**
    - Diversified transport modes (rail and IWT) that offer potential emission reductions and improved resilience.
    - Comprehensive, climate-informed planning for future trade infrastructure and logistics networks.

2.3 Component 3: Institutional and Policy Strengthening for Transport and Trade (US$25 million)

Subcomponent 3.1: Project Implementation Support and Capacity Building to Implementing Agencies (US$6 million)

- **Purpose and Activities**
    - Fund technical experts (procurement, financial management, environment/social safeguards, climate resilience specialists) to support project implementation.
    - Provide capacity building and training PMUs.
- **Expected Outcomes**
    - Enhanced project management, monitoring, and evaluation capabilities.
    - Strengthened in-country expertise on procurement, financial oversight, environmental and social safeguards, and climate resilience.

Subcomponent 3.2: Policy/Regulatory Support (US$0.60 million)

- **Purpose and Activities**
    - Offer technical assistance to formulate or update policies, laws, guidelines, and regulations related to cross-border digital trade and transport facilitation.
    - Focus areas include the Civil Aviation Policy, National Surface Transport Policy, and operational guidelines for railways and inland waterways.
    - Emphasize climate resilience and gender-sensitive considerations in policy development.
- **Expected Outcomes**

- A more robust legal and regulatory environment to support the broader objectives of digitalization, trade facilitation, and climate-resilient transport.

Subcomponent 3.3: Resilient and Sustainable Regional Infrastructure Planning Support (US$18.4 million)

- **Purpose and Activities**
  - Prepare comprehensive feasibility studies and assess future infrastructure projects with a focus on sustainable, climate-resilient regional trade.
  - Invest in local skills development to reduce reliance on external expertise and to promote high-skilled employment opportunities.
  - Adopt international good practices in planning and designing resilient trade-related infrastructure.
- **Expected Outcomes**
  - A pipeline of well-prepared, climate-adaptive infrastructure projects to support long-term growth.
  - Strengthened national capacity to plan, design, and maintain sustainable and resilient infrastructure networks.

2.4 Project Locations and Timeline

Component 1 activities will be implemented nationally in the existing government buildings. Component 2.1 activities will primarily concentrate near Gelephu in the Sarpang district along the southern border. Specific locations of subproject activities are not known at this stage because the relevant Technical Assessment (TA) studies are still being prepared or have yet to be identified. The subproject locations will be known once these studies and identification are completed during project implementation.

Other activities in Component 2 and Component 3 will mainly include feasibility studies for trade and transport infrastructure, including detailed E&S studies. The current project will not fund the implementation of downstream investments in these studies.

The Project will be implemented over a period 5 years, and the planned activities with relevant timelines include:

- 2025-2026: Completion of feasibility studies and digital system implementation.
- 2026-2028: Major infrastructure construction, including the Gelephu-Tareythang road.
- 2028-2029: Finalization of institutional strengthening and trade policy reforms.

A detailed procurement plan will be developed to ensure compliance with Bhutan's national procurement laws and World Bank procurement guidelines.

2.5 Implementing Agencies

The project activities will be implemented by the following three implementing agencies.

- **The GovTech** will implement Component 1. It will house a Project Management Unit (PMU) and include an E&S consultant.
- **The DoST** will implement Components 2 and 3 activities and will establish a PMU with an environmental specialist, a social specialist, an environmental consultant, a social consultant, and a GBV consultant.
- The **DoFPS** will implement the BMP under Component 2.1. It will establish a Project Implementation Unit (PIU) with a designated E&S focal officer¸ exclusively dedicated to the implementation of this ESMF.

The E&S staff within these implementing agencies are responsible for:

- Day-to-day coordination and supervision of project activities.
- Monitoring environmental and social safeguards and stakeholder engagement.
- Reporting progress to the World Bank and Bhutanese regulatory agencies.

3 Environmental and Social Policies, Regulations, and Laws

3.1 Bhutan Legal Framework

The government of Bhutan's policies, laws, and regulations that are relevant and directly applicable to the environmental and social risks and impacts of subproject activities are given in **Table 3.1**.

Table 3.1: Bhutan Relevant Legal Framework

Law	Description	Relevance to Project Activities
Environmental Protection Act of Bhutan, 2007	Provides the legal framework for environmental protection, pollution control, and sustainable development. Requires Environmental Clearance (EC) for projects with potential environmental impacts.	None of the subprojects to be implemented under the Project require EC. Components 2 and 3 will involve ESIA studies as part of the engineering feasibility studies for the transport infrastructure. The construction of these infrastructures is not funded under the Project, but these ESIAs will need to get ECs.
Environmental Assessment Act, 2000	Establishes the requirements for conducting Environmental and Social Impact Assessments for projects. Categorizes the project into green, blue and red categories.	The subprojects need to be screened whether they fall into the green, blue, or red categories. The project activities fall into the green category, which does not require an environmental assessment.
Regulation for Environmental Clearance of Projects, 2002	Outlines the process for obtaining environmental clearance and compliance requirements for projects.	The subprojects are not expected to receive an EC as they fall under the 'green category'. However, the screening procedure in Annex 1 confirms the requirement of ECs.
National Environment Protection Act (NEPA), 2007	Provides the overall policy framework for environmental sustainability and sets regulations for natural resource conservation, waste management, and air/water quality standards.	Subprojects with civil works will need to comply with these standards.
Bhutan's Land Act, 2007	Allow authorized entities to access private land for service utilities (e.g., cables, pipelines) after reasonable notice to the landowner.	Subprojects with temporary land disturbances to the private landowners will need to follow the procedures under this Act.
Land Acquisition and Compensation Rules and Regulations (LACRR 2022	Provide valuation and compensation procedures.	Compensation for crop damage and land-use disruptions caused by construction activities follows valuation by the Property Assessment and Valuation Agency (PAVA).
Forest and Nature Conservation Act, 2023	Protects forests, wildlife, and biodiversity. Requires conservation	Relevant for Component 2 activities.

Law	Description	Relevance to Project Activities
	measures for projects affecting forested areas and wildlife corridors.	
Waste Prevention and Management Act, 2009	Regulates solid and hazardous waste management.	Applicable to construction waste, e-waste from digital infrastructure, and community sanitation under the Project.
Bhutan Building Rules and Regulations, 2018	Establishes construction safety, urban planning, and structural integrity standards.	Relevant to digital infrastructure development.
Labour and Employment Act of Bhutan, 2007	Sets standards for working conditions, wages, and occupational health and safety (OHS).	Applies to contractor management, labor conditions in road construction, and IT sector employment.
Regulation on Occupational Health, Safety, and Welfare, 2022	Mandates safe working environments, protective gear, and accident prevention measures.	Relevant to maintenance and civil works
Road Act of Bhutan, 2013	Regulates road planning, construction, and maintenance. Requires road safety measures, including pedestrian crossings and accident prevention strategies.	Applicable to the feasibility studies for the transport infrastructure
Biodiversity Act of Bhutan, 2022	Provides a legal framework for biodiversity protection and sustainable management of ecosystems.	Requires conservation planning and mitigation for infrastructure projects affecting biodiversity corridors.
Anti-Corruption Act of Bhutan, 2011	Ensures transparency in procurement and project execution.	Applies to contractor selection, bidding processes, and fund management for the Project.
Penal Code of Bhutan, 2004 (Revised 2021)	Criminalizes discrimination, harassment, and workplace abuse. Provides a legal basis for addressing gender-based violence (GBV) and sexual harassment (SH) in project implementation.	Relevant due to potential GBV and SH risks associated with the construction activities of the Project.
National Policy for Persons with Disabilities, 2019	Protects the rights of persons with disabilities in employment and public services.	Relevant to ensuring digital trade platforms and transport infrastructure are accessible and friendly for Persons with disabilities.
Regulation on Foreign Workers Management, 2022	Governs the employment of migrant workers, ensuring labor rights protections.	Relevant to contractors employing foreign labor for project activities.
Consumer Protection Act of Bhutan, 2012	Ensures safe and fair trade practices.	Applicable to digital trade facilitation and electronic transactions under Component 1.
Bhutan Information, Communication, and Media Act, 2018	Regulates cybersecurity, data protection, and digital governance.	Key to ensuring cybersecurity measures for digital trade infrastructure under Component 1.

3.2 Bhutan's E&S Assessment and Permitting

The National Environment Commission (NEC) and its Secretariat, now the Department of Environment and Climate Change (DECC), are the key agencies overseeing environmental assessments and permitting in Bhutan. The NEC is the apex body responsible for formulating policies, guidelines, and regulations concerning environmental management in Bhutan. It collaborates with various Competent Authorities (CAs), which are sectoral agencies authorized to issue environmental clearances (ECs) for specific categories of projects.

Bhutan's EC system categorizes projects into three groups based on potential E&S impacts, as shown in **Tale 3.2**.

Table 3.2: Categories of Projects for Environmental Clearance

Category	**Documentation Requirement**	**Authority Responsible for issuing EC**	**Examples of Projects**	**Potential subprojects under ACCESS Bhutan**
Green Category	None	No Environmental Clearance (EC) required	Small-scale activities such as building houses and hotels and repairing buildings, roads, and utilities within approved local area plans. The detailed list is given in the Footnote.[3]	All activities of ACCESS Bhutan
Blue Category	Requires an Initial Environmental Examination (IEE) to assess potential impacts.	Competent Authority (CA) or Department of Environment and Climate Change (DECC) if no CA is designated.	Construction of housing estates, urban roads, irrigation channels, recreational facilities and telecommunication towers. The detailed list is given in the Footnote.[4]	None. However, if the screening confirms that any of the subprojects require EC (for example, for new telecommunication towers), then EC is required.
Red Category	Requires a full Environmental Impact Assessment (EIA) due to significant environmental and social risks and impacts.	DECC and sectoral CA may review and approve.	Hydropower, national highways, large-scale manufacturing (cement plants, steel mills, quarries, etc.).	None

[3] **Green list**: The following activities are included: construction of residential houses; development of archery grounds/ranges and labor camps; establishment of crematoriums and screening plants for separating sand, stones/boulders; implementation of small-scale water supply systems (≤10,000 L/day); mitigation and permanent infrastructure works such as retaining walls, breast walls, and causeways; construction and operation of hotels within designated Thromde boundaries; installation of utilities/service lines within approved Local Area Plans; development of parking facilities, urban roads and drainage systems (within approved LAP), and trails; building repair and maintenance services; monsoon damage restoration works; construction of religious monuments like Lhakhangs and Chortens; manufacture of wooden/steel furniture including paneling and wood joineries; and the operation of toothpick manufacturing units.

[4] **Blue list**: The development involves various activities including the construction of housing estates, urban roads, drainage, river training works, surface collection of sand and boulder, sand dredging, setting up of ropeways, irrigation channels, floriculture, horticulture, recreational facilities, dump yards, automobile services, telecommunication towers, private roads, and hot mix/wet mix/asphalt/bitumen/concrete batching plants, as well as the construction of community and educational facilities, the engraving and polishing of wood and stones on a medium to large scale, and the establishment of waste management facilities.

The EC process follows these steps:

1. Screening: Projects are classified into three categories:
    - Green Category: No environmental assessment is required.
    - Blue Category: Requires an Initial Environmental Examination (IEE).
    - Red Category: Requires a full Environmental Impact Assessment (EIA).
2. Scoping & Terms of Reference (ToR): The project proponent develops a ToR for the environmental assessment, which must be approved by the NEC or the relevant CA.
3. EIA Report Preparation: Based on the approved ToR, the proponent conducts the assessment and submits a report to the DECC or the CA. Public consultation is required during this phase.
4. Review and Decision: DECC or the CA reviews the EIA report, conducts necessary consultations, and either grants or denies EC. If approved, the clearance includes mitigation measures, compliance requirements, and monitoring conditions.
5. Monitoring and Compliance: The DECC and the CA are responsible for monitoring project compliance with the EC conditions. They conduct site inspections and may impose penalties for noncompliance.

3.3 World Bank Standards and Key Gaps with the National Framework

In accordance with the World Bank ESF, the subprojects under the ACCESS (except the 15-km road construction, which is not part of this ESMF) can be categorized as low to moderate risk. Component 1 works involve small-scale construction activities such as last-mile connectivity and installation of IT systems in the existing government buildings. The impacts associated with these construction activities are temporary and site-specific, are low in magnitude, and can be easily managed by standard mitigation measures. Component 2.1 works related to the implementation of BMP will also be small-scale civil works with temporary and site-specific impacts, but they will be located in bio-diversity-rich areas and can be classified as low to moderate-risk. However, the potential E&S risks associated with these activities can be managed by the standard mitigation measures provided in the ESCOP in Annex 2. No land acquisition will be required for any of the subprojects.

The World Bank has conducted an overview assessment (OA) on Bhutan's E&S framework with the World Bank Environmental and Social Standards (ESSs) to identify the key gaps. The ACCESS Bhutan Project will follow Bhutan's E&S framework, as there are no gaps with the ESSs relevant to the subprojects. Table 3.3 summarizes the OA and its relevance to subprojects.

Table 3.3: Relevant World Bank ESS and Key Gaps with the National Framework

E&S Standard	**Key Gaps**	**Relevance to subprojects**
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	The screening and EC system is based on a pre-categorization of projects by type and scale but does not adequately assess site-specific risks. - Limited consideration of cumulative and transboundary impacts. - Stakeholder engagement and detailed impact assessments (e.g., on social impacts) are limited.	ESS1 applies to all subproject procurement activities. The gaps in stakeholder engagement are addressed through the preparation of SEP. Other identified gaps in the previous column do not pertain to the subprojects. Screening procedures in Annex 1 and ESCOPs in Annex 2 adequately cover all subproject risks.

E&S Standard	Key Gaps	Relevance to subprojects
ESS2: Labor and Working Conditions	- Gaps in enforcing labor protections for contracted and community workers. - Lack of explicit integration of labor standards during the planning phase of development projects.	Relevant for ensuring that labor used subprojects adhere to worker's safety, fair wages, labour rights and grievance mechanism for workers. Annex 4 provides Labour Management Procedures (LMP) prepared to address the gaps
ESS3: Resource Efficiency and Pollution Prevention	- Limited focus on water, energy, and resource efficiency. - E-waste management policies lack enforcement mechanisms.	Relevant as digital infrastructure activities require energy-efficient systems and robust e-waste management plans. ESMF and Annex 3 include measures for resource efficiency and e-waste management
ESS4: Community Health and Safety	- Limited inclusion of community health and safety risks in Environmental Assessments. - No explicit policies for mitigating risks to vulnerable groups.	Relevant to the subprojects. ESMF and Annex 3 include measures to address community health and safety risks. SEP includes measures to engage vulnerable groups in project activities.
ESS5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement	- No formal mechanisms to compensate non-titleholders affected by land use restrictions. - Lack of comprehensive resettlement planning.	Not relevant to the subprojects as there will be no land acquisition. If any cabling is required for last-mile connectivity, it will be implemented within the right of way of existing roads. However, Annex 6 provides detailed procedures to address any temporary land disturbances and compensation.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	- Gaps in linking biodiversity assessments with development projects. - Lack of a robust biodiversity management plan that adheres to the mitigation hierarchy.	Relevant to the subproject on implementation of net gain measures under the Biodiversity Management Plan (BMP).
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Communities	- Bhutan does not officially recognize Indigenous Peoples under its 'One Nation, One People' policy. - Policies avoid using terms like "indigenous" or "tribes."	Not relevant to the subprojects. However, SEP ensures consultations with all affected stakeholders, including the vulnerable.
ESS8: Cultural Heritage	- Weak integration of cultural heritage considerations into environmental impact assessments. - Limited focus on intangible cultural heritage.	Not relevant to the subprojects. However, chance find procedures are developed and given in Annex 5.
ESS10: Stakeholder Engagement and Information Disclosure	- Stakeholder consultations are limited to the EC process and often exclude ongoing project stages. - Weak mechanisms for feedback and grievance redress.	Relevant to all subprojects. The SEP will be implemented to address these gaps.

4 Potential E&S Risks and Impacts and Standard Mitigation Measures

4.1 Component 1 Subprojects' E&S Risks and Impacts

The key procurement activities under Component 1 and potential E&S risks and impacts associated with its subprojects and the proposed mitigation measures to address these risks and impacts are given in **Table 4.1**.

Table 4.1: E&S Risk Management for Component 1 Activities

Procurement Category	Key Procurement Activities	E&S Risks and Impacts	Mitigation Measures
1. Software Solutions and IT Systems	- **Design, Development, and Licensing** of custom software (e.g., National Single Window, G-SOC software modules) - **Integration** of digital public infrastructure (e.g., digital ID systems, data/business intelligence hub) - **Cybersecurity Tools** (intrusion detection systems, firewall software)	- **Digital Exclusion**: Risk of excluding vulnerable groups (e.g., low-literacy or remote users) if platforms are not user-friendly or accessible. - **Data Privacy & Cybersecurity**: Data breaches or unauthorized access could undermine trust in e-services. - **Potential E-Waste** if software upgrades require decommissioning certain obsolete hardware or peripheral devices.	- **Inclusive Design**: Ensure user interfaces have multilingual support, accessibility options, and simple navigation; conduct stakeholder testing with women traders, rural communities, etc. - **Data Protection**: Enforce strong encryption, role-based access, and regular security audits. - **E-Waste Minimization**: Plan software architecture to be compatible with existing hardware where feasible; encourage vendor programs for old device recycling.
2. Hardware and IT Equipment	- **Servers, Network Equipment, and Storage** for data centers (including disaster recovery sites) - **Telecommunications Infrastructure** (modems, routers, small-scale telecom towers/antennas for last-mile connectivity) - **Workstations and Peripherals** for government agencies	- **E-Waste Generation**: Future disposal of replaced or outdated devices may harm the environment if not managed properly. - **Resource & Energy Use**: Data centers can be high-energy consumers, resulting in increased greenhouse gas emissions. - **Refrigerants with High Global Warming Potential:** hydrochlorofluorocarbons (HCFCs), chemicals commonly used in cooling systems, are significant contributors to ozone layer depletion. - **Minor Community Disruption** if last-mile connectivity installations require brief land	- **E-Waste Plan**: Establish partnerships with certified e-waste recyclers; require take-back clauses in vendor contracts. - **Energy Efficiency**: Procure equipment with energy-saving certifications (e.g., ENERGY STAR), and invest in renewable/efficient cooling systems. - **Environmentally Friendly Refrigerants**: Specify in the procurement documents that cooling equipment must use environmentally friendly alternatives such as hydrofluorocarbons (HFCs),

		access, trenching, or local construction.	isobutane, and propane (R-290). - **Community Engagement**: Consult local stakeholders regarding proposed construction works and ensure minimal land disturbance.
3. Consultancy Services	- **Project Management and Quality Assurance** (e.g., system integrators, technical advisors) - **Policy and Regulatory TA** (drafting data protection guidelines, cybersecurity legal framework, e-transaction regulations) - **Critical Infrastructure Protection (CIP) Plans** and associated technical assessments	- **Regulatory Gaps**: Inadequate or outdated legislation could lead to privacy violations or governance issues if advice is not aligned with best practices. - **Limited Inclusive Outreach** if consultancy teams overlook vulnerable groups during policy formulation or stakeholder engagement. - **Dependency on External Expertise**: Risk of insufficient knowledge transfer if local capacity is not built alongside international consultants.	- **Robust Stakeholder Engagement**: Consultations should involve affected groups—particularly women traders in remote communities—in policy design and validation workshops. - **Adherence to International Standards**: TA and legal frameworks should align with recognized good practices (e.g., European Union's General Data Protection Regulation principles for data protection). - **Capacity Building Strategy**: Consultancy ToRs must include a clear plan for transferring knowledge to local staff, ensuring sustainability after project completion.
4. Training and Capacity Building	- **Workshops, Seminars, and Courses** for government officials, customs agents, and stakeholders on new digital systems (NSW, cybersecurity, data sharing) - **Targeted Training** for women traders, small-scale enterprises, or local IT personnel	- **Unequal Access**: Women, persons with disabilities, or remote communities may face barriers (travel, time, language) that limit participation in capacity-building events. - **Quality Concerns**: If training materials are not tailored or culturally appropriate, participants may not adopt new systems effectively.	- **Inclusive Scheduling and Formats**: Offer multiple sessions, translated materials, e-learning options for remote communities, and childcare support if needed. - **Train-the-Trainer Approach**: Build local capacity by identifying community champions to cascade knowledge.

5. Minor Civil Works	- **Interior Fit-Out and Upgrades** for server rooms, data center expansions, and G-SOC facilities (e.g., partitioning, installation of wiring/cabling, HVAC systems) - **Small-scale construction** (e.g., co-location centres, cable trenching for improved connectivity)	- **Localized Environmental Impacts**: Dust, noise, and waste generation from trenching or facility expansion. - **Occupational Health and Safety (OHS)**: Workers may face risks from handling construction equipment, electrical cabling, or heavy lifting in tight spaces. - **Community Disturbance**: Temporary traffic detours or restricted access if located near populated areas.	- **Site-Specific Environmental Management**: Include ESCOP and LMP in contracts and implement them. - **OHS Compliance**: Provide personal protective equipment (PPE), conduct safety training, and implement safety signage and barriers around work zones. - **Consultations**: Consultations with communities and necessary compensation for any temporary disturbances to the affected communities. - **Timing & Coordination**: Coordinate small works to minimize peak traffic disruptions and avoid sensitive time windows (e.g., local festivities).

4.2 Component 2 Subprojects' E&S Risks and Impacts

The key procurement activities under Component 2 and potential E&S risks and impacts associated with its subprojects and the proposed mitigation measures to address these risks and impacts are given in **Table 4.2** for DoST works and in **Table 4.3** for DoFPS works.

Table 4.2: E&S Risk Management for Component 2 Activities related to the DoST

Procurement / Activity Category	**Key Procurement Activities**	**E&S Risks and Impacts**	**Mitigation Measures**
1. Minor Civil Works (Maintenance & Small-Scale Upgrades)	- **Performance-Based Maintenance** (PBM) for roads (routine patching, slope stabilization, small drainage works) - **Localized Upgrades**: Minor walkway/footpath construction, culvert repairs, or spot improvements	- **Localized Environmental Impacts**: Dust, noise, minor vegetation clearing, waste generation - Occupational Health & Safety (OHS): Road crew exposure to traffic risks - Community Disturbance: Traffic detours or restricted access if near populated areas	- **ESCOP and LMP**: Include standard clauses for dust/noise control, waste handling, labour management and worker safety - **OHS Measures:** Provide PPE, set up signage and barriers, schedule works to minimize disruption - **Public Communication**: Inform nearby residents of construction timing, traffic diversions, and safety procedures

Procurement / Activity Category	Key Procurement Activities	E&S Risks and Impacts	Mitigation Measures
2. Goods & Equipment (Road Asset Management & Road Safety)	- Maintenance Machinery: Vehicles, small-scale construction equipment - Road Asset Management System (RAMS) gear: GIS tools, sensors, data capture devices - Road Safety Devices: Signage, guardrails, reflective markings, speed control devices	- **E-Waste Generation**: Electronic sensors and data-logging equipment eventually require proper disposal - **Pollution & Resource Use**: Machinery operation consumes fuel; risk of oil spills - **Operator Safety**: Improper or unsafe equipment use can lead to injuries	- **Equipment Disposal Plan**: Use authorized recyclers for end-of-life electronics; include vendor take-back clauses - **Pollution Prevention**: Maintain machinery properly, store fuels/lubricants in secure areas with spill kits - **OHS Training**: Require proper licensing for equipment operators; conduct periodic safety briefings - **Road Safety Enhancement**: Deploy well-planned signage, guardrails, and speed bumps; ensure consistent monitoring of accident hotspots
3. Consultancy Services (Design, Supervision, E&S Studies)	- Feasibility & Detailed Design for ongoing road maintenance, small upgrades - Environmental & Social Assessments compliance with World Bank ESF requirements - Supervision & Monitoring for construction, biodiversity net gain (where relevant)	- **Inadequate Integration of E&S**: If design consultants do not incorporate climate resilience or biodiversity-friendly features - **Inadequate E&S Assessment**: Risks of E&S issues are not assessed as per the Bank's ESF requirements	- **Comprehensive ToRs**: Require explicit biodiversity and climate considerations in engineering design. **Comprehensive ToRs**: The ToRs must explicitly mention ESF requirements. They Are to be submitted for the World Bank's approval and no objection. - **Community & Stakeholder Engagement**: Involve local communities early in design updates; ensure inclusive consultations
4. Training & Capacity building (Road Safety, Maintenance, Climate Resilience)	- Technical Training for the DoST, MoIT, and local contractors - Community Outreach: Road safety campaigns	- **Limited Adoption**: Training benefits may be short-lived without follow-up or on-the-job mentoring - **Community Safety** Gap if outreach fails to reach local drivers or pedestrians,	- **Follow-up & On-the-Job Mentoring**: Reinforce training with periodic refreshers; encourage peer learning - **Community-Focused Safety Campaigns**: Collaborate with local leaders, civil society organisations, or extension workers to effectively deliver messages on safe road usage and wildlife coexistence

Table 4.3: E&S Risk Management for Component 2 Activities related to the DoFPS

Activity Category	Key Procurement Activities	E&S Risks and Impacts	Mitigation Measures
1. Habitat Enrichment Program	- **Clearing Invasive Alien Species (IAS)** and replanting palatable grasses in protected areas (PWS, RMNP), riparian corridors	- **IAS Re-invasion**: If clearing stops prematurely, invasive species can regrow - **Disturbance to Fauna**: Mechanized clearing, noise, and frequent human presence may unsettle wildlife	**Annual Clearing Cycle** (5-year minimum): Repeat clearing annually until native grasses become dominant **Vegetation Monitoring**: Track and document the regrowth of native grasses and coordinate with ongoing pilot programs (e.g., Bhutan for Life) - **Staged Clearing & Replanting**: Gradually clear smaller plots and replant immediately to prevent erosion or IAS regrowth - **ESCOP and LMP**: Apply noise/dust control measures, worker PPE, and seasonal restrictions to minimize disturbance (e.g., avoid breeding seasons)
2. Elephant Movement Corridor Development	- **Strategic Fencing** to protect farmland, leaving open routes for elephants	- **Limited HEC Reduction**: Enrichment mostly benefits habitats away from settlement areas, so HEC near farmland may persist - **Potential Bottlenecks**: Concentrating elephant movement in narrow underpasses may escalate human-elephant conflict (HEC) locally - **Land-Use Conflicts**: Communities may resist corridor planning if it restricts development or farmland expansion - **Minor Construction Disturbances**: Dust, noise	- **Participatory Corridor Planning**: Involve communities, DoFPS, DoST, and GMC in fence placement and corridor delineation - **Adaptive Corridor Design**: Combine fencing in sensitive farmland areas with open corridors for wildlife movement - **Ongoing Monitoring**: Use camera traps to measure corridor effectiveness; adjust boundary lines or fencing if conflicts arise - **Stakeholder Consultations**: Address local land-use concerns, ensure voluntary agreements or workable compensation mechanisms where corridor alignment intersects private land

Activity Category	Key Procurement Activities	E&S Risks and Impacts	Mitigation Measures
			- **ESCOP and LMP**: Apply dust/noise control, signage, and safe working procedures for minor civil works
3. Promoting Human–Wildlife Coexistence	- **Quick Response Teams (QRT)**: Equipping teams with vehicles and night-vision gear to address elephant raiding - **Fencing & Conflict Reduction**: Support communities with partial fencing solutions around hotspots - **Reporting Mechanisms** for poaching/illegal wildlife trade	- **Displaced Elephants**: Minor construction or road improvements can push elephants into farmland, escalating HEC - **Poaching**: Foreign labor influx or opportunistic behaviour could increase the risk of illegal hunting or wildlife product trade - **Community Safety**: Nighttime interactions with elephants can be dangerous if QRT or community members are ill-prepared	- **Well-Resourced QRT**: Provide adequate vehicles, torches, uniforms, and communications equipment; ensure staff training on safe wildlife deterrence. No weapons should be procured under the Project. - **Code of Conduct**: Prohibit hunting or wildlife trade among project workers; establish whistleblower hotlines - **Partial Compensation**: Offer limited financial or in-kind support if road works directly worsen HEC - **Fencing Guidance**: Promote cost-effective, climate-resilient fencing designs and ensure local communities receive needed technical or material support
4. Wildlife Movement Research	- **GPS Collaring** of elephants, data analysis of herd movements (cross-border) - **Camera Traps** placed near underpasses or canopy bridges - **Observational Studies**: Golden Langur monitoring around crossing structures	- **Stress to Elephants**: Capture, sedation, and collaring pose short-term risks if not done by qualified professionals - **Data Gaps**: Transboundary herds require coordination with Indian conservation authorities - **Limited Impact** if results are not integrated into corridor planning or infrastructure adjustments	- **Veterinary Best Practices**: Engage trained vets and follow humane animal handling protocols - **Cross-Border Collaboration**: Coordinate with Indian authorities for data sharing and comprehensive herd tracking - **Adaptive Management**: Use research findings to refine underpass/canopy designs, corridor alignments, or wildlife deterrent measures - **Monitoring & Sharing**: Publish periodic reports and share data with local stakeholders to inform real-time adjustments
5. Partnerships & Capacity Building	- **Institutional Strengthening**: Workshops and coordination among DoST, DoFPS, GMC planners, local communities, law enforcement, NGOs - **Cross-Border Collaboration**: Exchange programs and	- **Insufficient Capacity**: BMP measures could stall if implementing agencies lack training or resources - **Coordination Failures**: Overlapping mandates among institutions can create gaps in enforcement or duplication of efforts	- **Targeted Training & Equipment**: Provide offices with IT tools and vehicles for field monitoring; sponsor professional development in biodiversity management - **Clearly Defined Roles**: Formal agreements (MOUs) among agencies clarifying responsibilities, coordination protocols

Activity Category	Key Procurement Activities	E&S Risks and Impacts	Mitigation Measures
	transboundary elephant management efforts - **Periodic Performance Reviews** of BMP actions	- **Limited Transboundary Cooperation**: Without strong commitment, cross-border elephant strategies may fail	- **Cross-Border Workshops**: Facilitate dialogue with Indian counterparts, coordinate on elephant population monitoring and trade enforcement - **Adaptive BMP Reviews**: Conduct regular reviews of Net Gain strategy progress, refine as needed based on stakeholder feedback and monitoring data

4.3 Component 3 Subprojects' E&S Risks and Impacts

The potential E&S risks and impacts associated with Component 3 subprojects and the proposed mitigation measures to address these risks and impacts are given in **Table 4.4**.

Table 4.4: E&S Risk Management for Component 1 Activities

Subcomponent	Activity	Potential E&S Risks and Impacts	Mitigation Measures
1. Capacity Building of Key Government Agencies	• Human resource development • Technical training •Cross-agency coordination workshops and knowledge exchanges	- **Limited Inclusion of Vulnerable Groups**: If training programs do not proactively include women, rural staff, or underrepresented groups, there is a risk of unequal capacity-building benefits. - **OHS Considerations**: Workshops or onsite demonstrations (for example, field visits for transport inspection) may pose minor OHS hazards (travel, ergonomics, etc.). - **Travel**: If capacity-building events involve significant travel.	- **Inclusive Training Design**: Use selection criteria and outreach that ensure broad representation (including gender balance and disadvantaged staff). - **OHS Protocols**: Provide guidelines on basic safety and emergency contacts for all in-person events. - **Training Options**: Choose virtual or hybrid training options when feasible to reduce travel.
2. Policy and Regulatory Framework Enhancements	• Drafting/revision of transport and trade laws • Introduce or update technical standards, guidelines • Legislative review for climate resilience & social inclusion	- **Exclusion of Certain Groups in Policy**: New or revised regulations risk overlooking small-scale traders, female entrepreneurs, or remote communities lacking the capacity to meet new rules. - **Unintended Environmental Consequences**: Inadequate review of policy changes may encourage unsustainable resource use or fail to address climate adaptation/resilience. - **Delayed or Inconsistent Implementation**: Overly ambitious or unclear regulations could cause confusion, driving	- **Stakeholder Consultations**: Conduct inclusive consultations (women's business associations, farmer cooperatives, remote communities) to ensure new policies consider vulnerable groups. - **Environmental & Social Screening of Draft Policies**: Evaluate potential E&S impacts of new regulations or standards; align with best practices and relevant national laws and the ESF principles. - **Clear Implementation Roadmaps**: Provide capacity-

Subcomponent	Activity	Potential E&S Risks and Impacts	Mitigation Measures
		noncompliance, or ad hoc enforcement that fosters inequality or corruption.	building for enforcement agencies; adopt step-by-step rollout (including pilot phases) so regulated entities can adapt to changes.
3. Resilient Infrastructure Planning Pipeline	• Feasibility studies for future multimodal transport • Master plans for trade logistics hubs • Pipeline-management tools for climate-resilient infrastructure	- **Downstream Physical Footprint**: Though no civil works occur under these studies themselves, poorly considered master plans or feasibility studies could later lead to E&S impacts and risks. - **Inadequate E&S Assessment**: Risks of E&S issues are not assessed as per the Bank's ESF requirements - **Limited Stakeholder Engagement**: If these planning exercises fail to consult local communities, future projects risk social pushback and mistrust.	- **Integrate E&S Criteria in Feasibility Studies**: Ensure all pipeline studies apply World Bank ESF requirements and incorporate climate-resilient, nature-based solutions. - **Comprehensive ToRs**: The ToRs must explicitly mention ESF requirements. They are to be submitted for the World Bank's approval with no objection. - **Multistakeholder Planning**: Conduct structured consultations with community representatives, local NGOs, and sector experts. Document feedback loops so that local concerns are integrated into future design options.

4.4 Risks and Mitigation Measures Specific to Disadvantaged and Vulnerable Groups

The ACCESS Bhutan Project recognizes that certain groups may face greater difficulties in accessing project benefits and may be more adversely affected by project impacts. Based on the Stakeholder Engagement Plan (SEP), the following disadvantaged and vulnerable groups have been identified:

- Women traders and female-headed households – facing limited access to trade systems, financial services, and digital literacy barriers.
- Persons with disabilities (PWDs) – struggling with accessibility issues in digital trade platforms and physical transport infrastructure.
- Elderly individuals – facing difficulty adapting to digital trade and transport systems.
- Rural and remote communities – lacking reliable internet connectivity and awareness of trade facilitation systems.
- Low-income rural households with limited land holdings (less than 1.5 acres)
- Different socio-cultural groups - For inclusive engagement and benefits, it is essential to include different sociocultural groups
- Low-income workers in informal sectors – particularly migrant laborers, small traders, and daily wage earners, who lack job security and fair wages.
- Communities in environmentally sensitive areas – impacted by biodiversity conservation measures, restricted land use, and wildlife corridors.

Potential risks to the vulnerable groups and proposed mitigation measures are given in **Table 4.5.** By implementing these measures, the Project ensures that disadvantaged and vulnerable groups are not only protected from risks but also empowered to participate fully in Bhutan's evolving trade and transport systems. In addition, Targeted stakeholder engagement activities will be carried out in vulnerable groups as per the procedures given in the SEP.

Table 4.5: Potential Risks on Vulnerable Groups and Mitigation Measures

Vulnerable Group	**Potential Risks and Impacts**	**Mitigation Measures**
Women traders and female-headed households	- Limited digital literacy leading to exclusion from trade opportunities. - Potential gender-based violence (GBV) and harassment at border trade facilities.	- Implement digital literacy programs tailored for women traders. - Ensure gender-sensitive consultation sessions and participation in decision-making. - Establish safe and secure trade facilities, including women-friendly grievance mechanisms.
Persons with disabilities (PWDs)	- Limited accessibility in digital platforms and transport infrastructure. - Social stigma and lack of inclusive consultation mechanisms.	- Ensure National Single Window (NSW) and trade platforms comply with accessibility standards (e.g., screen readers, voice commands). - Develop inclusive transport infrastructure (ramps, accessible rest areas, and Braille signage). - Engage organizations supporting PwDs in stakeholder consultations.
Elderly individuals	- Difficulty adapting to digital systems and lack of technical assistance. - Limited mobility in accessing transport and trade services.	- Establish in-person support centers for elderly traders. - Conduct awareness programs and capacity-building sessions.
Rural and remote communities	- Limited internet access and poor connectivity. - Lack of awareness about digital trade platforms.	- Improve rural connectivity and provide localized training programs in local languages. - Conduct awareness campaigns on digital trade platforms
Low-income workers in informal sectors	- Risk of unsafe labor conditions and lack of worker protections. - Potential wage exploitation and job insecurity.	- Enforce OHS measures for all project activities. - Ensure fair wages and social protection measures for informal workers.
Communities in environmentally sensitive areas	- Restrictions on traditional land use due to biodiversity conservation. - Increased human-wildlife conflicts due to road construction.	- Implement the net gain measures in a way that balances conservation with livelihood protection. - Develop alternative income-generation programs for affected communities, including the provision of incentives/subsidies. - Explore insurance or compensation mechanisms for crop damage caused by wildlife.
Socio-cultural groups with distinct identities	- Exclusion from project participation due to language and cultural barriers. - Potential loss of cultural identity due to land-use changes.	- Conduct culturally appropriate consultations in local languages. - Ensure customary practices and traditions are respected in in subproject planning.

4.5 Planning and Design Considerations for Avoidance of E&S Risks and Impacts

To avoid and minimize environmental and social impacts in the early stages of subproject planning and design, each component and subcomponent integrates preventive and mitigation strategies. The cross-cutting good practices across all components are summarized below, and detailed measures for each component are given in the following subsections.

- **Early and Inclusive Stakeholder Engagement**: Across all components, hold consultations early—before finalizing subproject design or policy frameworks. This approach addresses local concerns (resettlement fears, ecological priorities, or livelihood disruptions) and fosters broad ownership.
- **Alternatives Analysis**: In every feasibility study or design phase (roads, corridors, new technology for Customs, etc.), evaluate multiple design alternatives (routes, technologies, location) to ensure potential environmental or social risks are minimized at the source.
- **Proactive e-Waste Management**: Plan e-waste management disposal or recycling from the outset by partnering with licensed recyclers.

4.5.1 Component 1 Planning and Design Considerations

1. **Assess Siting for New Hardware or Facilities**
    - Data Centers or Server Rooms: If new or expanded data centers are needed, use existing government buildings to reduce the physical footprint and avoid unnecessary land use.
    - Conduct basic structural reviews and emergency preparedness checks (for example, ensuring the building is earthquake-resistant or has suitable fire-suppression systems).
2. **Select Energy-Efficient Technologies**
    - Include energy efficiency criteria (e.g., EnergyStar[5], EPEAT certification[6]) in hardware procurement to reduce power consumption.
3. **Plan for E-Waste Management from the Outset**
    - Include take-back clauses or recycling requirements in supplier contracts.
    - Develop an e-waste disposal or recycling protocol in collaboration with licensed recyclers or government e-waste programs.
4. **Procure Cooling Systems with Environmental-Friendly Refrigerants**
    - Specify in the procurement documents that cooling equipment must have environmentally friendly alternatives[7] such as hydrofluorocarbons (HFCs), isobutane, and propane (R-290).
5. **Prepare Simple Emergency/Safeguard Protocols**

[5] ENERGY STAR is a globally recognized certification program developed by the U.S. Environmental Protection Agency (EPA) that identifies energy-efficient appliances, electronics, and office equipmen

[6] EPEAT (Electronic Product Environmental Assessment Tool) is a global sustainability standard for electronic products, managed by the Global Electronics Council (GEC). It evaluates products based on environmental performance across their entire lifecycle

[7] Bhutan has been systematically reducing hydrochlorofluorocarbons (HCFC) consumption since 2013, aiming for complete elimination by 2025, ahead of the 2030 deadline set by the Montreal Protocol

- For office expansions or data center upgrades, adopt basic hazard/risk assessments (fire safety, ventilation, backup power) and emergency response procedures for staff.

4.5.2 Component 2 Planning and Design Considerations

Subcomponent 2.1: Biodiversity Management

1. **Planning of Activities**
   - Plan and implement international good practices such as an ecosystem-based management approach for habitat restoration and biodiversity net gain measures, as well as long-term monitoring.
2. **Screen Potential Sites**
   - Before field interventions (e.g., habitat enrichment zones or fences), use satellite mapping and biodiversity baseline data to choose sites with the least risk of habitat disturbance.
   - If invasive species (IAS) control is planned, consult early with ecologists to select methods with minimal off-target effects (like manual removal or localized less-hazardous herbicides).
3. **Incorporate Wildlife-Friendly Design**
   - Elephant Corridors or Fencing: Use stakeholder consultation to confirm safe corridor routes and minimize farmland impacts; design fences to reduce accidental entrapment of non-target species.
   - Plan for canopy bridges or underpasses where necessary to maintain connectivity for the Golden Langur or other species.
4. **Early Collaborative Planning**
   - Collaborate with local communities on land use to avoid conflicts (for example, farmland encroachment).
5. **Emergency Preparedness for Wildlife-Human Conflict**
   - In designing early warning systems or rapid-response units, incorporate clear protocols for dealing with stray wildlife in fields or settlements.
   - Train local communities (e.g., how to use phone hotlines, not to approach injured wildlife, etc.).

Subcomponent 2.2: Road Asset Management

1. **Route and Asset Planning to Avoid Sensitive Areas**
   - Evaluate alternative alignments (for major maintenance or expansions) to steer clear of critical habitats, steep slopes, or flood-prone zones.
   - Where roads pass near parks or conservation areas, incorporate wildlife crossings or signage early in design.
2. **Integrate Climate-Resilient, Low-Impact Techniques**
   - Slope stabilization with bioengineering (e.g., using local grass and shrub species) to reduce erosion.
   - Design roads with adequate drainage systems that consider heavier rainfall events.
   - Minimize aggregate sourcing by using existing quarries or reusing waste materials.

3. **Minimize Construction-Phase Impacts**
    - Plan waste disposal sites early, especially for asphalt or other hazardous wastes.
    - Evaluate safe Storage of fuels/lubricants with spill-prevention plans.
    - Prepare a traffic management strategy for worker and community safety.

Subcomponent 2.3: Multimodal Connectivity

1. **Feasibility Studies that Screen Potential Environmental and Social Issues**
    - For potential IWT routes or new dry ports, integrate preliminary ES screening: Are we near wetlands, farmland, or culturally sensitive zones?
    - Factor in river hydrology and climate-change predictions in early route design to avoid excessive dredging or disruption of fish/spawning grounds.
2. **Land Acquisition Minimization**
    - Where studies propose new transport corridors (rail or water terminals), use the avoid/minimize/mitigate hierarchy:
        - Avoid sites that need large-scale displacement or cut through prime farmland.
        - Minimize by optimizing footprints; consider alternative engineering or technology.
3. **Community Engagement from Start**
    - Identify local stakeholders (e.g., local governments, farmers) early to get input on corridor alignment or port siting.
    - Explore alternative technologies that reduce noise, dust, or emissions.
4. **Plan for Climate and Disaster Risks**
    - For inland water transport, evaluate river flow variability and potential flood hazards in site selection.
    - Design or retrofit terminals with flood-resilient foundations and contingency plans for extreme weather.

4.5.3 Component 3 Planning and Design Considerations

1. **Preemptive Stakeholder and Policy Analysis**
    - While drafting or updating transport/trade laws, identify potential unintended environmental or social side effects. For instance, will a new regulation about multimodal logistics inadvertently promote certain areas over others, leaving out remote communities?
    - Set up stakeholder feedback loops to gather inputs from small-scale traders, women's cooperatives, or local government.
2. **Legal & Regulatory Harmonization**
    - Cross-check new or revised policies with existing environmental regulations (wildlife acts, water acts) to avoid contradictory mandates.
    - If climate resilience is a key aspect, incorporate disaster risk management measures in transport laws.
3. **Capacity Building Curriculum**

- For training design, adopt inclusive strategies to ensure underrepresented officials (especially from rural districts) can attend or receive remote training.
- Integrate basic E&S modules (like screening steps for subprojects' public consultation principles) in standard management courses.

4. E&S Considerations and ESF Requirements in Feasibility Studies

- Ensure all feasibility studies apply World Bank ESF requirements and incorporate climate-resilient, nature-based solutions.
- Draft ToRs to explicitly mention ESF requirements. The ToRs are to be submitted for the World Bank's approval with no objection. Thereafter, prepare and finalize the outputs of such activities in compliance with the ToRs.

5 Procedures and Implementation Arrangements

5.1 Environmental and Social Risk Management Procedures

The E&S risk management procedures will be implemented through the Project's subproject selection process. A summary of the E&S management procedures to be followed throughout the project cycle is given in **Table 5.1**.

Table 5.1: Project Cycle and E&S Management Procedures

Project Stage	E&S Stage	E&S Management Procedures
a. Assessment and Analysis: Subproject Identification	Subproject type	1. If the subproject is related to the procurement of consultancy services for TA studies, no screening is needed. The terms of reference (ToRs) for the studies to be submitted for the World Bank review and no objection. Thereafter, prepare and finalize the outputs of such activities in compliance with the ToRs. 2. If the subproject involves the procurement of goods, installation of equipment, or work, proceed with the screening in the next step.
	Screening	3. During subproject identification, ensure subproject eligibility by referring to the Exclusion List in **Table 5.2** below. 4. Use the **Screening Form in Annex 1** to identify and assess potential E&S risks and impacts. 5. Based on the Screening Form, identify and adopt the relevant E&S measures given in (i) Environmental Codes of Practices (ESCOP) in **Annex 2** (ii) Labour Management Procedures (LMP) in **Annex 4** (iii) Chance Find Procedures (CFP) in **Annex 5** (iv) Temporary Land Disturbance and Compensation in **Annex 6** (v) Key planning and design considerations given in **Section 4.5.** 6. Identify the appropriate documentation and ECs required under Bhutan's E&S regulatory systems
b. Formulation and Planning: Planning for subproject activities	Planning	1. Submit the screening forms for 5 subprojects (for each subcomponent) along with the relevant E&S measures for review and no objection by the World Bank prior to World Bank prior to initiating bidding processes (for subprojects involving bidding processes) and/or launching activities (for subproject activities not subject to bidding). 2. Share the subproject details with the stakeholders in an accessible manner, and consultations will be held with the affected communities in accordance with the SEP. 3. Train staff responsible for implementation and monitoring of plans. 4. Incorporate relevant environmental and social procedures and plans into contractor bidding documents; train contractors on relevant procedures and plans.

Project Stage	E&S Stage	E&S Management Procedures
		5. If the Screening Form indicates the proposed subproject falls into the Blue Category and requires EC, prepare an Environmental and Social Management Plan (ESMP) using the template given in **Annex 3**. 6. Complete all documentation, permits, and clearances required for EC.
c. Implementation and Monitoring: Implementation support and continuous monitoring of projects	Implementation	1. Ensure implementation of plans through site visits and regular monitoring. 2. Submit quarterly reports on the E&S performance of the Project by covering the • Status of preparation and implementation of screening and E&S documents as specified in ESCP. • Summary of stakeholder engagement activities carried out as per the Stakeholder Engagement Plan. • Complaints submitted to the grievance mechanism(s), the grievance log, and progress made in resolving them. • E&S performance of contractors and subcontractors is reported through monthly reports from contractors and supervision firms. • Status on implementation of biodiversity management plans. • Summary of capacity building activities conducted • Number and status of resolution of incidents and accidents reported 3. Conduct training for PMU and PIU staff and Project workers on E&S risk management, biodiversity and critical habitat species management, OHS, construction monitoring and auditing, stakeholder engagement, prevention and response to SEA/SH, management of Grievance Mechanism, implementation of livelihood restoration activities, occupational and Community Health and Safety, incident reporting procedures, and emergency preparedness and response procedures.
d. Review and Evaluation: Progress and completion of E&S mitigation measures	Completion	1. Assess whether E&S measures have been effectively implemented 2. Ensure that the physical sites are properly restored after completion of civil works 3. Prepare the completion report describing the final status of compliance with E&S risk management measures and submit it to the World Bank

More details for each stage are provided in the following subsections.

5.1.1 Subproject Assessment and Analysis – E&S Screening

The **first step** involves screening all proposed activities to confirm they align with the Project's eligible activities and are not included in the E&S Exclusion List found in **Table 5.2**.

Table 5.2: Exclusion List – Activities Excluded from Project

- Weapons and hazardous goods (e.g., mines, guns, ammunition, explosives)
- Production or trade in alcohol, tobacco, or controlled substances
- Any construction in protected areas or biodiversity conservation priority areas not consistent with the relevant protected area management plans
- Activities leading to the degradation of critical habitats
- Large-scale commercial logging, deforestation, or land conversion for agriculture
- Purchase or use of banned/restricted pesticides, insecticides, herbicides, and other dangerous chemicals (banned under national law and World Health Organization (WHO) category 1A and 1B pesticides)
- Construction of new dams or irrigation projects linked to dam operations
- Projects that impact international waterways
- Any activities affecting physical cultural heritage (e.g., historical relics, temples, archaeological sites)
- Projects causing forced labor, child labor, or human trafficking
- Projects on disputed land or with tenure rights conflicts
- Any activity that requires involuntary physical displacement
- High-risk environmental and social activities requiring an ESIA or EIA
- Activities requiring Free, Prior, and Informed Consent (FPIC) as defined in ESS 7
- Use of hydrochlorofluorocarbons (HCFCs) as refrigerant in cooling systems

As a **second step**, the E&S staff in the respective PMU/PIU will use the E&S Screening Form in Annex 1 to identify and assess relevant E&S risks specific to the activities and determine the appropriate mitigation measures.

The Screening Form includes a checklist of potential risks and impacts, ensuring that the appropriate E&S Management measures are selected, such as:

- Environmental and Social Codes of Practice (ESCOPs) for construction and operational activities (**Annex 2**).
- Environmental and Social Management Plans (ESMPs) for subprojects in the Blue Category (**Annex 3**).
- Labor Management Procedures (LMPs) to address worker rights, safety, and welfare (**Annex 4**).
- Chance Find Procedures (CFPs) for managing unexpected discoveries of cultural or archaeological artifacts (**Annex 5**).
- Procedures for Temporary Land Disturbance and Compensation (**Annex 6**)
- Stakeholder Engagement Plans (SEP) to ensure meaningful consultation and participation of affected communities.

For the subprojects that fall into the 'blue category,' the PMU/PIU will be responsible for obtaining Environmental Clearance (EC) from the Department of Environment and Climate Change (DECC).

5.1.2 Subproject Formulation and Planning – E&S Planning

Based on the E&S Screening Form results, the E&S staff in the PMU/PIU will adopt the necessary E&S management measures included in the Annexes of this ESMF (such as the ESCOPs, LMP, Chance Find Procedures and temporary land disturbance and compensation).

The first five completed screening forms in each subcomponent will be submitted to the World Bank for prior review and no objection. After this first 5, the World Bank and the PMUs will reassess whether the prior review is needed for further Screening Forms or a certain category of Screening Forms (for example, for certain types of activities like digital connectivity improvements under subcomponent 1.4).

For subprojects that fall into the blue category, site-specific Environmental and Social Management Plans (ESMPs) are necessary. The E&S staff in the PMUs will prepare these ESMPs and other required documents, ensuring that all relevant stakeholders are informed and consulted. ESMPs will be submitted for the World Bank review. Approval and consolidation of ESMPs and related forms will be undertaken by the implementing agency's central oversight team. The contents of the ESMPs will be shared in an accessible manner, and consultations will be conducted with affected communities to explain the environmental and social risks and planned mitigation measures.

At this stage, staff who will be working on the various subproject activities should be trained in the environmental and social management plans relevant to their work. The PMUs should provide such training to field staff.

To avoid and minimize environmental and social impacts in the early stages of subproject planning and design, each component and subcomponent integrates preventive and mitigation strategies. The cross-cutting good practices across all components are given in **Section 4.5**.

The E&S staff in the PMUs should ensure that relevant environmental and social procedures and plans are incorporated into contractor bidding documents. They should also ensure that all selected contractors, subcontractors, and vendors understand and incorporate environmental and social mitigation measures relevant to them as standard operating procedures for civil works. They should provide training to selected contractors to ensure that they understand and incorporate environmental and social mitigation measures; they should also plan for cascading training to be delivered by contractors to subcontractors and vendors. The E&S staff in the PMUs should further ensure that the entities or communities responsible for ongoing operation and maintenance of the investment have received training on operations stage environmental and social management measures as applicable.

5.1.3 Implementation and Monitoring – E&S Implementation

During implementation, the E&S staff in the respective PMU/PIU will conduct regular monitoring visits to ensure compliance with E&S mitigation measures. The contractors and subcontractors implementing subproject activities will be responsible for the on-the-ground execution of E&S mitigation measures. The E&S staff in the PMU/PIU will conduct monthly site visits to verify compliance and ensure corrective actions are taken where necessary.

The implementing agencies prepare quarterly environmental and social monitoring reports covering:

- Overall implementation of E&S risk management measures, including compliance with ESCOPs, ESMPs, and labor management procedures.
- Identification of any environmental or social issues arising from project activities, along with proposed mitigation actions and timelines.

- Occupational Health and Safety (OHS) performance, including reporting of incidents, accidents, and near-misses.
- Community health and safety concerns, particularly for communities near road construction, trade hubs, and biodiversity conservation areas.
- Stakeholder engagement activities, including community consultations and information dissemination as per the Stakeholder Engagement Plan (SEP).
- Public notifications and communications regarding project progress, risks, and grievance redress updates.
- Progress on project implementation, including completion rates of infrastructure works, digital trade system upgrades, and conservation activities.
- Summary of grievances and beneficiary feedback, detailing the number of complaints received, actions taken, and resolution status in line with the SEP's Grievance Redress Mechanism (GRM).

Throughout the Project implementation stage, the E&S staff of PMU will continue to provide training and awareness raising to relevant stakeholders, such as staff, selected contractors, and communities, to support the implementation of the environmental and social risk management mitigation measures. An initial list of training needs is proposed below in **Section 5.4**.

Throughout project implementation, the implementing agencies will continue to provide training and awareness-raising sessions for:

- Project staff and government officials on environmental and social risk management procedures.
- Contractors, subcontractors, and vendors on compliance with E&S mitigation measures, labor management standards, and worker safety.
- Community stakeholders on biodiversity protection, human-wildlife coexistence, road safety, and sustainable trade practices.

The E&S staff will also track grievances/beneficiary feedback (in line with the SEP) during project implementation to use as a monitoring tool for the implementation of project activities and environmental and social mitigation measures.

Last, if the implementing agencies become aware of a serious incident in connection with the Project, they must notify the World Bank within 48 hours. Serious incidents include:

- Fatalities or major workplace accidents.
- Incidents of forced or child labor.
- Violations of community rights, including gender-based violence (GBV).
- Violent community protests or security risks.
- Kidnappings or extreme labor abuses.

A formal Corrective Action Plan must be submitted to the World Bank within ten days, outlining mitigation measures and steps taken to prevent recurrence.

5.1.4 Review and Evaluation – E&S Completion

Upon completion of Project activities, the E&S staff in the PMU/PIU will review and evaluate the progress and completion of project activities and all required environmental and social mitigation measures. Especially for civil works, the E&S staff in the PMU/PIU will monitor activities with regard to site restoration in the affected areas to ensure that the activities are done to an appropriate and acceptable standard before closing the contracts in accordance with measures identified in the Screening Forms/ESMPs and other plans. The sites must be restored to at least the same condition and standard that existed prior to the commencement of works. Any pending issues must be resolved before a subproject is considered fully

completed. The E&S staff in the PMU/PIU will prepare the completion report describing the final status of compliance with the E&S risk management measures and submit it to the World Bank.

5.2 Technical Assistance Activities

The E&S staff in the PMU/PIU will ensure that the consultancies, studies (including feasibility studies), capacity building, training, and any other technical assistance activities under the Project are carried out in accordance with the Terms of Reference (ToRs) acceptable to the Bank, that are consistent with the ESSs. They will also ensure that the outputs of such activities comply with the ToRs.

5.3 Implementation Arrangements

The Project will be implemented mainly by national-level agencies, such as the DoST, Gov.Tech, and DoFPS. DoST and GovTech will establish PMUs, and the DoFPS will establish a PIU. The Dzongkhag-level DoST and DoFPS staff will be responsible for site inspections of subprojects in their districts. The roles and responsibilities of these agencies are given in **Table 5.3**.

Table 5.3: Implementation Arrangements for E&S Management

Level/Responsible Party	Roles and Responsibilities
National Level – GovTech, DoST and DoFPS	• Provide overall oversight, quality control, and strategic guidance on E&S risk management. • Ensure compliance with Bhutan's environmental regulations and this ESMF. • Report project-wide E&S performance to the World Bank on a quarterly basis. • Ensure that all bidding and contract documents include E&S provisions. • Manage the Grievance Redress Mechanism (GRM) at the national level. • Oversee E&S compliance within their respective components. • Assign Environmental and Social Staff within each PMU/PIU. • Prepare Screening Forms and ESMPs, ensuring consistency with regulations. • Provide training and capacity building to field staff, contractors, and community representatives. • Coordinate with national regulatory agencies (NEC, DECC) for permits and clearances. • Complete all steps in Table 5.1 on E&S risk management of subprojects
Dzongkhag/local field staff - GovTech, DoST and DoFPS	• Ensure that project activities do not fall under the negative list specified in Table 5.2. • Support the PMU/PIU in filling out Screening Forms for subproject activities and submitting them to the national level. • Conduct daily monitoring of environmental and social mitigation measures. • Engage with local communities through consultations and Grievance Redress Mechanism (GRM) reporting.
Contractors and Subcontractors	• Implement E&S risk management measures outlined in ESCOPs, ESMPs and LMP. • Conduct worker training on OHS, grievance redress, and environmental mitigation. • Maintain records of accidents, near misses, and community grievances. • Submit E&S compliance reports on a monthly basis.

5.4 Proposed Training and Capacity Building

The institutional capacity of the implementing agencies needs to be strengthened for the successful implementation of the Project and the effective implementation of the environmental and social risk management measures outlined in this ESMF. Training and capacity building will be necessary for the key stakeholders in order to ensure the effective implementation of the ESMF, SEP, and other environmental and social documents. An initial training approach is outlined in **Table 5.4**. To the greatest possible extent, training on environmental and social risk management will be integrated into the project cycle and operational procedures. Given the need to raise awareness among project workers and stakeholders at many levels, a cascading model is proposed where information will follow from the national level to the field level by following a train-the-trainer approach by identifying community champions.

Table 5.4: Proposed Training and Capacity Building Approach

Level	Responsible Party	Audience	Topics/Themes Covered
National Level	DoST E&S Consultants, World Bank	- National staff is responsible for the overall E&S implementation. - PMUs/PIU E&S Staff	- Overview of the ESMF and its implementation - Identification and assessment of E&S risks. - Selection and application of E&S risk management measures (ESCOP). - E&S monitoring and reporting requirements. - Incident and accident reporting, including response procedures. - LMP, including Code of Conduct, SEA/SH prevention, and grievance mechanisms. - Application of SEP and the grievance/beneficiary feedback mechanism.
Dzongkhag/ Regional Level	E&S Consultants of PMU/PIU	Dzongkhag staff Contractors	- Identification and assessment of E&S risks at the regional level. - Compliance with ESCOPs and ESMPs for specific project activities. - E&S monitoring and reporting, incident management. - Application of LMP, including contractor obligations on worker safety, SEA/SH, and grievance redress. - Worker Code of Conduct, including the prohibition of child/forced labor. - OHS measures and PPE requirements - Implementation of SEP and engagement with local stakeholders. - Implementation of Grievance Mechanism
Community Level	PMUs of GovTech and DoST, PIU of DoFPS	Traders, Small businesses, and Community members relevant	- Digital literacy and cyber security - biodiversity protection and Human-wildlife coexistence - SEA/SH awareness and reporting mechanisms.

Level	Responsible Party	Audience	Topics/Themes Covered
		to project activities	- Grievance redress process and community participation mechanisms.

5.5 Estimated Budget

The Project has incorporated environmental and social management costs within the overall project budget to ensure compliance with the World Bank and Bhutan's E&S requirements. These costs include staff salaries, capacity building, monitoring, stakeholder engagement, grievance redress mechanisms, and implementation of ESMF. The contractors will be responsible for the implementation of ESCOPS, LMP, and other E&S management measures relevant to their contract work. Hence, no separate budget is proposed for the implementation of ESMF.

6 Stakeholder Engagement, Disclosure and Consultations

A separate Stakeholder Engagement Plan (SEP) has been prepared for the Project, based on the World Bank's ESS 10 on Stakeholder Engagement. The SEP outlines stakeholder identification, consultation mechanisms, information disclosure strategies, and grievance redress procedures to ensure inclusive participation throughout the project lifecycle.

The SEP is available at: https://www.moit.gov.bt/en/access-bhutan-project/

This SEP was disclosed for stakeholder consultations on the MoIT's official website on November 22, 2024.

6.1 Stakeholder Consultations Conducted

The Project has engaged with a wide range of stakeholders, including:

- Affected communities and civil society organizations
- Local Governments (Gups, Gewogs, and Dzongkhags).
- Business and trade representatives, including small traders, transport operators, and women-led businesses.
- Vulnerable groups, including women, youth, persons with disabilities, and economically disadvantaged communities.

There has been overwhelming support for the project activities. Stakeholders raised the following concerns and suggestions:

- Small businesses and traders highlighted the need for capacity-building programs to navigate digital trade and transport reforms.
- Women's groups advocated for greater representation in trade facilitation policies and workforce inclusion.
- Community members requested clarifications on the grievance mechanism and compensation procedures if there is any land acquisition.

The Project commitments in response to the stakeholder's feedback are summarized below:

- A capacity-building program will be implemented for small traders, women entrepreneurs, and rural businesses to support their transition to digital trade platforms.
- Gender-sensitive trade and transport policies will be incorporated into the project design, ensuring women's participation in stakeholder committees.
- The land will not be acquired for the subprojects. If required, the Project will ensure transparent compensation mechanisms for landowners, aligned with Bhutan's Land Act, Resettlement Guidelines, and ESS 5.

The SEP will be updated periodically based on emerging issues and stakeholder feedback. Stakeholders will be kept informed through regular public meetings, information sessions and project updates on the implementing agencies' websites and social media platforms. The Project remains committed to transparent engagement, social inclusion, and sustainability, ensuring that all voices are heard and addressed throughout the implementation period.

Annex 1: Screening Form

The E&S Screening procedure comprises two stages: (1) Initial screening by using the Exclusion List in Table 5.2 of the ESMF and (2) Screening of the proposed activities to identify the approach for E&S risk management. This Screening Form is the second stage of the screening process and is to be used for all subproject activities. The completed forms will be signed and kept in the Project ESF file. The World Bank will review a sample of the forms (five from each subcomponent).

1. Subproject Information:

Subproject Title	
Subproject Location	
Regional Unit in Charge	
Estimated Cost	
Start/Completion Date	
Brief Description of Subproject	

2. Environmental and Social Screening Questionnaires

Questions	Answer		Next Steps
	Yes	No	
ESS1			
1. Is the subproject likely to have significant adverse environmental impacts that are sensitive and unprecedented that trigger the 'Ineligible Activities' or other exclusion criteria?			If "Yes": Exclude from project.
2. Does the subproject involve small-scale civil works such as renovation of existing buildings and cable trenching or fall into the 'green list' of subprojects (see the footnote[8])			If "Yes": 1. Apply relevant measures based on the ESCOPs in Annex 2 2. Include E&S risk management measures in bidding documents.
3. Does the subproject involve major construction or rehabilitation works that fall into the 'blue' list of subprojects (see the footnote[9])			f "Yes": 1. Prepare a site-specific E&S Assessment and/or ESMP for the proposed subproject, based on the template in Annex 3.

[8] Green list: The following activities are included: construction of residential houses; development of archery grounds/ranges and labor camps; establishment of crematoriums and screening plants for separating sand, stones/boulders; implementation of small-scale water supply systems (≤10,000 L/day); mitigation and permanent infrastructure works such as retaining walls, breast walls, and causeways; construction and operation of hotels within designated Thromde boundaries; installation of utilities/service lines within approved Local Area Plans; development of parking facilities, urban roads and drainage systems (within approved LAP), and trails; building repair and maintenance services; monsoon damage restoration works; construction of religious monuments like Lhakhangs and Chortens; manufacture of wooden/steel furniture including paneling and wood joineries; and the operation of toothpick manufacturing units.

[9] Blue list: The development involves various activities including the construction of housing estates, urban roads, drainage, river training works, surface collection of sand and boulder, sand dredging, setting up of ropeways, irrigation channels, floriculture, horticulture, recreational facilities, dump yards, automobile services, telecommunication towers, private roads, and hot mix/wet mix/asphalt/bitumen/concrete batching plants, as well as the construction of community and educational facilities, the engraving and polishing of wood and stones on a medium to large scale, and the establishment of waste management facilities.

			2. Include E&S risk management measures in bidding documents.
4. Does the project lead to any risks and impacts on, individuals or groups who, because of their particular circumstances, may be disadvantaged or vulnerable.[10]			If "Yes": Apply relevant measures described in the ESMF and SEP.
ESS2			
5. Does the subproject involve uses of goods and equipment involving forced labor, child labor, or other harmful or exploitative forms of labor?			If "Yes": Exclude from project.
6. Does the subproject involve recruitment of workforce including direct, contracted, primary supply, and/or community workers?			If "Yes": Apply LMP in Annex 4.
7. Will the workers be exposed to workplace hazards that needs to be managed in accordance with local regulations and World Bank environmental health and safety guidelines? Do workers need PPE relative to the potential risks and hazards associated with their work?			If "Yes": Apply LMP in Annex 4.
8. Is there a risk that women may be underpaid when compared to men when working on the project construction?			If "Yes": Apply LMP in Annex 4.
ESS3			
10. Is the project expected to generate waste and pollution that cannot be mitigated by the mitigation measures provided in the ESCOP in Annex 2, thus requiring additional mitigation measures?			If "Yes": 1. Prepare necessary mitigation measures for the proposed subproject and amend it to the ESCOP. 2. Include E&S risk management measures in bidding documents.
13. Does the activity rely on existing infrastructure (such as discharge points) that is inadequate to prevent environmental impacts?			If "Yes": 1. Apply relevant measures based on the ESCOPs in Annex 2 2. Include E&S risk management measures in bidding documents.
ESS4			
14. Is an influx of workers, from outside the community, expected? Would workers be expected to use health services of the community? Would they create pressures on existing community services (water, electricity, health, recreation, others?)			If "Yes": Apply LMP in Annex 4.
15. Is there a risk that SEA/SH may increase as a result of project works?			If "Yes": Apply LMP in Annex 4.
ESS5			

[10] "Disadvantaged or vulnerable" refers to those individuals or groups who, by virtue of, for example, their age, gender, ethnicity, religion, physical, mental or other disability, social, civic or health status, sexual orientation, gender identity, economic disadvantages or ethnic peoples status, and/or dependence on unique natural resources, may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits.

16. Will the subproject cause temporary disturbances to the existing land use and may require compensation?			If "Yes": Apply Temporary Land Disturbance and Compensation in Annex 6.
ESS6			
17. Does the subproject involve activities that have potential to cause any significant loss or degradation of critical habitats[11] whether directly or indirectly, or which would lead to adverse impacts on natural habitats[12]?			If "Yes": Exclude from project.
18. Will there be any significant impact on any ecosystems of importance (especially those supporting rare, threatened or endangered species of flora and fauna)?			If "Yes": Exclude from project.
19. Will this activity require clearance of vegetation, including invasive species?			If "Yes": 1. Prepare a site-specific ESMP for the proposed subproject, based on the template in Annex 3. 2. Include E&S risk management measures in bidding documents.
ESS8			
20. Is the subproject to be located adjacent to a sensitive site (historical or archaeological or culturally significant site) or facility?			If "Yes": Apply Chance Find Procedures in Annex 5.
21. Locate near buildings, sacred trees or objects having spiritual values to local communities (e.g. memorials, graves or stones) or require excavation near there?			If "Yes": Apply Chance Find Procedures in Annex 5.

3. Conclusion

Based on the result from the screening above, please list the E&S risk management category (green or blude) and measures or instruments (e.g. ESCP, LMP or ESMP) to be prepared / adopt and implemented:

a)

b)

Name and title of the person who conducted the screening:

Date of screening:

Annex 2: E&S Codes of Practice (ESCOP)

To manage and mitigate potential negative environmental impacts, the project applies Environmental Codes of Practice (ESCOPs); outlined in this document. The ESCOPs contain specific, detailed and tangible

[11] Environmental and Social Standard 6, paragraph 23: "Critical habitat is defined as areas with high biodiversity importance or value, including (a) Habitat of significant importance to Critically Endangered or Endangered species, as listed in the IUCN Red List of threatened species or equivalent national approaches; (b) Habitat of significant importance to endemic or restricted-range species; (c) Habitat supporting globally or nationally significant concentrations of migratory or congregatory species; (d) Highly threatened or unique ecosystems; and (e) Ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described above in (a) to (d)."

[12] Environmental and Social Standard 6, paragraph 21: "Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition."

measures that would mitigate the potential impacts of each type of eligible subproject activity under the project. They are marked as relevant for the planning phase, the implementation phase, or the post-implementation phase of activities. They are intended to be simple risk mitigation and management measures, readily usable to the implementing agencies and contractors. They are to be read in conjunction with the mitigation measures provided in Chapter 4.

The ESCOP in this section are divided into:

a. General ESCOP applicable to all subprojects

b. Additional ESCOP specific for GovtTech subprojects

c. Additional ESCOPs specific for DoFPS subprojects

General ESCOPs Applicable to All Subprojects

Issue	Environmental Prevention/Mitigation Measures
1. Noise during construction	a) Plan activities in consultation with communities so that the noisiest activities are undertaken during periods that will result in the least disturbance. (Planning phase) b) Use when needed and feasible noise-control methods such as fences, barriers or deflectors (such as muffling devices for combustion engines or planting of fast-growing trees). (Implementation phase) c) Minimize project transportation through community areas. Maintain a buffer zone (such as open spaces, rows of trees or vegetated areas) between the project site and residential areas to lessen the impact of noise on the living quarters. (Implementation phase)
2. Soil erosion	a) Schedule construction during the dry season. (Planning phase) b) Contour and minimize the length and steepness of slopes. (Implementation phase) c) Use mulch, grasses or compacted soil to stabilize exposed areas. (Implementation phase) d) Cover with topsoil and re-vegetate (plant grass, fast-growing plants/bushes/trees) construction areas quickly once work is completed. (Post-Implementation phase) e) Design channels and ditches for post-construction flows and line steep channels/slopes (e.g., with palm frowns, jute mats, etc.). (Post-Implementation phase)
3. Air quality	a) Minimize dust from exposed work sites by applying water on the ground regularly during dry season. (Implementation phase) b) Avoid burn site clearance debris (trees, undergrowth) or construction waste materials. (Implementation phase) c) Keep stockpile of aggregate materials covered to avoid suspension or dispersal of fine soil particles during windy days or disturbance from stray animals. . (Implementation phase) d) Reduce the operation hours of generators /machines /equipment /vehicles. (Implementation phase) e) Control vehicle speed when driving through community areas is unavoidable so that dust dispersion from vehicle transport is minimized. (Implementation phase)
4. Water quality and availability	a) Activities should not affect the availability of water for drinking and hygienic purposes. (Implementation phase) b) No soiled materials, solid wastes, toxic or hazardous materials should be stored in, poured into or thrown into water bodies for dilution or disposal. (Implementation phase)

Issue	Environmental Prevention/Mitigation Measures
	c) Avoid the use of wastewater pools, particularly without impermeable liners. d) Provision of toilets with temporary septic tank. (Implementation phase) e) The flow of natural waters should not be obstructed or diverted to another direction, which may lead to drying up of river beds or flooding of settlements. (Implementation phase) f) Separate concrete works in waterways and keep concrete mixing separate from drainage leading to waterways. (Implementation phase)
5. Solid and hazardous waste	a) Segregate construction waste as recyclable, hazardous and non-hazardous waste. (Implementation phase) b) Collect, store and transport construction waste to appropriately designated/ controlled dump sites. (Implementation phase) c) On-site storage of wastes prior to final disposal (including earth dug for foundations) should be at least 300 metres from rivers, streams, lakes and wetlands. (Implementation phase) d) Use secured area for refuelling and transfer of other toxic fluids distant from settlement area (and at least 50 metres from drainage structures and 100 metres from important water bodies); ideally on a hard/non-porous surface. (Implementation phase) e) Train workers on correct transfer and handling of fuels and other substances and require the use of gloves, boots, aprons, eyewear and other protective equipment for protection in handling highly hazardous materials. (Implementation phase) f) Collect and properly dispose of small amount of maintenance materials such as oily rags, oil filters, used oil, etc. Never dispose spent oils on the ground and in water courses as it can contaminate soil and groundwater (including drinking water aquifer). (Implementation phase) g) After each construction site is decommissioned, all debris and waste shall be cleared. (Post-Implementation phase)
6. Health and Safety	a) When planning activities of each subproject, discuss steps to avoid people getting hurt. (Planning phase) It is useful to consider: • Construction place: Are there any hazards that could be removed or should warn people about? • The people who will be taking part in construction: Do the participants have adequate skill and physical fitness to perform their works safely? • The equipment: Are there checks you could do to make sure that the equipment is in good working order? Do people need any particular skills or knowledge to enable them to use it safely? • Electricity Safety: Do any electricity good practices such as use of safe extension cords, voltage regulators and circuit breakers, labels on electrical wiring for safety measure, aware on identifying burning smell from wires, etc. apply at site? Is the worksite stocked with voltage detectors, clamp meters and receptacle testers? b) Mandate the use of personal protective equipment for workers as necessary (gloves, dust masks, hard hats, boots, goggles). (Implementation phase) c) Follow the below measures for construction involve work at height (e.g. 2 meters above ground (Implementation phase): • Do as much work as possible from the ground.

Issue	Environmental Prevention/Mitigation Measures
	• Do not allow people with the following personal risks to perform work at height tasks: eyesight/balance problem; certain chronic diseases – such as osteoporosis, diabetes, arthritis or Parkinson's disease; certain medications – sleeping pills, tranquillisers, blood pressure medication or antidepressants; recent history of falls – having had a fall within the last 12 months, etc. • Only allow people with sufficient skills, knowledge and experience to perform the task. • Check that the place (eg a roof) where work at height is to be undertaken is safe. • Take precautions when working on or near fragile surfaces. • Clean up oil, grease, paint, and dirt immediately to prevent slipping; and • Provide fall protection measures e.g. safety hardness, simple scaffolding/guard rail for works over 4 meters from ground. d) Keep worksite clean and free of debris on daily basis. (Implementation phase) e) Provision of first aid kit with bandages, antibiotic cream, etc. or health care facilities and enough drinking water. (Implementation phase) f) Keep corrosive fluids and other toxic materials in properly sealed containers for collection and disposal in properly secured areas. (Implementation phase) g) Ensure adequate toilet facilities for workers from outside of the community. (Implementation phase) h) Rope off construction area and secure materials stockpiles/ storage areas from the public and display warning signs including at unsafe locations. Do not allow children to play in construction areas. (Implementation phase) i) Ensure structural openings are covered/protected adequately. (Implementation phase) j) Secure loose or light material that is stored on roofs or open floors. (Implementation phase) k) Keep hoses, power cords, welding leads, etc. from laying in heavily traveled walkways or areas. (Implementation phase) l) If school children are in the vicinity, include traffic safety personnel to direct traffic during school hours, if needed. (Implementation phase) m) Control driving speed of vehicles particularly when passing through community or nearby school, health center or other sensitive areas. (Implementation phase) n) During heavy rains or emergencies of any kind, suspend all work. (Implementation phase) o) Fill in all earth borrow-pits once construction is completed to avoid standing water, water-borne diseases and possible drowning. (Post-Implementation phase)

Additional ESCOPs Specific to GovTech Works

Issue	Environmental Prevention/Mitigation Measures
Electronic Waste	Procurement Guidelines: • Include take-back clauses or recycling requirements in supplier contracts. E-Waste Handling and Disposal: • Establish designated collection points for electronic waste in all government offices under the project. • Ensure secure data destruction before disposal of IT equipment. • Recycle or refurbish usable equipment through licensed e-waste recyclers. • Ban open burning and informal dumping of e-waste. Worker Safety and Training: • Provide training to IT staff on safe handling, dismantling, and recycling of e-waste. • Ensure protective gear (gloves, masks, eyewear) is used by workers handling e-waste.
Energy-Efficiency	Procurement Guidelines: • Include energy efficiency criteria (e.g., EnergyStar , EPEAT certification) in hardware procurement to reduce power consumption. • cooling equipment must have environmentally friendly alternatives such as hydrofluorocarbons (HFCs), isobutane, and propane (R-290).
Data Privacy and Protection	Legal and Institutional Framework: • Ensure all data management policies comply with Bhutan's Cybersecurity Regulations. • Establish government-wide data protection standards aligned with international best practices (e.g., GDPR, ISO 27001). Technical Safeguards: • Implement end-to-end encryption for trade data transactions. • Use multi-factor authentication (MFA) for all digital trade platforms. • Ensure regular data backups and secure cloud storage for NSW and digital platforms. Capacity Building and Awareness: • Train all government agencies and trade users on data protection protocols. • Monitoring of data protection protocals to oversee compliance and respond to breaches.
Cyber Security and Data Protection	Cybersecurity Infrastructure and Governance: • Develop and establish a system to detect and respond to threats, and immediate containment of security breaches. System Security and Risk Mitigation: • Implement firewalls, intrusion detection systems (IDS), and anti-malware software on all servers. • Conduct regular cybersecurity audits and vulnerability assessments. • Ensure all government systems apply timely software updates and security patches. Training and Awareness: • Train government IT staff and digital trade users on best practices for cybersecurity.

Issue	Environmental Prevention/Mitigation Measures
Energy Efficiency of hardware	Energy-Efficient Procurement Standards: • Only procure ENERGY STAR-certified servers, computers, and network hardware. • Require automatic power-saving features for all IT hardware. Data Center Energy Management: • Implement liquid cooling or natural ventilation systems to reduce energy consumption. • Conduct periodic energy audits to track efficiency improvements. Lifecycle Management and Recycling: • Extend hardware lifespan through refurbishment and reallocation. • Ensure eco-friendly disposal and recycling of IT hardware under the E-Waste Management ECOP.

Additional ESCOPs Specific to DoFPS Works

Issue	Potential Environmental and Social Impacts	Mitigation Measures
Invasive Species Management *(Applies to vegetation clearing, habitat enrichment programs, and infrastructure development near ecologically sensitive areas.)*	- Uncontrolled growth of Invasive Alien Species (IAS), affecting native biodiversity and soil quality. - Spread of IAS through construction activities, equipment movement, and material transportation. - Degradation of reforested areas due to IAS re-invasion.	- Conduct manual and mechanical removal of IAS before construction or habitat enrichment. - Apply biological control methods instead of chemical herbicides when feasible. - Ensure thorough cleaning of all machinery before transportation to prevent unintentional seed dispersal. - Require suppliers to certify that transported materials are IAS-free. - Establish long-term monitoring programs to track IAS spread and implement additional removal if needed.
Forest Fire *(Applies to road construction near forested areas, protected area management, and habitat enrichment programs.)*	- Increased risk of forest fires due to human activities (e.g., equipment use, waste burning). - Potential spread of wildfires to human settlements and agricultural lands.	- Establish firebreaks around construction sites and settlements. - Prohibit open burning of vegetation and waste. - Equip construction workers with fire extinguishers and fire-resistant gear. - Train Quick Response Teams (QRTs) to detect and contain forest fires. - Develop a community-based early warning system for wildfire detection.

Issue	Potential Environmental and Social Impacts	Mitigation Measures
		- Conduct fire prevention awareness campaigns for local communities.
Rehabilitation of Waterholes *(Applies to habitat enrichment activities and biodiversity conservation efforts in protected areas.)*	- Disturbance to wildlife due to human intervention during waterhole rehabilitation. - Depletion of water sources if not managed properly.	- Maintain natural hydrological patterns when restoring waterholes. - Ensure waterholes are located away from human settlements to reduce wildlife conflict. - Schedule waterhole rehabilitation during non-breeding seasons. - Use low-noise and non-intrusive techniques during excavation and construction. - Track wildlife utilization of rehabilitated waterholes using camera traps and visual surveys.
Vegetation Clearing	- Loss of native vegetation and habitat. - Disruption to breeding seasons of birds and mammals. - Soil erosion and sedimentation into nearby water bodies.	- Avoid vegetation removal during bird breeding season (March to May). - Clearly mark areas for clearing to avoid unnecessary disturbance. - Conduct scaring campaigns (noise or vibrations) before clearing to allow fauna to relocate. - Use centrifugal clearing methods to avoid creating isolated habitat patches. - Stabilize cleared areas with native grass and plant species.
Wildlife Shepherding Protocol *(Applies to construction activities near wildlife corridors and elephant movement zones.)*	- Displacement of wildlife due to habitat fragmentation. - Increased vehicle-wildlife collisions.	- Install temporary drift fences to direct wildlife away from construction zones. - Implement systematic walking and noise disturbance methods to encourage animals to move toward refuge areas. - Use passive shepherding approaches for highly mobile species (e.g., loud human noises to encourage movement). - Conduct tree inspections for arboreal species (e.g., monkeys, birds) before clearing. - Avoid tree felling during prime breeding seasons for birds and bats.
Supporting Quick Response Teams (QRTs) for Human-Wildlife Conflict Management *(Applies to human-wildlife conflict*	- Increased human-elephant conflict (HEC) due to habitat disturbances.	- Provide vehicles, night-vision equipment, and communication tools for patrol teams. - Collaborate with policeband judicial

Issue	Potential Environmental and Social Impacts	Mitigation Measures
hotspots and project construction near elephant movement corridors.)	- Poaching risks due to an influx of construction workers.	services for wildlife protection enforcement. - Establish an anonymous wildlife crime reporting mechanism. - Provide community training on safe practices to prevent wildlife encounters. - Install fencing around high-risk HEC zones. - Explore insurance or compensation mechanisms for crop damage caused by wildlife.

Annex 3: ESMP Template

Environmental and social risks and impacts are strongly linked to subproject location and scope of activities. This ESMP should be customized for each specific subproject location and activities.

1. Subproject Information

Subproject Title:	
Estimated Cost:	
Start/Completion Date:	

2. Site/Location Description

This section concisely describes the proposed location and its geographic, ecological, social and temporal context including any offsite investments that may be required (e.g., access roads, water supply, etc.). Please attach a map of the location to the ESMP.

3. Subproject Description and Activities

This section lists all the activities that will take place under the subproject, including any associated activities (such as building of access roads or transmission lines, or communication campaigns that accompany service provision).

4. ESMP Matrix: Risk and Impacts, Mitigation, Monitoring

This section should identify anticipated site-specific adverse environmental and social risks and impacts; describe mitigation measures to address these risks and impact; and list the monitoring measures necessary to ensure effective implementation of the mitigation measures. It may draw from the ESMF's pre-identification of potential risks/impacts and mitigation measures, as applicable, and drill down further to ensure relevance and comprehensiveness at the site-specific level. For subprojects involving construction, two sets of tables may be needed, for the construction phase and the operation phase.

Anticipated E&S Risks and Impacts	Risk Mitigation and Management Measures	Impact Mitigation		Impact/Mitigation Monitoring		
		Location/Timing/Frequency	Responsibility	Parameter to be monitored	Methodology, including Location and Frequency	Responsibility

5. Capacity Development & Training

Based on the implementation arrangements and responsible parties proposed above, this section outlines any capacity building, training or new staffing that may be necessary for effective implementation.

6. Implementation Schedule and Cost Estimates

This section states the implementation timeline for the mitigation measures and capacity development measures described above, as well as a cost estimate for the implementation. The cost estimate can focus on the line items that will be covered by the project implementing agency, with costs of mitigation measures to be implemented by the contractor left to the contractor to calculate.

7. Attachments

ESCOPs, site specific SEP etc.

IV. Review & Approval

Prepared By: ……(Signature) Position: …… Date ……	
Reviewed By: ……(Signature) Position: ……Date ……	**Approved By**: ……(Signature) Position: …… Date ……

Annex 4: Labour Management Procedures

In accordance with the requirements of World Bank's Environmental and Social Standard 2 (ESS2) on Labor and Working Conditions, a simplified LMP have been developed for the project. The LMP sets out the ways in which the implementing agencies will manage all project workers in relation to the associated risks and impacts. The objectives of the LMP are to: Identify the different types of project workers that are likely to be involved in the project; identify, analyze and evaluate the labor-related risks and impacts for project activities; provide procedures to meet the requirements of ESS 2 on Labor and Working Conditions, ESS 4 on Community Health and Safety, and applicable national legislation.

The Labor Management Procedures apply to all project workers, irrespective of contracts being full-time, part-time, temporary or casual. The types of workers that will be included in the project are listed below:

- **Direct workers** – Government staff from MoIT, GovTech, DoFPS, and DoST assigned to manage and oversee the project, and individual consultants engaged in the PMUs/PIU..
- **Contracted workers** – Staff of consulting firms engaged by the Project and Laborers and technicians hired by contractors and subcontractors.
- **Primary supply workers** – Workers engaged in the supply of fencing and construction materials, IT hardware, networking equipment, and data storage facilities .

Labor Risks

The following potential labor risks are identified under the project:

- Violation of worker's rights: Terms and conditions of employment of workers may not be consistent with national legislation or World Bank standards
- Violation of worker's rights: Non-discrimination and equal opportunity of workers may not be consistent with national legislation or World Bank standards
- Use of child labor or forced labor
- Unsafe work environment and poor working conditions
- Workplace injuries and accidents, particularly when operating construction equipment, when working at height on building construction, and when handling heavy equipment and materials
- Risks from exposure to hazardous substances (dust, cement, chemicals used in construction etc.)
- Sexual exploitation and abuse/sexual harassment (SEA/SH) risks for workers
- SEA/SH risks for community members, from workers from outside the project areas
- Conflicts between workers and communities

Relevant National Labor Legislation

The following are relevant national labour legislation:

- Labor and Employment Act of Bhutan (2007) – Governs employment contracts, wages, dispute resolution, and working conditions.
- Regulation on Occupational Health, Safety, and Welfare (2022) – Establishes workplace safety and health requirements.
- Regulation on Foreign Workers Management (2022) – Governs employment conditions for migrant laborers.
- The Penal Code of Bhutan (2021) – Prohibits forced labor, child labor, and workplace harassment.
- Waste Prevention and Management Act (2009) – Addresses worker safety in waste handling and disposal.

- Employment Policies and Workers' Compensation Laws – Ensures compensation for workplace injuries and workers' rights protections.

General Applicable Procedures

The PMUs/PIUs and contractors will apply the following guidelines when dealing with workers:

- There will be no discrimination with respect to any aspects of the employment relationship, such as: Recruitment and hiring; compensation (including wages and benefits; working conditions and terms of employment; access to training; job assignment; promotion; termination of employment or retirement; or disciplinary practices.
- Harassment, intimidation and/or exploitation will be prevented or addressed appropriately.
- Special measures of protection and assistance to remedy discrimination or selection for a particular job will not be deemed as discrimination.
- Vulnerable project workers will be provided with special protection.
- The PMUs/PIUs and contractors will provide job / employment contracts with clear terms and conditions including rights related to hours of work, wages, overtime, compensation and benefits, annual holiday and sick leave, maternity leave and family leave. Code of Conduct included in this LMP will be applicable for all project workers.
- The PMUs/PIUs will ensure compliance with the Code of Conduct including providing briefings/awareness raising on the Code.
- The PMUs/PIUs and retained contractors will ensure no person under the age of 18 shall be employed. Age verification of all workers will be conducted by the contractors.
- The PMUs/PIUs will recruit contractors and labor locally to the extent that they are available.
- Workers shall be recruited voluntarily, and no worker is forced or coerced into work.
- The PMUs/PIUs will supervise and monitor to ensure compliance with the above requirements.
- All workers will be made aware of the Worker's Grievance Mechanism (see below) to raise work related grievances, including any sensitive and serious grievances on SEA/SH.

Occupational Health and Safety (OHS) Procedures

The objective of the procedure is to achieve and maintain a healthy and safe work environment for all project workers (contracted workers and community workers) and the host community.

- On procurement for contractors, The PMUs/PIUs will avail the ESMF to the aspiring contractors so that contractors include the budgetary requirements for OHS measures in their respective bids.
- The contractor will develop and maintain an OHS management system that is consistent with the scope of work, which must include measures and procedures to address all the following topics listed below and in accordance with local legislation and GIIP (as defined by World Bank Group EHSGs). The management system must be consistent with the duration of contract and this LMP.
- Contractor will conduct workplace hazards identification and adopt all applicable E&S risk mitigation measures in accordance with local legislation requirements and WBG EHSGs.
- Contractor designates a responsible person to oversee OHS related issues at the project site and define OHS roles and responsibilities for task leaders and contract managers.
- Contractor should put in place processes for workers to report work situations that they believe are not safe or healthy, and to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health, without fear of retaliation.

- Contractor provides preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances informed by assessment and plan. Whenever PPEs are required for the work, it must be provided at no cost for the workers.
- Contractors provides facilities appropriate to the circumstances of the work, including access to canteens, hygiene facilities, and appropriate areas for rest. Where accommodation services are provided to project workers, policies will be put in place and implemented on the management and quality of accommodation to protect and promote the health, safety, and well-being of the project workers, and to provide access to or provision of services that accommodate their physical, social and cultural needs.
- Contractor provides for appropriate training/induction of project workers and maintenance of training records on OHS subjects.
- Contractor documents and reports on occupational incidents, diseases and incidents as per ESMF guidance.
- Contractor provides emergency prevention and preparedness and response arrangements to emergency situations including and not limited to workplace accidents, workplace illnesses, flooding, fire outbreak, disease outbreak, labor unrest and security.
- Contractor provides remedies for adverse impacts such as occupational injuries, deaths, disability and disease in accordance with local regulatory requirements and Good International Industry Practices.
- Contractor shall maintain all such record for activities related to the safety health and environmental management for inspection by The PMUs/PIUs or the World Bank.

Contractor Management Procedures

The objective of this procedure is to ensure that The PMUs/PIUs has contractual power to administer oversight and action against contractors for non-compliance with the LMP.

- The PMUs/PIUs will make available relevant documentation to inform the contractor about requirements for effective implementation of the LMP.
- The PMUs/PIUs will include the provisions of the ESMF, LMP and other relevant documents into the specification section of the bidding documents. The contractors will be required to comply with these specifications.
- Contractor will raise worker awareness on the Code and Conduct.
- Contractor will show evidence of OHS and Emergency Preparedness procedures.
- The PMUs/PIUs will monitor contract's E&S performance during its regular site visits utilizing contactor reporting or external monitoring/supervision consultants where available. Where appropriate, The PMUs/PIUs may withhold contractor's payment or apply other contractual remedies as appropriate until corrective action(s) is/are implemented on significant non-compliance with the LMP, such as failure to notify [implementing agency] of incidents and accidents.

Procedures for Primary Suppliers

The objective of the procedure is to ensure that labor-related risks, especially child and forced labor as well as serious safety issues to the project from primary supply workers are managed. The PMUs/PIUs and all contractors will undertake the following measures:

- Procure supplies from legally constituted suppliers.

- To the extent feasible, conduct due diligence to ensure that primary suppliers conduct age verifications, employ workers without any force or coercion, and maintain basic OHS systems

Worker Accommodation

If accommodations are provided for workers, contractors will ensure that they are provided in good hygiene standards, with fresh drinking water, clean beds, restrooms and showers, clean bedrooms, good illumination, lockers, proper ventilation, safe electrical installation, fire and lightening protection, separate cooking and eating areas. There will be separate facilities provided for men and women. The contractors will be liable to comply with "Workers' Accommodation: Processes and Standards: A guidance Note" by IFC and the EBRD.

Institutional Arrangement for Implementation of the LMP

The PMU/PIU will carry the main responsibility for the implementation and monitoring of the LMP. The E&S staff of the PMU/PIU will identify subproject activities, prepare subproject designs and bidding documents, as well as procure contractors. E&S staff of the PMU/PIU will be responsible for contractor and site supervision, technical quality assurance, certification, and payment of works. E&S staff of the PMU/PIU will ensure that labor management procedures are integrated into the specification section of the bidding documents and the procurement contracts.

Grievance Mechanism

There will be a specific Workers Grievance Mechanism (Worker GM) for project workers as per the process outlined below. This considers culturally appropriate ways of handling the concerns of direct and contracted workers. Processes for documenting complaints and concerns have been specified, including time commitments to resolve issues. Workers will be informed about the relevant Worker GM upon their recruitment and their right to redress, confidentiality and protection against any reprisals from the employer will be stated in the contract.

Routine Grievances

The process for the Worker GM is as follows:

- Any worker may report their grievance in person, by phone, text message, mail or email (including anonymously if required) to the contractor as the initial focal point for information and raising grievances. For complaints that were satisfactorily resolved by the aggrieved worker or contractor within one week of receipt of complaint, the incident and resultant resolution will be logged and reported monthly to the E&S staff of the PMU/PIU.
- If the grievance is not resolved within one week, the contractor (or the complainant directly) will refer the issue to the E&S staff of the PMU/PIU . The E&S staff of the PMU/PIU will work to address and resolve the complaint and inform the worker as promptly as possible, in particular if the complaint is related to something urgent that may cause harm or exposure to the person, such as lack of PPE needed to work safely. For non-urgent complaints, E&S staff of the PMU/PIU will aim to resolve complaints withing 2 weeks. For complaints that were satisfactorily resolved by the E&S staff of the PMU/PIU, the incident and resultant resolution will be logged and reported monthly as part of regular reporting. Where the complaint has not been resolved, the E&S staff of the PMU/PIU will refer to Project Director at the PMU/PIU for further action or resolution.

The workers will preserve all rights to refer matters to relevant judicial proceedings as provided under national labor law.

Each grievance record should be allocated a unique number reflecting year, sequence and township of received complaint. Complaint records (letter, email, record of conversation) should be stored together, electronically or in hard copy. The PMU/PIU will appoint a Worker GM Focal Person, who will be responsible for undertaking a monthly review of all grievances to analyze and respond to any common issues arising. The Focal Person will also be responsible for oversight, monitoring and reporting on the Worker GM.

Serious Grievances

In case a worker experiences serious mistreatment such as harassment, intimidation, abuse, violence, discrimination or injustice at the workplace, the worker may raise the case, verbally or in writing directly to the contractor or PMU/PIU. The contractor will immediately refer the case to PMU/PIU. The PMU/PIU will immediately investigate the case respecting confidentiality and anonymity of the worker.

Upon project effectiveness, the PMU/PIU will designate a Focal Person or Persons for Serious Grievances. These Focal Persons will receive training in investigating serious grievances, relevant laws and regulations, and World Bank standards including the rights of people who file a grievance. The PMU/PIU and the World Bank will jointly develop culturally-sensitive and locally-appropriate roles and responsibilities, and procedures.

In case a direct worker or civil servant has a serious grievance, the staff may directly contact verbally or in writing the Focal Person for Serious Grievances.

All complaints received will be filed and kept confidential. For statistical purposes, cases will be anonymized and bundled to avoid identification of persons involved.

Code of Conduct

All Project workers must adhere to a code of conduct that:

- Treat women, children (persons under the age of 18), and men with respect regardless of ethnicity, language, religion, political or other opinion, national, social origin, citizenship status, property, disability, birth or other status.
- Do not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Do not participate in sexual activity with community members.
- Do not engage in sexual favors or other forms of humiliating, degrading or exploitative behavior.
- Do not engage in any activity that will constitute payment for sex with members of the communities surrounding the workplace.
- Report through the Worker GM suspected or actual gender-based violence against a person of any gender by a fellow worker or any breaches of this Code of Conduct.
- Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass women, children or a vulnerable person through these mediums.
- Comply with all relevant local legislation.
- Engaging in any of the prohibited activities above can be cause for termination of employment, criminal liability, and/or other sanctions.

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Annex 5: Chance Find Procedures

Cultural heritage encompasses tangible and intangible heritage which may be recognized and valued at a local, regional, national or global level. Tangible cultural heritage, which includes movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Tangible cultural heritage may be located in urban or rural settings, and may be above or below land or under the water. Intangible cultural heritage, which includes practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artefacts and cultural spaces associated therewith— that communities and groups recognize as part of their cultural heritage, as transmitted from generation to generation and constantly recreated by them in response to their environment, their interaction with nature and their history.

In the event that during construction, sites, resources or artifacts of cultural value are found, the following procedures for identification, protection from theft, and treatment of discovered artefacts should be followed and included in standard bidding documents. These procedures take into account requirements related to Chance Finding under national legislation including the Moveable Cultural Property Act of Bhutan (2005) and the Cultural Heritage Bill (Draft, 2016).

Implement the following procedures in case of chance finds of any physical cultural resources (PCR).

Upon Discovery:

- Immediate Halt: Construction activities must cease immediately near the discovered PCR to prevent any potential damage.
- Secure the Area: The site supervisor or engineer should secure the area to prevent access and potential looting or damage to the PCR.
- Notification: The site engineer or representative should promptly notify the Department of Culture and Dzongkha Development (DoCDD) about the discovery.
- Documentation: Document the find with photographs and, if possible, mark the exact GPS coordinates for the record.

Assessment:

- Initial Assessment: The site supervisor should make a preliminary assessment to determine if the find appears to be of potential significance.
- Expert Evaluation: If deemed potentially significant, an expert from the DoCDD or a designated cultural heritage specialist should be invited to conduct a thorough evaluation.
- Action Plan: Based on the expert's assessment, decide whether to adjust project plans to accommodate the preservation of the PCR or to proceed with an approved mitigation strategy, such as careful excavation or reburial.

Reporting

- Chance Find Report: Prepare a detailed report outlining the nature of the find, the actions taken upon discovery, and the outcomes of the expert assessment. This report should include photographs, GPS coordinates, and other relevant documentation.
- Submission: Submit the Chance Find Report to the PIU, who will forward it to the DoCDD for official records.

- Inclusion in Monitoring Reports: Include a summary of the chance find and the subsequent actions taken in the quarterly environmental monitoring reports submitted to oversight bodies, such as the World Bank or other funding agencies.
- Workers Training. Contractors are mandated to train workers, particularly those involved in excavation, to recognize potential artifacts. The training, supported technically by the DoCDD and other relevant authorities, will inform workers about the importance of such findings and the required steps to take if they are encountered

Annex 6: Procedures for Temporary Land Disturbances and Compensation

The Project does not involve permanent land acquisition; however, under the last-mile connectivity initiative, there may be installation of cables along existing road rights-of-way to enhance digital connectivity. While most of these activities will be confined to publicly owned land, some temporary disturbances to adjacent private lands (such as crop clearance, soil excavation, or restricted land access) may occur. In such cases, compensation for losses will be required in accordance with Bhutan's legal framework and World Bank's Environmental and Social Standard 5 (ESS5).

Although specific provisions for temporary disturbances remain limited, the following legislations provide some guidance on compensation

- Bhutan's Land Act 2007 (Chapter 12 on Easements) allows authorized entities to access private land for service utilities (e.g., cables, pipelines) after reasonable notice to the landowner. Compensation for damages is required, but the method for calculation is not explicitly defined.
- Land Acquisition and Compensation Rules and Regulations (LACRR 2022) do not explicitly cover temporary land-use restrictions, but compensation for crop damage and land-use disruptions follows valuation by the Property Assessment and Valuation Agency (PAVA).

Key Principles for Managing Temporary Land Disturbance

1. **Avoidance and Minimization:** Prioritize using public land, existing utility corridors, and road shoulders to minimize impacts on private property.
2. **Compensation for Temporary Impacts:** Affected landowners must receive fair compensation for any loss of land use or damage to property during the cable-laying process.
3. **Consultation and Notification**: Engage local authorities, affected landowners, and communities in planning and implementation.
4. **Restoration of Land and Property**: Any disturbed land must be restored to its original condition or better post-installation.
5. **Grievance Redress Mechanism (GRM):** Provide a mechanism for landowners to report issues and seek redress.

Step-by-Step Procedure

A step-by-step process to be followed as per national regulations is given below:

- **Pre-Construction Phase**
- Step 1: Initial Planning and Site Identification
    - Conduct desktop surveys to identify cable-laying routes that avoid private land.
    - If unavoidable, identify potentially affected landowners and document temporary land-use needs.
    - Develop an Environmental and Social Screening Report to classify risks.
- Step 2: Consultation and Consent Process
    - Notify affected landowners at least 30-60 days before construction begins.
    - Hold public consultations with community members, local leaders, and Dzongkhag/Thromde officials.
    - Provide written notices explaining:

        - The nature and duration of the disturbance.
        - Any compensation provisions (if applicable).
        - Restoration commitments post-installation.
        - Contact details for grievance redress.
        - Obtain written consent from affected landowners.
- Step 3: Compensation and Temporary Land Use Agreements
    - Prepare a Temporary Land Use Agreement (TLUA) for landowners.
    - Compensation for temporary land use must be at replacement cost, considering:
    - Market value of lost land use.
    - Compensation for any damaged assets (fences, crops, trees).
    - Livelihood restoration assistance, if applicable.
- **Construction Phase**
- Step 4: Implementation of Mitigation Measures
    - Mark the affected areas to prevent unnecessary land damage.
    - Use protective barriers and safety measures to minimize impact.
    - Implement traffic management plans to reduce disruptions.
- Step 5: Supervision and Monitoring
    - Assign Environmental and Social Staff to monitor activities.
    - Conduct weekly inspections to ensure contractors adhere to safeguards.
    - Provide landowners with regular updates on work progress and expected completion.
- **Post-Construction Phase**
- Step 6: Land Restoration and Verification
    - Remove construction debris and restore land to its original condition.
    - Conduct a joint site inspection with:
    - Landowners.
    - Local government officials.
    - Project environmental and social team.
    - Obtain a Completion and Satisfaction Certificate (CSC) from affected landowners.
- Step 7: Compensation Finalization and Reporting
    - Ensure final payments for temporary land use and any damages are processed promptly.
    - Submit a resettlement compliance report to relevant authorities and the World Bank.

Grievance Redress Mechanism (GRM)

The GRM process, as outlined in the SEP, will be communicated to the affected community. The project will offer the necessary support to facilitate their access to this process.