



**Nepal: Third Bridges Improvement and Maintenance Program
(BIMP III)
(P507516)**

Program for Results (PforR)

**Final Report on
Environmental and Social Systems Assessment (ESSA)**

March 2025

Acronyms

AAPA	Aquatic Animal Protection Act
AMPA	Ancient Monument Preservation Act
BMS	Bridge Management System
BES	Brief Environmental Study
BoQ	Bill of Quantities
BSMS	Bridge Site Monitoring System
CDO	Chief of District Administration Office
CE	Citizen Engagement
CEDAW	Convention on Elimination of All Forms of Discrimination Against Women
CFC	Compensation Fixation Committee
CLA	Child Labor (Prohibition and Regulation) Act
COM	Communication and Outreach Mechanism
DAO	District Administration Office
DLI	Disbursement Linked Indicator
DLRO	District Land Revenue Office
DLSO	District Land Survey Office
DoEnv	Department of Environment
DoF	Department of Forest
DOR	Department of Roads
EA	Executing Agency
EIA	Environmental Impact Assessment
EPA	Environmental Protection Act, 2019
EPR	Environmental Protection Rules, 2020
ESMF	Environmental and Social Management Framework
ESSA	Environmental and Social Systems Assessment
FA	Forest Act 2019
FPIC	Free, Prior, Informed Consent
GEA	Gender Equality Act
GESI	Gender Equality and Social Inclusion
GESU	Geo-Environment and Social Unit
GGA	Good Governance (Management and Operation) Act 2017
GON	Government of Nepal
GRM	Grievance Redress Mechanism
IA	Implementing Agency
IPF	Investment Policy Financing
IPs	Indigenous Peoples
IPP	Indigenous Peoples Plan
IEE	Initial Environmental Examination
LARRP	Land Acquisition, Resettlement and Rehabilitation Policy, 2015
LAA	Land Acquisition Act 1977
LCF	Local Consultative Forum

MOPE	Ministry of Population and Environment
MOFSC	Ministry of Forest and Soil Conservation
MoPIT	Ministry of Physical Infrastructure and Transport
NFDIN	National Foundation for the Development of Indigenous Nationalities (Act) 2002
NPWLCA	National Parks and Wildlife Conservation Act
NPC	National Planning Commission
OHS	Occupational Health and Safety
PDO	Program Development Objective
PforR	Program for Results
PWD	Public Works Directive
PIP	Priority Investment Plan
RSDP	Road Sector Development Project
SEMP	Social and Environmental Management Plan
SIA	Social Impact Assessment
SRN	Strategic Road Network
VCDP	Vulnerable Community Development Plan
VDC	Village Development Committee
WIM	Workers' Influx Management

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Executive Summary

Background: The proposed Third Bridges Improvement and Maintenance Program (BIMP-III) is a hybrid operation combining Program-for-Results (PforR) and Investment Project Financing (IPF) components. The PforR aims to support Nepal's bridge program by introducing innovative solutions like drones and satellite imagery for asset monitoring and integrating multi-hazard analysis for resilience in the Bridge Management System (BMS). These innovations will enhance monitoring efficiency and risk mitigation, ultimately contributing to Nepal's broader development and prosperity. The complementary IPF component will provide technical support and strengthen institutional development for the program and for the Department of Roads (DoR).

Project Objectives and Description:

Program Development Objective (PDO): The PDO of the third BIMP is to improve the resilience, inclusiveness, and safety of bridge connectivity along Nepal's Strategic Road Network and enhance the institutional capacity of the Department of Roads.

PforR: The PforR component enhance the resilience, inclusiveness, and safety of bridge connectivity on Nepal's Strategic Road Network, and to strengthen the Department of Roads' institutional capacity. The PforR components includes: (i) major bridge maintenance incorporating resilience measures (ii) Bridge safety upgrades (iii) new 2-lane bridge construction incorporating resilience measures (iv) completion of existing backlog bridges and (v) Business process reform plan developed and implemented for institutional strengthening. Bridges that are excluded from PforR financing will not count toward verified achievement of Disbursement Linked Indicators.

Investment Policy Financing (IPF): The IPF component will support: The IPF component will support: (i) conducting technical audits and DLI verifications via a third party; (ii) procuring temporary bridges for restoring connectivity after natural disasters; (iii) updating bridge standards to address severe climate stresses; (iv) enhancing DoR staff's technical, social, environmental, and fiduciary skills; (v) supporting GESU in reviewing transport projects and promoting resilience in transport infrastructure; and (vi) upgrading and integrating BMS, BSMS, EIS, and RIDMS to include a climate and disaster resilience module for prioritizing bridge inspection, maintenance, and emergency response.

Objective and Scope of Environmental and Social Systems Assessment (ESSA): The Environmental and Social Systems Assessment (ESSA) was conducted per the World Bank's 2024

Directive on "Program-for-Results Financing." It evaluates the alignment of government environmental and social policies, legislation, procedures, and systems with six ESSA core principles and recommends actions to address any gaps. The ESSA aims to: (i) document the environmental and social management policies, legal framework, procedures, and institutional responsibilities of the Government of Nepal (GoN) for bridge programs; (ii) assess the capacity of implementing entities to manage environmental and social impacts and risks; and (iii) recommend a Program Action Plan (PAP) to address gaps and enhance capacity for Program implementation.

Methodology: The ESSA methodology focused on environmental and social management systems for bridges under the Department of Roads (DoR) funded by the PforR. The analysis included reviewing literature, legal frameworks, policies, and guidelines, assessing the institutional capacity of MoPIT and DoR, and integrating lessons from BIMP-I and II with SWOT analysis findings. It examined strengths and gaps in the bridge sector's systems to address environmental and social impacts, both in written regulations

and practical application, and assessed the implementation capacity based on past program performance. The methodology involved: (i) collecting baseline information, (ii) consultations, (iii) reviewing BIMP-I and II achievements, (iv) public disclosure, and (v) finalizing analysis and documentation to identify gaps and actions for improving the third BIMP's implementation performance.

Stakeholder Consultations and Disclosure: A stakeholder workshop for the ESSA was held on February 7, 2025, with participants from various organizations including the National Planning Commission, Ministry of Women, Children and Senior Citizens, Department of National Parks and Wildlife Conservation, Nepal Federation of Indigenous Nationalities, Geo-environmental and Social Unit, National Disabled Fund, the borrower, and the World Bank team. Key suggestions included:

- Prioritize sustainable bridge construction with high-quality materials.
- Incorporation of environmental and social mitigation costs in BoQ items is appreciable but simplify the approval process for these costs and utility relocation.
- Addressing gender-based violence, child labor, sexual exploitation, and abuse in BIMP-III is appreciated. Recommendation is to ensure bridges are accessible to children, the elderly, and individuals with disabilities. Provide walkable diversions during bridge construction.
- Ensure bridges are designed and constructed for resilience and suitability.
- Consider the Wildlife Friendly Infrastructure Construction Directive for bridges in wildlife habitats.
- Design bridges with input from persons with disabilities, following universal accessibility standards.
- Clearly define program and contract modalities, especially for Design and Build (DB) Contracts, and include clear BoQ items for E&S mitigation costs.
- Enhance GESU's institutional capacity and training for effective E&S oversight during bridge construction.
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Environmental and Social Systems Assessment

Environmental and Social risk Analysis of the program: The potential environmental and social impacts of the PforR component of BIMP III are substantial but similar to those of BIMP I and II. The anticipated adverse impacts are limited and not expected to pose significant risks. Potential impacts of new bridge construction include effects on vegetation at bridge abutments, aquatic ecology near bridge crossings, and issues from non-compliance with mitigation measures during construction, such as health and safety, sanitation, waste, and labor camps. Limited land acquisition and resettlement may also occur near bridge works. Adverse social impacts from bridge maintenance are likely temporary, such as land leasing for contractor operations. However, new bridge construction may require land acquisition, affect livelihoods, and impact communities due to improper worker influx management. These issues need attention during site selection, design, and implementation phases.

The bridge program aims to benefit many communities, especially in remote areas, but may also adversely impact nearby indigenous communities due to land acquisition, livelihood effects, public health and traffic safety concerns, and impacts on community facilities.

Program Exclusion: The program excludes high-risk sub project activities that could cause irreversible environmental or social harm. Sub-projects will be ineligible if they: (i) significantly convert or degrade critical habitats or cultural heritage sites; (ii) affect large areas, including transboundary or global impacts like GHG emissions; (iv) involve large-scale land acquisition and land use changes; or (v) affect designated

forests or key biodiversity areas. It is essential to ensure these activities are excluded from the Bank-financed program

Implementation experience of BIMP I and BIMP II: The first and second BIMPs successfully achieved their objectives and completed as planned by July 2017 and July 2024, respectively, with "Satisfactory" social and environmental ratings. Key improvements include: (i) issuance and enforcement of a bridge addendum to the DoR's ESMF; (ii) addition of Environmental and Social Officers and budget allocation to GESU; (iii) enhanced impact management for bridge projects; and (iv) development of OHS policies and guidelines, including SOPs for COVID-19 and safety plans for construction workers in national parks and buffer areas. An environmental and social screening system, management plans and integrating environmental and social mitigations in the engineering designs and bidding documents for supervision and monitoring were established. An IT-based GRM was also established and third-party compliance verification of the compliance with environmental and social requirements was practiced. However, BIMP-I and II faced delays in E&S studies approval, poor inter-departmental coordination for tree cutting and utility relocation, and GRM reporting issues at the latter stages of the project. Lessons learned include the need for dedicated funds for land acquisition, structure relocation, tree removal, and a dedicated GRM desk officer.

Assessment of legal and regulatory framework.

Environment: National environmental legislation and institutional structures for conservation, pollution management, and mitigating impacts on natural habitats, archaeological sites, and cultural resources are well established. The Ministry of Forests and Environment (MoFE) enforces the EPA, 2019, and EPR, 2020. The Department of Environment under MoFE oversees environmental standards, pollution monitoring, and ambient environment quality. The Environment and Biodiversity Division of MoFE approves EIAs for federal projects, while sectoral ministries and provincial governments handle IEEs and EIAs per their regulations. Implementing agencies, consultants, and contractors must have sufficient capacity to meet legal requirements. Key regulations include Environment Protection Act (EPA), 2076 BS (2019 AD), Environment Protection Rules (EPR), 2077 BS (2020 AD), National Environment Policy, 2076 BS (2019 AD), National Climate Change Policy, 2076 BS (2019 AD), Aquatic Animals Protection Act, 2017 BS (1960 AD), Solid Waste Management Act, 2068 BS (2011 AD), Solid Waste Management Rules, 2070 BS (2013 AD), National Parks and Wildlife Conservation Act, 2029 BS (1973 AD) and Amendment 2049 BS (1992 AD), Forest Act, 2076 BS (2019 AD), Forest Rules, 2079 BS (2020 AD), Water Resources Act, 2049 BS (1992 AD), Public Roads Act, 2031 BS (1974 AD), etc. While existing national and state specific regulatory framework on environmental aspects, forest, biodiversity, designated protected areas and pollution control acts & rules provide satisfactory provisions to manage the environmental impacts of the proposed program, the enforcement needs to be further strengthened. In addition to addressing gaps, this Program offers the opportunity to strengthen environmental performance by introducing the international best practices during the project preparation, and implementation stages.

Social: Some relevant social policies and legislation include: Land Acquisition Act (LAA), 1977, Policy on Land Acquisition, Resettlement, and Rehabilitation for Infrastructure Development Projects, 2071 BS (2015 AD), Lands Act, 2021 BS (1964 AD) and Amendment 2075 BS (2018 AD), Land Use Act, 2076 BS (2019 AD), Land Use Policy, 2072 BS (2015 AD), Caste-based Discrimination and Untouchability Act, 2011, Person with Disabilities Rights and Protection Act 2013, Sexual Harassment at the Workplace (Elimination) Act, 2015, National Employment Policy, 2014, labor Act, 2074 BS (2017 AD), labor Rules, 2075 BS (2018 AD), Child labor (Prohibition and Regulation) Act, 2056 BS (2000 AD), Child Labor (Prohibition & Regulation) Rules, 2062 BS (2006 AD), National Civil Code and Criminal Code (Muluki Debani Samhita, 2074 BS [2017 AD], Muluki Aparadh Samhita, 2074 BS

[2017 AD]), Contribution Based Social Security Regulation, 2075 BS (2018 AD), Human Trafficking (Control) Act, 2007, The Bonded Laborer (Prohibition) Act, 2002, Right to Information Act, 2064 BS (2007 AD), Local Government Operation Act, 2017, Hello Sarkar Grievance Management Guidelines, 2022, Ancient Monument Preservation Act, 2013 BS (1956 AD), Ancient Monuments Preservation Rules, 2046 BS (1989 AD) with amendments, National Foundation for Upliftment of Aadibasi/Janajati Act, 2058 BS (2002 AD). These laws and policies provide adequate measures to safeguard worker welfare, health, and safety. The absence of specific OHS legislation limits their effectiveness in practice. BIMPII bid documents mandate OHS and labor law compliance. While land acquisition laws have gaps, some laws and policies exist to protect marginalized communities and provide safety and legal support to women against gender-based violence and workplace exploitation. Their incorporation however in project E&S risk assessment and management is not mandated and only required by donor funded projects. Overall, the national regulatory systems on the environment align well with the Bank's Program, with no significant gaps. However, some gaps exist, particularly in managing social impacts, such as those affecting individuals without land titles and compensation for structures at replacement cost. To address these, the DoR has revised and issued an Environmental and Social Management Framework (ESMF) for its road operations, incorporating essential E&S elements from DPs, including WB and ADB under BIMP II. Endorsed at the ministry secretary level, this ESMF will guide the proposed Bridge Program (BIMP – III) in managing environmental and social issues per the Bank's Program-for-Results Financing principles for 2024. This represents a progressive step towards adopting these principles at the national policy level.

Assessment relative to the PforR core Principles

The following provides a summary of the Environmental and Social Systems Assessment (ESSA) findings in relation to the World Bank's 2024 Program-for-Results (PforR) Policy/Directive. This summary addresses the six principles concerning the assessment of the Borrower's environmental and social systems.

Core Principle #1: Environmental and Social System are designed to promote environmental and social sustainability in the PforR Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the PforR Program's environmental and social impacts.

The existing country system mandates different levels of environmental assessment for projects based on their nature, size, financial threshold, and site sensitivity to determine the type of assessment—Brief Environmental Study (BES), Initial Environmental Examination (IEE), or Environmental Impact Assessment (EIA)—as per EPA and EPR. While national regulations do not mandate E&S screening, the DoR's Environmental and Social Management Framework (ESMF) promotes it for road and bridge projects. The ESMF addresses environmental and social risks during all project phases and requires information disclosure and stakeholder consultations. Implementation and monitoring of mitigation measures are generally more effective in donor-supported activities than in government-funded ones.

Core Principle #2: Environmental and Social System are designed to avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the PforR Program.

Activities causing significant conversion or degradation of critical natural habitats or cultural heritage are ineligible for PforR financing. Nepal's Environmental Protection Act 2019 and Rules 2020 mandate ESIA, BES, and IEE for activities in cultural, historical, protected, and sensitive sites, requiring prior approval from competent authorities. Legal provisions necessitate alternative analysis to minimize forest area and resource loss. ESIA and prior approval are mandatory for bridges in protected areas, and bridges in cultural sites are generally avoided.

Core Principle #3: Environmental and Social System ensures adequate measures to protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the PforR Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the PforR Program; and (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.

The updated 2023 Environmental and Social Management Framework (ESMF) for the road sector includes provisions for Occupational Health and Safety (OHS), labor management, and child labor prevention. Relevant laws such as the Environmental Protection Act, labor Act, and Child Labor (Prohibition and Regulation) Act address worker and community health and safety risks. However, the absence of specific OHS legislation limits the effectiveness of these provisions. Experience from the road and bridge sector, including BIMP-I and II, indicates that implementation of these provisions varies with the extent of contract management for the client.

Core Principle #4: Environmental and Social System is to manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist the affected people in improving, or at the minimum restoring, their livelihoods and living standards

The Land Acquisition Act (LAA), Land Acquisition, Resettlement and Rehabilitation Policy (LARRP), Land Acquisition Rules (LAR), and DoR's ESMF outline procedures for land acquisition, resettlement, and rehabilitation. However, LAA does not cover people without land titles. DoR ESMF however covers non-title holders, emphasizing avoiding, minimizing and/ or mitigating the adverse impacts. The ESMF require that all those adversely affected, including non-title holders to land, particularly the poor and vulnerable households, will be recognized for assistance in their livelihood restoration and improvement. for livelihood restoration. In the case of land titleholders, the land acquisition provisions including compensations at market value are implemented. Implementation of the provisions related to the non-title holders varies these are better implemented in donor supported activities.

Core Principle #5: Environmental and Social System is to give due consideration to the cultural appropriateness of, and equitable access to, PforR Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.

The DoR ESMF provides circumstance for Free, Prior, and Informed consultations (FPIC) with indigenous people and vulnerable groups during environmental and social assessments. The program aims to enhance connectivity for remote, underdeveloped areas, benefiting indigenous and vulnerable communities. DoR integrates consultation outcomes into project designs and environmental and social management instruments. This process is more effectively implemented in projects funded by international organizations.

Core Principle #6: Environmental and Social System avoids exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

The predecessor programs, BIMP-I and II, were successfully implemented without social conflicts, adhering to standard provisions. The Good Governance Act (2008) of GoN ensures conflict management in community development initiatives, emphasizing pro-people, accountable, inclusive, and participatory administration. Citizen engagement through local forums and transparency are integral to the legislative provisions for BIMP-III. The implementing agency has an IT-based grievance redress mechanism, alongside local judiciary access for conflict management. Bridge projects aim to enhance community access and have multiple benefits, making social conflicts unlikely.

Findings and Recommendation of action plans to enhance E&S management capacity

The ESSA finds the environmental and social management systems of MoPIT and DOR suitable for BIMP-III. However, gaps exist in environmental management for internally funded bridge works compared to international standards. It is anticipated that most proposed bridges will fall under schedule 2 and not need a full-blown environmental impact assessment. Nevertheless, the ESSA identifies opportunities for enhancing institutional capacity, improving performance with inclusive and wildlife-friendly structures, enforcing ESHS contract conditions especially on labor and OHS issues, strengthening grievance systems, and addressing SEA/SH risks. The client is committed to implementing these recommendations.

Inputs to the Program Action Plan: The following table includes the ESSA inputs into the overall Program Action Plan:

SN	Action Description	Source	Timing	Completion Measurement
1	Amend DoR's Gender Equality and Social Inclusion (GESI) guideline to institutionalize childcare provisions and subsequently establish a Creche facility within DoR	Other	By end of project	DoR to report on the status of the subject action
2	Enhance E&S capacity of the PCU and PIUs by onboarding a robust team of specialists including an environmental specialist, social specialist, gender/GBV specialist, an OHS expert, and hiring and environment/OHS officer and social officer for the Federal Roads Supervision and Monitoring Offices.	E&S	3 months of effectiveness	DoR to report on the status of the subject action
3	prepare GESU business plan and dedicate budget for implementation	E&S	6 months of effectiveness	DoR to report on the status of the subject action
4	Implement the DoR's ESMF with enhanced provisions for Occupational and Community Health and Safety, labor camp management, citizen engagement, prevention of child labor, and prevention of Gender-Based Violence and Sexual Exploitation and Abuse.	E&S	3 months of effectiveness	DoR to report on the status of the subject action
5	Incorporate environmental and social management mitigation measures and costs in the BoQ and include relevant provisions in the contractors' and supervision consultants' contract conditions.	E&S	As part of the preparation of procurement documents and respective contracts.	DoR to report on the status of the subject action

6	Conduct annual independent third-party monitoring of E&S implementation performance.	E&S	After start of works	DoR to report on the status of the subject action
7	Strengthen and institutionalize the stakeholder consultation process. Mapping and engaging with key stakeholder to address potential E&S risks including human trafficking/SEA/SH risks under the Program	E&S	12 months of effectiveness	DoR to report on the status of the subject action
8	Establish a dedicated GRM desk with an officer to oversee tracking and follow-up for DoR's web-based GRM. Institutionalize this GRM for BIMP III and DoR, ensuring accessibility, confidentiality, and capability to handle SEA/SH complaints and refer survivors to relevant services.	E&S	6 months of effectiveness	DoR to report on the status of the subject action
9	Conduct beneficiary survey to assess the quality, resilience, and inclusiveness of the bridge works.	E&S	18 months of effectiveness	DoR to report on the status of the subject action
10	Conduct relevant E&S capacity building program (training, awareness, and education) for DoR staff, consultants, and subcontractors	E&S	6 months of effectiveness, continuously on a quarterly basis thereafter	DoR to report on the status of the subject action
11	Establishment a digital system for the Gate Review Mechanism, E&S reporting and OHS monitoring, including data collection of near miss and incident validation, and corrective actions	E&S	12 months of effectiveness, continuously thereafter	DoR to report on the status of the subject action
12	Facilitate interdepartmental coordination with MOFE and NEA and other relevant agencies for swift approval of E&S assessment reports, tree clearance, and utility relocations.	E&S	6 months of effectiveness.	DoR to report on the status of the subject action

IPF Activities on E&S Capacity strengthening

Item	Activity	IPF allocation (US\$ million)
IPF-3	Institutional dev. & strengthening, incl. policies & guidelines concerning resilience and wildlife friendly infra., training curriculum on OHS, SEA/SH and institutionalizing GRM	1.75
IPF-5	Support GESU, incl. business plan, ESMF update and digitizing Gate Review Mechanism	0.50

IPF-7	Consultancy support for implementation of the Program	4.00
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Relevant Disbursement Linked Indicator (DLI):

DLI-5: Business process reform plan developed and implemented for institutional strengthening	Incorporate resilience into standards and guidelines Update BMS and include a climate change module Update ESMF and prepare training for its rolling out Enhance GESU's mandate for E&S oversight
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Institutional Arrangement for BIMP III

For the third BIMP, the Ministry of Physical Infrastructure and Transport (MoPIT) serves as the Executing Agency, while the Department of Roads (DOR) implements the program through its regional and district offices. The Kathmandu-based Bridge Branch within DOR oversees the SRN Bridge Program, including BIMP-III activities. Regional Bridge Sector Offices and Regional Directorates handle new construction and major maintenance, while District-level Road Division Offices manage minor maintenance and new bridge construction. The Geo-Environment and Social Unit (GESU) coordinates environmental and social aspects. The Department of Environment (DoEnv) and the Department of Forest and Soil Conservation (DoFSC) under the Ministry of Forest and Environment (MoFE) are key agencies for BIMP's environmental and social management.

1. Introduction

1.1 Background

The cornerstone of Nepal's surface transportation network is the Strategic Roads Network (SRN) which consists of approximately 14,913 km of roads, connected by approx. 2135 bridges, amounting to approx. 96,287 meters in length. Bridges play a crucial role in Nepal's infrastructure, particularly in remote and isolated areas. The SRN carries the clear majority of passenger and goods transport throughout Nepal. It also provides critical connections to India which is Nepal's largest trading partner and primary conduit for third country trade. The geographical configuration of the SRN is significant. Nepal's busiest highway traverses east to west along the relatively flat "Tarai" districts and provides a transportation link that runs in parallel to Nepal's border with India. North-south feeder roads tee off from this backbone and provide access to the difficult topography of Nepal's hill and mountain districts. SRN roads and bridges provide the physical linkages that integrate Nepal as a single country. The new federal model of government envisaged by Nepal's September 2015 constitution is also likely to make specific SRN corridors particularly relevant to the economic prospects of individual federal provinces.

It is important to note that the SRN remains both incomplete and inadequate with respect to the transportation services that Nepal requires for development. For example, only about 54% of SRN roads feature some form of bituminous surface. Similarly, there are 372 identified gaps totaling over 18000 meters on SRN roads that lack bridges as required for providing year-round access along existing roads. Most SRN roads also only include limited road safety features and the rate of road related fatalities in Nepal is amongst the highest in the world. Historically, the SRN's development has been constrained by GON's fiscal capacity and the inherent technical challenges of Himalayan geology. Increasingly, however the SRN's development is constrained by governance related issues and the limited ability of GON programs to deliver their intended results. Sourcing the overall quantum of investment needed for improving SRN road and bridge infrastructure will remain a formidable challenge. However, the foremost obstacle to addressing it will be improving results from the money that will be spent along the way.

Nepal's Department of Roads (DOR) within the Ministry of Physical Infrastructure and Transport (MoPIT) develops and manages roads and bridges along the SRN. The Program's implementation arrangements have benefitted considerably from the first and second IDA-supported Bridges Improvement and Maintenance Programs (BIMP I and II).

1.2 Project E&S Settings

The bridges under PforR will span Nepal's three physiographic regions: Terai, Mid-hills, and Mountains, across the seven provinces. Due to the challenging terrain and sparse settlements in the Mountain region, there are fewer road networks and bridges, so project activities will be more concentrated in the populous Mid-hills and Terai areas, which have richer road networks. Nepal's busiest highway, the East-West Highway, runs parallel to the southern border with India and crosses many rivers, forests and protected areas containing about 40% of Nepal's bridges. Nepal's economy heavily depends on agriculture, tourism, and remittances, making robust connectivity vital for economic growth. Agriculture contributes to over 60 percent of employment and over 21 percent of GDP. Landholdings are mostly small, with 80.03% of households owning between 0.1-2.0 ha, 5.11% between 2-10 ha, 0.05% above 10 ha, 11.91% less than 0.1 ha and 2.9% without land.

Nepal is highly vulnerable to climate change, ranking 139th out of 182 countries in terms of exposure and adaptability. The country faces risks from variable rainfall, heavy monsoons, extreme temperatures, and steep terrain, leading to floods and droughts. Moreover, the mountainous regions of Nepal are particularly prone to landslides, especially during the monsoon season. Heavy rainfall can trigger landslides that block roads, damage infrastructure, disrupt transportation, and access to basic services. During the recent September 2024 floods, the incessant rains triggered flash floods and landslides where 41 roads and 44 bridges were impacted, resulting in a loss of about US\$52 million. Furthermore, Nepal is in a seismically active zone, making its infrastructure highly susceptible to earthquakes, which can cause significant structural damage to bridges, including cracking of piers, displacement of decks, and failure of joints and bearings. The 6.4 ML Jajarkot earthquake of November 2023 resulted in the destruction of several strategic and local roads and bridges, requiring up to US\$130 million for recovery and reconstruction. Seismic activity can also trigger rockfalls and landslides that damage bridges or block access routes, hindering repair and rescue operations. This is particularly applicable to the existing bridges which are not upgraded to climate resilient and geophysical hazard standards, thereby experiencing frequent damages from these events. These conditions, combined with poverty, remote locations and challenging terrain, make Nepal's infrastructure highly susceptible to climate risks. Vulnerable bridges can disrupt connectivity, affecting access to services and markets, and impeding poverty reduction, especially in rural areas. Given the challenging topography and limited social services, most households have minimal coping strategies against shocks. Therefore, adapting to climate change and strengthening climate-resilient infrastructure is imperative. The Government of Nepal has recognized 59 indigenous groups, known as Adivasi Janjati, whose presence is expected in some project locations across the nation.

1.3 Program Description

Program Development Objective (PDO): The PDO is to improve the resilience, inclusiveness, and safety of bridge connectivity along Nepal's Strategic Road Network and enhance the institutional capacity of the Department of Roads.

Key results areas:

Result Area 1: Promoting resilient connectivity. RA1 focuses on ensuring that the benefits of economic growth reach all segments of society, with a strong emphasis on resilience, given Nepal's vulnerability to natural and climate-induced disasters. By introducing multi-hazard risk factors in decision making, the Program will assess the resilience of bridges, evaluating their ability to withstand climate exacerbated hazards such as flooding, landslides, erosion, and extreme heat to maintain connectivity in adverse conditions. Additional considerations will be added to ensure the network's resilience to the physical risks from climate change impacts, thus reducing the physical climate risk and building adaptive capacity of the network. More explicitly, this "climate proofing" will result in an increase in the adaptive capacity of the road system as it becomes better equipped to withstand the impacts of climate change (e.g., extreme weather events, temperature fluctuations, etc.), ultimately allowing for a more resilient transportation network and minimizing disruptions to traffic flow and connectivity to remote locations even in harsher climate conditions. The Program will also enhance operational resilience by upgrading the BMS and using resilience criteria when forecasting and prioritizing bridges for inspection, maintenance, and replacement. Hazard and risk mapping tools will be employed to assess and tag risks to bridge locations. These analytics would also incorporate hydrological and geotechnical forecasting and reporting information, as well as the likelihood of exposure or damage to different hazard scenarios, to inform emergency preparedness, response planning and deployment during emergencies. These multi-hazard risk assessments will help to

identify exposures to natural threats and quantify the vulnerabilities of bridges to these threats, which will then be used in the planning, design, construction, and maintenance of bridges to improve their resilience.

Result Area 2: Enhancing inclusiveness and safety of bridges. RA2 focuses on inclusiveness as it aims to improve access and travel time for all, especially for remote and marginalized communities and individuals include persons with disabilities. The operation will undertake data initiatives including: (i) producing subnational poverty maps combining the latest household survey and census data; and (ii) promoting improved service delivery, using maps of the concentration of public assets and facilities within the vicinity of current bridges. The Program will use these data resources to inform the impact of bridges selected for improvement and maintenance. This will improve access of the economically marginalized communities to markets, healthcare, education, and other essential services, which is critical in Nepal given its geographical barriers. Improved connectivity will benefit women and children by enhancing their access to education, healthcare, and economic opportunities. The Program will also focus on universal access, enhancing the inclusion of non-motorized and disabled users. In addition, inclusivity shall include the implementation of improved safety measures to ensure access to all users across various aspects of bridge operations including animal safe crossing. The Program will implement several safety measures, including: installing guardrails and other traffic safety barriers; upgrading pedestrian walkways to ensure their clear demarcation and separation from vehicular lanes; installing rumble strips to reduce the speed of traffic and the risk of high-speed collisions; and adding reflective bridge signage (e.g., maximum load limits, speed limits, and pedestrian crossings) along with reflective road markings to enhance visibility during low-light conditions. The gateway and verification processes will ensure these features before approving the bridge.

Result Area 3: Strengthening organizational and technical capacities. RA3 will support the enhancement of the capacity of the DoR's Bridge Branch, which is responsible for ensuring resilient, safe, and year-round connectivity across the nation's bridges. It aims to strengthen the Bridge Branch by expanding specialized training programs in areas that were not covered under previous BIMP Programs, including: disaster risk reduction, climate resilience, sustainable materials, biodiversity conservation, community and occupational health and safety and sexual exploitation and abuse and sexual harassment. It will facilitate knowledge exchange initiatives and assist in developing standardized processes for bridge construction, maintenance, and asset management to ensure quality across all bridge-related activities. The Program will also support strategies to promote gender diversity and inclusion, such as mentorship programs for women engineers, leadership training opportunities, and the establishment of networks to support career advancement.

Disbursement Linked Indicators (DLIs): The Program has Five DLIs as given in table below:

Item	Activity	Quantity	Units
DLI-1	Major Maintenance incorporating resilience measures	6,500	Meters
DLI-2	Bridge Safety upgrades	10,000	Meters
DLI-3	Construction of new 2-lane bridges incorporating resilience measures	3,800	Meters
DLI-4	Completion of Backlog bridges	7,000	Meters
DLI-5	Business process reform plan developed and implemented for institutional strengthening	4	Ea.

1.4 Program Exclusion

The Program boundary for PforR financing will **exclude** the following:

- Bridges on roads that are outside of the Ministry of Physical Infrastructure and Transport's (MoPIT's) defined Strategic Roads Network.
- Any bridges that are likely to have significant adverse impacts that are sensitive, diverse, or unprecedented on the environment and/or affected people. Specifically, this will exclude bridges in Nepal's National Parks and designated environmentally sensitive areas. Existing bridges in national parks and other protected areas constitute 3.1% (by number) of Nepal's bridge stock on the SRN. Gaps that require new bridges in national parks or other protected areas constitute 10% (by number) of all new bridges required on Nepal's SRN. Given the relatively small portion in both cases, the Program remains coherent despite the exclusion of these bridges.
- Any bridge works that would comprise a high value contract as defined by Bank Procedures 11.00 which describes "*mandatory prior review thresholds for RPMs and the OPRC.*" No such contracts are currently planned over the proposed time scale of the operation
- Existing backlog bridges that lack documentation for compliance with Nepal's Public Procurement Act and Regulations, and requirements for social and environmental risk management as defined by the Environmental and Social Management Framework (ESMF) that applies to the Program.
- Bridges that are excluded from PforR financing will not count toward verified achievement of Disbursement Linked Indicators. Expenditures associated with works on excluded bridges will not factor into the Program's total calculated expenditure which cannot exceed the amount of financing disbursed from the Association.

In addition to the criteria, the following specific E&S exclusion criteria will be applicable:

- Activities that are not consistent with the legal/ regulatory framework of the country.
- Activity that involves acquisition of land resulting in significant loss of land/ livelihoods/ access- particularly physical displacement.
- Activities that will involve the use of forced eviction of informal settlers/ users of land.
- Activities which put permanent restrictions on access/ usage of resources.
- Any activity that involves child labour (persons under 14 years of age in any activity and persons above 14 years and under 18 years of age in hazardous activities).
- Activities that would adversely affect places of cultural significance and protected historical/archaeological assets (both natural and human-made).

It is also recommended that prior to initiation of civil works under the P for R operation, land free from encumbrances is provided to avoid any adverse impacts and unforeseen delays in construction related activities.

1.5 Scope of the ESSA

As required for a PforR operation, a detailed Environmental and Social Systems Assessment (ESSA) has been undertaken to identify the key environmental and social (E&S) risks that may impact the achievement of the Program Development Outcomes and attempts to assess the ability of borrower's current systems to manage likely risks and recommends additional measures to mitigate them.

This ESSA analyzes the country and statewide systems, prevailing systems within the DoR responsible for implementing different components under this operation, to understand the extent to which the existing systems and capacities are aligned with the 6 core principles. These 6 Core principles relate to:

- ✓ Promote environmental and social sustainability in the Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's environmental and social impacts.
- ✓ Avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program.
- ✓ Protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.
- ✓ Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist the affected people in improving, or at the minimum restoring, their livelihoods and living standards.
- ✓ Give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.
- ✓ Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

1.6 ESSA requirements

Following are the ESSA requirements:

- Preliminary screening is done to ensure that activities that are “judged to be likely to have significant adverse impacts that are sensitive, diverse, or unprecedented on the environment and/or affected people are not included in the PforR design and are excluded from the Program
- Stakeholder engagement is an essential element of the ESSA process. Through this engagement, both internal and external stakeholders get an opportunity to meaningfully participate in the ESSA process, inform the preparation of the ESSA Report, and provide meaningful inputs throughout the lifecycle of the operation. Generally, during the PforR preparation process, field-level one-to-one and focused group community consultations and a stakeholder workshop are conducted to meet the stakeholder engagement requirements.
- Analysis: Using secondary literature and the information collected during the stakeholder engagement process, the ESSA analyses the borrower's applicable systems, considering the system both as it is defined in laws and regulations, and as it is implemented in practice. The purpose of this analysis is to determine the systems' capacity to manage program risks during preparation and throughout implementation.
- Grievance Mechanism (GM): The ESSA reviews the Program-level grievance mechanisms and assesses their adequacy and effectiveness. The ESSA confirms that the GMs can receive, record,

resolve, and follow up on complaints or grievances received. Further, the ESSA includes any recommendations for enhancing or improving the GM.

- **Recommendations:** ESSA identifies measures and actions to manage any significant gaps in the borrower's capacity to implement E&S management systems at a level commensurate with the identified risks to The Program, and consistent with the Bank's core principles and planning elements. The Bank and the borrower together agree to implement these as part of the Program.
- **Disclosure:** It is required for the draft ESSA report to be disclosed before the appraisal decision meeting so that the views of interested members of the broader public may be solicited and considered before all Program decisions are made final. Further, the final ESSA Report and recommended actions are to be completed before negotiations, and the final version is disclosed accordingly.

1.7 Methodology for the ESSA

The ESSA was carried out by a team of Environmental and Social Specialists from the World Bank. The methodology adopted for the ESSA focused on the environmental and social management systems as applied to the subset of bridges under the Department of Roads (DoR), where Bank funding through the PforR is proposed. The analysis was conducted by reviewing relevant secondary literature, legal frameworks, policies, and guidelines (including applicable Acts, Rules, policies, Government Orders, Circulars, Gazette notifications, guidelines of the international development financing institutions working with DoR and the Nepal ESF overview assessment report), assessing the institutional capacity of the Program executing and implementing agencies (MoPIT and DoR, respectively), and integrating experiences and lessons learned from the implementation of BIMP-I and II with the findings of a Strengths-Weaknesses-Opportunities-and-Threats (SWOT) analysis.

The analysis concentrated on identifying the strengths and gaps (weaknesses) associated with the systems in place in the bridge sector to address potential environmental and social impacts. This was done on two levels: the system as written in laws, regulations, and procedures, and as applied in practice; and the system implementation capacity, as demonstrated by the performance of institutions executing and implementing the predecessor Programs (BIMP-I and II).

2. Potential Environmental and Social Impacts of the Program

The assessment of potential environmental and social risks gauged the a) nature of activities or investments that the DoR is responsible for in this operation, b) the nature and magnitude of E&S risks and impacts expected, c) E&S management capacities of the DoR to manage these risks and impacts, and d) the enabling legal policy framework under which these risks are being managed.

The first four DLI's (1, 2, 3, and 4) are mainly related to completion of civil works and DLI 5 mainly set out for delivering institutional results. The E&S risks are expected to emerge from activities under Result DLI1 – DLI4 where physical investment is planned to be undertaken. These risks however are expected to be limited and largely reversible in nature and are not expected to pose significant risks. Risks identified through the ESSA are addressed through the results area, or through disbursement linked indicators (DLI). This operation has considered environmental and social risk mitigation measures in the Program Action Plan (PAP) and identified options to improve systemic implementation and strengthen the institutional capacity of DoR.

The table below enumerate the social and environmental risks and impacts of the interventions related to the proposed PforR.

Disbursement Linked Indicator (DLI)	Proposed Investments/ Activity	Environment Risk Rating	Social Risk Rating	Justification for rating (where applicable)
DLI 1: 6,500m Major maintenance incorporating resilience measures DLI 2: Bridge safety upgrades (10,000m) DLI 3: Construction of new 2-lane bridges incorporating resilience measures (3,800m)	Replacement of all timber/ temporary bridges, rehabilitate deteriorated bridges, replacement of collapsed / washed out bridges, construction of new bridges, clear the maintenance backlog and construct new roads,	Substantial	Substantial	Construction activities will spread across all geographical areas including remote locations; thus, managing E&S risks may be a challenge due to limited capacity and manpower within the GESU and Regional level to manage and monitor social risks pertaining to land and livelihood related impacts, including labor and GBV/SEA/SH risks. The environmental and social impacts will be limited to those related to the construction phase of the rural bridges along the identified Core rural Road Network. The regulatory provisions exist but still there are policy and

DLR 4: Completion				procedural gaps which has been identified in the study.
Disbursement Linked Indicator (DLI)	Proposed Investments/ Activity	Environment Risk Rating	Social Risk Rating	Justification for rating (where applicable)
of backlog bridges (7,000m)				
DLR 5: Business process reform plan developed and implemented for institutional strengthening	Incorporate resilience into standards and guidelines Update BMS and include a climate change module Update ESMF and prepare training for its rolling out Enhance GESU's mandate for E&S oversight	Low	Low	Largely focused on Procurement for hiring of relevant specialist for related tasks with no adverse E&S risks and impacts. Capacity building plan for the staff will also focus on enhancing E&S risk management capacity under the program. Sufficient staff will be engaged to manage E&S risks
				Substantial Risk

2.1 Potential Environmental Impacts

Given the Program scope, coverage and size of the bridges under the BIMP-III the anticipated adverse environmental issues and impacts related to Program implementation are expected to be limited in nature and are not expected to pose a significant risk. The Program activities will not encroach upon or degrade the sensitive habitats by not including any bridges located in the sensitive areas of floral and faunal biodiversity value or in a protected area. Nevertheless, minor implications on the existing vegetation cover (limited to the bridge abutment's locations) and on the aquatic ecology (limited to a few hundred meters upstream and downstream of the bridge crossings), needs to be given due attention from the natural environmental perspective depending upon the bridge site locations. Impacts associated with the bridge repairs and construction are not complex and can be readily managed with known mitigation and management techniques provided contractors take care to implement agreed mitigation measures

An important issue of concern related to the bridges during construction is the construction impacts associated with dredging, foundation works, or riverbank reinforcements which may affect aquatic biodiversity. Similarly, impacts on the existing vegetation cover, slope stability along bridge approaches, changes in the river course/hydrology affecting the aquatic ecology and construction period disturbances such as noise, dust pollution, and spoil disposal are also to be considered. Also of concern is the occupational health and safety of the construction workforce. A similar issue is the community health and safety related to traffic accidents during the operation phase of the Program, as adjoining areas of bridge

abutment locations are invariably occupied by encroachers for market development throughout Nepal. BIMP- II and III field observations have shown that waste management, from the construction activities as well as from the labor-camps, is commonly poor.

At the same time, the Program is expected to deliver several environmental benefits. The repair and maintenance of bridges will ensure that the risks of bridge failure are reduced, and that erosion and sedimentations are minimized through repair of failing foundations and river training, or abutment works. Improved performance of the DOR with respect to environmental planning and management will help to ensure that issues are identified earlier and more consistently and that contractors will be supervised more regularly and environmental provisions of contracts enforced more consistently.

Program activities are unlikely to encroach upon or degrade sensitive habitats because the Program excludes any bridges located in sensitive areas of biodiversity such as protected national park areas. Adverse environmental effects of the bridge works are likely to be temporary in nature but depending on local conditions may have implications for the following issues to varying degrees.

Change in morphology, longitudinal profile and hydrological character of river: This is possible due to narrowing of river, construction of piers and guide bunds or flood protection/stream bank protection works along the riverbanks for the protection of bridge from floods. The effect, in the case of medium and small bridges being considered under the current Program, is likely to be more pronounced around the bridge location. The effect could be seen up to few hundred meters, typically up to 500 m, upstream and downstream depending on the nature of site and river as well as details of bridge and associated works. The extraction of sand and gravel from the river during bridge construction is another reason for such changes. The extraction of sand and gravel could continue even after completion of the bridge construction as the access road developed during construction may remain usable afterward. The review of BIMP- I and II environmental and social safeguard field observation and monthly progress report indicates that there are still issues related to the diversion of river regime, lacking high embankment slope protection, practice of solid waste dumping beneath the bridge and non-removable of road diversion materials. The construction of new bridges and its type and location of foundation works could lead to modification of flood plain and riverbed and affect landscape and aquatic ecology. The proposed scope of work that mainly involves rehabilitation and maintenance of bridges is unlikely to cause any significant or irreversible change in morphology, longitudinal profile or hydrological character of river. But for the case of new construction of bridges it is likely to cause significant impact in river morphology.

Adverse effects on aquatic life: Sand and gravel extraction, initiated during construction, is a main cause for loss of habitats including spawning grounds, and feeding grounds of aquatic life (fish/aquatic insects/phytoplankton/zooplanktons). The changes in river morphology, longitudinal profile and depth and velocity of water flow discussed above may also lead to adverse impacts on the aquatic life. Elements of bridge structures may also act as a barrier to fish movement depending on their design. This could be particularly relevant if there is vertical drop at the riverbed across the river. The pollution or degradation of water quality due to construction wastes and sounds/vibration produced in river water during construction may also affect fish and other aquatic life. Construction workers may also fish near their work sites. The effect is likely to be felt few hundred meters upstream and downstream of the bridge location. The significance of such effects will depend on whether the river is a habitat of protected, endangered or rare species or whether the bridge site is on the migration route of migratory species. Adverse impacts could be minimized using standard practices.

Effects on forest and wildlife: Direct loss of trees and vegetation is possible when a bridge and/or approach road is in the forest. During construction, vegetation may require clearing from the construction site which may result in direct loss of several standing trees. This is possible around bridge abutments and approach roads, if these are located in forested areas. Induced impacts on nearby forests are also possible due to fire-wood demand of workers during construction, and of roadside restaurants and business that usually start during construction which may continue after construction. Other types of induced impacts during operation phase could result from improved access – in some situations, an otherwise inaccessible forest

may become accessible on account of a new bridge. Adverse impacts on the trees and vegetation may also include impacts on rare, endangered, indigenous floral species of conservation significance provided these species are present in the impacted forests. The impact on forest would also affect wildlife and birds in the forest. Hunting by the workers during construction could be a possibility, and construction noises may also disturb the wildlife and birds. Impacts on wildlife and birds are likely to be limited as the Program will not support bridges located in protected areas (the recognized wildlife habitat). Any adverse impact and habitat destruction will be mitigated by avoiding construction activities on sites in protected areas, critical natural habitats, or reserved forests.

Implications for physical cultural resources: The BIMP-III proposed Program endeavors to avoid sites of archeological, cultural, religious, and historic value. A review of environmental and social assessments requiring bridges under BIMP I and II did not find issues related to physical cultural resources. However, the possibility of “chance finds” cannot be ruled out for BIMP III projects. Potential adverse effects on physical cultural property will be accounted for and adequate measures will be taken to address such effects.

Operational phase effects: The principal operational phase issues relating to bridges are associated with the use and users of bridges. During the operational phase community health and safety related to traffic and pedestrian accidents may be an important concern in some areas. In addition, congestion around the adjoining areas of bridge abutment locations is invariably occupied by encroachers for market development and other purposes.

Occupational, community health and safety considerations are well illustrated by DoR ESMF chapter 10 to address health, safety and wellbeing of workers, project staff, and the community during the construction and operation phase

2.2 Potential Social Impacts

Land acquisition and resettlement impacts: The Bridge Development Program anticipates minimal adverse impacts due to land acquisition, with any necessary resettlement likely confined to areas near the bridge works. Based on previous experiences, most adverse social impacts are expected to be temporary during the project, such as temporary land leasing for contractor operations. However, the program will include the construction of new bridges, which may require land for both the bridge construction and the development of access roads. Additionally, small-scale adverse impacts on private assets (such as trees and business structures, residential building), livelihoods, and other factors are anticipated. These impacts could potentially result in minor physical and economic displacement, as well as permanent or temporary impacts related to access to assets. For any requirement of private land and/or other assets, acquisition rather than voluntary donation is suggested to be the preferred modality. Delays in implementing assistance for squatters and compensation for livelihood restoration and property replacement due to the need for cabinet approval and this should be factored in project workplan and timelines.

Impact on Indigenous peoples: bridge rehabilitation and construction can adversely impact nearby indigenous communities due to land acquisition, public health issues, noise, and traffic safety concerns. The DoR ESMF includes an Indigenous Peoples Planning Framework (IPPF) in Chapter 8.2, which outlines the policy, process, and procedures for preparing Indigenous Peoples Development Plans (IPDP) when Indigenous Peoples are affected by the project. Chapter 6.1 addresses environmental and social management (ESM) to mitigate adverse impacts and safeguard the environment and local communities, providing specific measures and establishing procedures for implementation and monitoring.

Labor influx and Health and safety impacts: The presence of the construction workforce and construction operations will have implications on public health and traffic safety for communities nearby as well as for

the construction workforces themselves. Most BIMP III Program bridges will require relatively small workforces, and the scale of corresponding impacts will likely be small and manageable. In general, worker and public safety aspects for infrastructure are managed through provisions in the bid/contract documents for contractors enhancing implementation of the workers' code of conduct, labor recordkeeping system, prohibition of child and forced etc. Moreover, due to the integration of pedestrian paths and other safety features in the newly constructed bridges, community safety will be further enhanced once the bridges come into operation.

Gender and Social Inclusion: It has been observed that program inclusiveness is weak regarding the active participation of and access to opportunities for women, adult girls, and other marginalized groups in the project areas. Although the Ministry of Physical Infrastructure and Transport (MoPIT) recently introduced a GESI Guideline, its implementation has been minimal. Therefore, it is essential to develop and implement a comprehensive GESI plan for each bridge subproject.

Stakeholder Consultations/ Citizens Engagement: ESSA findings underscore the importance of enhancing local community engagement in the planning, implementation, and operation of bridge projects. Community consultations should involve residents around each major maintenance and new construction bridge, ensuring equitable access for indigenous peoples and vulnerable groups through inclusive stakeholder consultations during planning and implementation. Detailed project information, including impacts and mitigation measures, should be communicated to the local community through various methods such as detailed project information boards, radio jingles, and inclusive community consultations. Participants' feedback should be documented and incorporated into the social and environmental assessment reports and the detailed project report (DPR). Agreed mitigation and enhancement measures should be implemented in conjunction with civil works. Additionally, while the DoR (MoPIT) has established an electronic grievance handling mechanism, its effectiveness needs enhancement to ensure stakeholder awareness and proper entry and redressal of grievances received verbally, over the phone, in hand-written forms, and others.

2.3 Exclusion

The Program for Results (PforR) financial instrument does not support programs or activities within programs that could cause significant harm to people and the environment, or which would have significant adverse social consequences. All PforR operation proposals will be screened for such adverse impacts at an early stage of preparation.

The following specific E&S exclusion criteria will be applicable for BIMP III:

Social

- Activities that are not consistent with the legal/ regulatory framework of the country.
- Activity that involves acquisition of land resulting in significant loss of land/ livelihoods/ access- particularly physical displacement.
- Activities that will involve the use of forced eviction of informal settlers/ users of land.
- Activities which put permanent restrictions on access/ usage of resources.
- Any activity that involves child labour (persons under 14 years of age in any activity and persons above 14 years and under 18 years of age in hazardous activities).
- Activities that would adversely affect places of cultural significance and protected historical/archaeological assets (both natural and human-made).

It is also recommended that prior to initiation of civil works under the P for R operation, land free from encumbrances is provided to avoid any adverse impacts and unforeseen delays in construction related activities.

Environment

- Activities likely to have any considerable potentially significant adverse impacts and falling within critical habitat, designated protected.
- Activities that are in the vicinity of any natural habitats or cultural heritage sites posing potential risks.
- If significant, cumulative, induced, and indirect impacts are anticipated due to the proposed sub projects.

2.4 Opportunities & Benefits

The Bridge Program will enhance connectivity, providing increased access to economic opportunities, particularly for remote and isolated communities. This will positively impact employment structures and human capital formation, benefiting both men and women, including indigenous communities, who make up about one-third of Nepal's population.

Upgraded bridges will feature visual signs like reflective markers and warning signals to improve road safety, especially in challenging weather conditions or at night.

Resilient bridge designs will withstand natural disasters, heavy traffic, and environmental impacts, ensuring year-round access. This will enhance the supply chain of agricultural commodities, healthcare, and other social services, benefiting marginal farmers, women, and disadvantaged ethnic and Dalit communities. Improved bridges will also enhance traffic flow and reduce travel time. The Second Bridges Improvement and Maintenance Program (BIMP II) in Nepal demonstrates this by providing safe, resilient, and cost-effective bridges on Nepal's Strategic Road Network. The program's inclusive designs benefit pedestrians and cyclists, reduce transportation costs, and improve access to public services. It also ensures equitable access for indigenous peoples and vulnerable groups through inclusive stakeholder consultations.

Adopting principles of avoidance, minimization, and mitigation for adverse impacts, along with integrating beneficial impact enhancement measures, will support the sustainability of the program's achievements.

3. National Environmental and Social Management System

3.1 Existing Legal and Policy Framework

According to the Constitution of Nepal (2015) every citizen has the right to live in a clean environment. The victim shall have the right to obtain compensation in accordance with law, or any injury caused from environmental pollution or degradation. The development plans, Environmental Protection Act and Nepal Environmental Policies and Action Plan (1993), inter alia, provide a broad basis for environmental and social management in Nepal. These umbrella policies, in general, promote prevention of adverse impacts, protection and sustainable use of natural resource, equitable distribution of benefits, balancing development and environmental conservations etc. Nepal is party to, or has ratified, several international environmental conventions and treaties demonstrating the country's willingness to follow good international environmental practices. This section discusses the national laws and policies covering relevant aspects application to the implementation of the program.

3.1.2 Environmental Policies, Rules, and Regulations

Name of law/policy	Relevant provisions of the Act/ Policy	Relevance for Environmental Management
Environment Protection Act (EPA), 2076 BS (2019 AD) (EPR), 2077 BS (2020 AD) National Environment Policy, 2076 BS (2019 AD)	This is the main Act guiding environmental assessments and the permitting process of development projects in Nepal. Section 2 of the Act discusses different aspects of conducting a brief environmental study (BES), IEE, and EIA. Article 3 of the Act mandates a BES/IEE/EIA study for development projects. It empowers Ministry of Forest and Environment charged with the mandate of preventing environmental pollution in all its forms and to tackle specific environmental problems that are peculiar to different parts of the country. Article 6 requires project developers to follow quality standards specified by the GoN while preparing environmental study reports. Article 7 discusses approval procedures for environmental study reports. Article 8 prohibits the implementation of the project without an approved environmental study report. Article 9 discusses strategic environmental analysis and Article 10 deals with the preparation of an Environment Management Plan prior to implementation of the proposal. Article 11 specifies the conditions under which a supplementary EIA is needed. Article 17 discuss the responsibility of the proponent for the management of hazardous substances.	This is relevant because the program will generate E&S risk and impact noise, air, water, soil, and electromagnetic pollution and generate solid waste. And need to comply with its provisions.

National Climate Change Policy, 2076 BS (2019 AD)	The main goal of this Policy is to improve livelihoods by mitigating and adapting to the adverse impacts of climate change, adopting a low-carbon emissions socioeconomic development path, and supporting and collaborating in the spirit of the country's	The program will need to incorporate green, resilient in infrastructure design and implementation.
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Name of law/policy	Relevant provisions of the Act/ Policy	Relevance for Environmental Management
	commitments to national and international agreements related to climate change	
Aquatic Animals Protection Act, 2017 BS (1960 AD)	This Act empowers the government to prohibit the catching, killing, and harming of aquatic animals. According to this Act, aquatic animal means any animal living in water. Section 3 restricts the methods of catching and killing aquatic animals by using electric current, explosive substance, or poisonous substance with the intent of catching and killing any aquatic animals in any water. Section 4 empowers the GoN to prohibit the catching, killing, and wounding of certain kinds of aquatic animals.	Construction activities near water bodies could affect aquatic animals such as fish and otters.
Solid Waste Management Act, 2068 BS (2011 AD) Solid Waste Management Rules, 2070 BS (2013 AD)	This Act and rules aim to manage solid waste, mobilize resources, and ensure the health of the public by controlling the adverse impact on pollution from solid waste. Applies to all those wastes resulting from Construction, remodeling, repair & demolition of any civil structure.	Construction works will generate solid waste during both the construction and operation phases.
National Parks and Wildlife Conservation Act, 2029 BS (1973 AD) and Amendment 2049 BS (1992 AD) Conservation Area Management Rules, 2053 BS (1996 AD)	This Act and Rules includes provisions to restrict damage to forest products and to block or divert any river or stream flowing through a national park or reserve or any other source of water. It also states that, without permission, no one shall cut, fell, remove, or overshadow any tree, plant, or any forest produce or do anything by which the forest produce may die, burn, or get damaged.	No sub projects would be considered which fall under the national parks, and sanctuaries and buffer zones around these eco sensitive zones

Forest Act, 2076 BS (2019 AD)	The Act also aims to promote private, public, and urban forests. As per Article 42(2), the project needs to make available the equivalent amount of land to the government for forest development. Such land should be in similar ecological and geographical area and near the impacted national forest as far as possible. If the project is not able to buy land, it could deposit the money needed to buy such land in the Forest Development Fund established, as per Article 45 of the Act. Article 42 (5) requires the project developers to pay the expenses needed to reforest and maintain reforested area for five years.	No sub projects shall be considered under the Program falling within designated forest areas.
National Forest Policy, 2075 BS (2018 AD)		
Forest Rules, 2079 BS (2020 AD)		
Water Resources Act, 2049 BS (1992 AD)	This Act ensures the rational utilization, conservation, management, and development of water resources in Nepal. The main objectives of the Act are to define legally the process for determining beneficial uses of water resources, to prevent	To ensure no program activities adversely impacts the water resources and where required applicable mitigation measures as per the mitigation hierarchy are implemented.
Name of law/policy	Relevant provisions of the Act/ Policy	Relevance for Environmental Management
Water Resource Rules, 2050 BS (1993 AD)	environmental and other hazardous effects thereof, and to keep water resources free from pollution. The Act strives to minimize the environmental damage to water bodies, especially lakes and rivers. The Act specifies that soil erosion, flooding, landslides, or any significant impact on the environment should be avoided in all uses of water resources. Article 3 of this Act provides ownership of water resources to the GoN. Article 7 stipulates the priority order of the use of water resources as drinking and domestic use (first), irrigation (second), agricultural usage such as animal husbandry and fisheries (third), and hydroelectricity (fourth). Article 8 makes provision for the licensing of water use and Article 9 for the utilization of water resources for hydroelectricity. This Act is applicable to the Project because the Project will involve the generation and transmission of hydroelectricity, as well as construction activities that may potentially affect water quality (e.g., disturbance of slopes, use of hazardous materials).	
Public Health Service Act, 2018	requires “industries, businesses, projects” to undertake public health impact assessment.	Influx and construction may generate public health risks.

Public Roads Act, 2031 BS (1974 AD)	The major provisions of the Public Roads Act, 1974 include prescribing rules for planned road construction: regulating road width and boundaries within which no house can be built; and maintaining the road environment through plantation along public roads. GoN agencies and the public need to obtain prior approval from the Department of Roads to carry out work on roads and road boundaries.	the Program will involve carrying out work on roads (e.g., potential for temporary road closures when stringing crosses on a public road).
Disaster Risk Reduction and Management Act, 2017	provides a legislative framework for disaster mitigation, preparedness, response, and recovery.	Program areas are prone to natural disasters.

3.1.3 Social Policies, Rules, and Regulations

This section discusses both national and state laws and policies covering relevant aspects such as land management, welfare of workers, social inclusion, citizen engagement including grievance redressal and gender applicable to this sector.

Name of law/policy	Relevant provisions of the Act/ Policy	Relevance for Social Management
Land Acquisition Act (LAA), 1977	The Act covers all aspects of land acquisition and compensation to private landowners for land and other assets. Article 3 of the Act empowers the GoN to acquire any land at any place for any public purpose, subject to compensation under this Act. As per Article 4, the GoN may also decide to acquire land for other institutions to implement projects in the interest of the public. The institution requesting land acquisition is required to pay all costs associated with such acquisition. Article 5 makes provision for appointing an Officer for Preliminary Action. Article 6 outlines procedures for preliminary action relating to acquisition of land, and Article 7 contains provisions for the compensation of losses incurred during preliminary action. Article 9 of the Act relates to the notification of land acquisition. Article 13 deals with the compensation rate. Compensation is to be paid in cash, as per this Act; there is no provision for land-forland compensation. Article 18 of this Act requires the chief district officer to prepare a list of persons to compensation and issue a notice accordingly for the information of the concerned persons. This Article also makes provision for the lodging of complaints by unsatisfied persons and a grievance redressal mechanism. As per Article 27 of the Act, land could also be acquired through negotiation.	Sub program activities may include land acquisition and resettlement impacts.

Policy on Land Acquisition, Resettlement, and Rehabilitation for Infrastructure Development Projects, 2071 BS (2015 AD)	This Policy emphasizes that project development agencies will conduct meaningful consultation with project-affected persons, communities, and sensitive groups	Relevant to address issues of encroachments under the program.
Lands Act, 2021 BS (1964 AD) and Amendment 2075 BS (2018 AD)	This Act provides guidance on land and/or asset acquisition, land ceiling, rights of tenant, exemption from upper ceiling, land use, control of land fragmentation, and plotting. This Act is applicable to the	Resettlement risk may impact tenants.
Land Use Act, 2076 BS (2019 AD) Land Use Policy, 2072 BS (2015 AD)	This Act classifies land into 10 categories: agricultural; residential; commercial; industrial; mining and mineral; forest; river, stream, pond and wetland; public use; cultural and archaeological; and others. The land classification is based on the composition and use of the land. The classification has not clearly pinpointed Guthi land, which is religious land in the name of temples or shrines, from the revenue of which the religious ceremonies or festivals associated with the temples or shrines are celebrated and the repairs and maintenance of the temples or shrines are carried out. The Act is introduced based on the condition of land, population growth,	The Project will involve use of land other than the existing use.

Name of law/policy	Relevant provisions of the Act/ Policy	Relevance for Social Management
	requirements of land for various purposes, such as food and habitation and the need for economic development and infrastructure building, among other things. The main aim of the Act is to ensure that land is properly used and managed and that land set aside for one purpose is not used for another. The provincial and local governments are also required to formulate their own land use laws based on the Act.	
Caste-based Discrimination and Untouchability Act, 2011	This Act contains provisions to end discriminatory practices aimed at those considered to be members of the lowest castes in the public and private sphere. It Provides for reservation of vacancies in government services and posts.	Relevant in cases of augmentation of staff through direct recruitment.

Person with Disabilities Rights and Protection Act 2013	Sections 44, 45 and 46 of the Act categorically provides for non-discrimination in transport, nondiscrimination on the road and non-discrimination in built environment respectively.	Bridge infrastructure planning will be required to adhere to universal design principles, ensuring accessibility for all.
Sexual Harassment at the Workplace (Elimination) Act, 2015	Protects women workers from sexual harassment and abuse of power at their workplace. It defines sexual harassment as any unsolicited acts committed by, or caused to be committed by, any person in abuse of his/her position or power, or by the imposition of any type of coercion, undue influence, or enticement. Provides guidance on redressal against such complaints, including its internal investigation in a time bound manner.	Program need to ensure protection of women workers and employees against abuse, exploitation.
National Employment Policy, 2014:	National Employment Policy, 2014 identifies seven objectives, including promoting productive and output-oriented employment opportunities, prioritizing youth-focused employment opportunities, and strengthening labor market by expanding the use of research-based IT. The policy vows to promote the construction sector and impart training to produce trained workforces for infrastructure development and promote employment opportunities in road construction and hydropower projects.	Program may support training programs to facilitate youth employment.
Labour Act, 2074 BS (2017 AD) Labour Rules, 2075 BS (2018 AD)	This Act provides guidance on the classification of job postings and prohibition on child labor. It also provides restriction on minors and women, job security, retrenchment and re-employment, working hours, occupational health and safety, welfare arrangements, special arrangements for construction sites, conduct and penalties, and settlements of labor disputes.	Program will involve advertising and hiring employees and occupational health and safety issues.

Name of law/policy	Relevant provisions of the Act/ Policy	Relevance for Social Management
Child Labor (Prohibition and Regulation) Act, 2056 BS (2000 AD)	This Act prohibits engaging children in factories, mines, or similar risky activities, and makes necessary provisions regarding their health, security, services, and facilities while engaging them in other activities. Article 3 sets the minimum age to work at 14 years of age, and	Program will be hiring local workers and needs to prevent use of child labor.

Child Labor (Prohibition & Regulation) Rules, 2062 BS (2006 AD) Article 4 prohibits child labor by way of persuasion, misinterpretation, or coercion.		
National Civil Code and Criminal Code (Muluki Debani Samhita, 2074 BS [2017 AD], Muluki Aparadh Samhita, 2074 BS [2017 AD])	This Act refers to land acquisition/utilization of land, restriction on illegal encroachment of land, no obstruction in public places like road, river, or any other public places, and protection of governmental and public property. Chapter 5 elaborates provisions relating to government, public, and community properties. Chapter 14 explains provisions relating to wages, labor, and employment.	The Project will involve land acquisition and will cross public spaces like roads, rivers, and other government property and will also involve hiring employees.
Contribution Based Social Security Act, 2074 BS (2017 AD) Contribution Based Social Security Regulation, 2075 BS (2018 AD)	This Act is enacted per the social welfare concept in accordance with which the people have the right to welfare of various kinds as a fundamental right, as enshrined in the Constitution. The Fund will operate various schemes, as per the Act: medical and health protection, maternity protection, accidental protection, old age protection, dependent family protection, and unemployment protection.	The Act applies to industries, businesses, and the service sector, as prescribed by the government. Even those who are selfemployed can take part in the Social Security Fund.
The Bonded Labourer (Prohibition) Act, 2002,	The act bans bonded laborers and aims to rehabilitate the freed bonded laborers and uplift their livelihood from the perspective of social justice, declares that any person serving as bonded laborer is freed from bonded labor after the commencement of this Act, which is February 2002.	The Program need to ensure protection against bonded laborers.

Right to Information Act, 2064 BS (2007 AD)	The aim of this Act is to make the functions of the state open and transparent in accordance with the democratic system and to make it responsible and accountable to the citizens. It intends to protect the rights of the citizens to be well informed by providing citizens with simple and easy access to information of public importance that is held in public bodies while protecting sensitive information that could have an adverse impact on the interests of the nation and citizens. This Act is applicable to the Project because the Project will involve construction of a large capital facility for which affected stakeholders have the right to information.	Ensures transparency and accountability in the government operations and citizen's access to public information.
Name of law/policy	Relevant provisions of the Act/ Policy	Relevance for Social Management
Hello Sarkar Grievance Management Guidelines, 2022	The government unveiled Hello Sarkar Grievance Management Guidelines, 2022, to better manage the grievance of the beneficiaries of the services provided by the government agencies and provide appropriate resolution efficiently. Section 3 of the Guidelines establishes an Electronic Grievance Management System and Grievance Handling Unit in the Office of Prime Minister and Council of Ministers while Section 4 of the Guidelines provides 9 different channels, including toll-free phone numbers (1111), social media, written complaint, among others, to register complaints to the public. Section 6 categories received complaints into four groups based on the nature of the complaint and response urgency.	Project may leverage the Hello Sarkar grievance mechanism
Local Government Operation Act, 2017	Section 46 of the Local Government Operation Act, 2017 also includes provisions to constitute a Judicial Committee in Municipality and Rural Municipality to manage disputes and complaints at the local level mainly through the process of reconciliation. Section 47 of the Act identifies 13 sectors of disputes and grievances where the Municipality and Rural Municipality can provide a resolution and additional 11 sectors of disputes and grievance where the Municipality and Rural Municipality can play a role of mediation between the disputing parties.	Program will traverse various local governments.

Ancient Monument Preservation Act, 2013 BS (1956 AD)	This Act refers to ancient monuments and empowers the government to declare any place or area as a monument site/area. It also restricts the transfer, transaction, export, or collection of ancient monuments and archaeological objects or curios without the prior approval of the government. Although the Program will avoid all known ancient monuments, archaeological sites, and other cultural heritage sites, but it may chance find any of these objects during construction.	Program may uncover previously unknown archaeological sites, objects, or curios during construction.
Ancient Monuments Preservation Rules, 2046 BS (1989 AD) with amendments		
National Foundation for Upliftment of Aadibasi/Janajati Act, 2058 BS (2002 AD)	This Act prescribes several provisions for overall improvement of the aadibasi/janajati by formulating and implementing programs related to social, educational, economic, and cultural development.	The Program affect aadibasi/janajati people.

3.1.4 Plans:

Apart from the above, there are also periodic national development plans (long term and interim) that highlight the key environmental and social policies of the government for the planning period. Such plans provide guidance and direction for the prevention, protection, mitigation and management of adverse environmental and social issues that emerge during project development. Relevant ones include:

- National Biodiversity Strategy and Action Plan, 2071–2077 BS (2014 to 2020AD)
- National Water Plan (NWP), 2062 BS (2005 AD)
- Nepal Environmental Policy and Action Plan, 2050–2055 BS (1993–1998 AD)
- National Plan of Action Against Gender-based Violence, 2066 BS (2010 AD)

3.1.4 Technical Guidelines, Manuals, guidelines and Tools.

Several technical Guidelines, Directives, Manuals and Frameworks have been developed which are particularly relevant to the transport sector for the purpose of environmental and social impacts management. Some include:

- Environmental Management Guidelines (Road), 2056 BS (1999 AD) • National EIA Guidelines, 2050 BS (1993 AD)
- National Environmental Health Impact Assessment Guidelines, 2002
- National Health Care and Waste Management Guidelines, 2059 BS (2002 AD)
- Road sector Occupational Health and Safety Policy (2023) documents including OHS Operational Manual and Guidelines
- Road Safety bill
- Draft Road Safety Audit Policy, National Road Crash Investigation Policy and Guidelines, and Road Crash Database Policy

The legal framework for environmental and social systems is backed by a set of comprehensive laws, regulations, technical guidelines, and standards, that apply to this program.

The umbrella environmental legislation (EPA, 2019 and EPR, 2020) sets the process and procedures to avoid adverse effects on forest, natural habitats and physical cultural resources resulting from Program activities or investments. The areas of forest, natural habitat and physical cultural resources of historic

and archeological significance have been screened as special areas requiring prior permission and approval from the concerned authorities even for the studies for project design (EPA clause 10 & 11, EPR, Chapter 6, and Rule 32 to 34). The projects outside the natural habitat and physical cultural resources areas should undergo BES, IEE and EIA level process as per the environmental screening process stipulated in the EPR (EPR Chapter 2, Rule 3, Schedule 1, 2 and 3). Prior information to the stakeholders regarding the project to register the comments and concerns of stakeholder is one of key procedures to be complied as per EPR provisions (EPR, Chapter 2, Rule 4(2), 6 (1), and 6 (4)). Apart from this, EPR Chapter 2, Rule 8 (8) and 8 (9) mandates submission of the recommendation letters from the local governments of the project implementation areas (Rural Municipalities and Municipalities) while forwarding BES, IEE and EIA documents for approval to the concerned authority and Ministry.

The document formats for TORs and reports (BES, IEE and EIA) prescribed in EPR Chapter 2, Rule 5(1), and Schedule 6, and 7 and 8 and schedule 8 Section 8, 9 10 and 11, stipulate that alternative analysis, mitigation measures and monitoring plans be integral parts of the TOR and the respective BES, IEE and EIA documents. This implies that the avoidance, minimization and compensation principles will be followed in the EIA process during project preparation and design phase and possibly left for the forthcoming manuals and guidelines under the legislation. The EIA guideline (1993) predating the umbrella environmental legislation (EPA and EPR) and sectoral manual/guidelines/directives (Environmental Management Guidelines, DOR, 1997; Interim Guidelines for Enhancing Poverty Reduction Impact of Road Projects, DOR, August 2007, updated Environmental and Social Management Framework, 2024) postdating the umbrella environmental legislation have covered the key elements of the World Bank's Policy/Directive on "Program-for-Results Financing", 2024 (these are discussed in the sections below).

These laws and policies provide adequate measures to safeguard worker welfare, health, and safety. The absence of specific OHS legislation limits their effectiveness in practice. BIMPII bid documents mandate OHS and labor law compliance. Some laws and policies exist to protect marginalized communities and provide safety and legal support to women against gender-based violence and workplace exploitation. Their incorporation however in project E&S risk assessment and management is not mandated and only required by donor funded projects.

The Land Acquisition Act (LAA) is the primary policy governing land acquisition and involuntary resettlement in Nepal. It authorizes the Government of Nepal to acquire land with compensation and regulates compensation to private landowners for land and other assets. The LAA provides for cash compensation as the mitigation measure for private land and property acquisition, without provisions for in-kind compensation or determining replacement cost for impacted assets. It does not require a resettlement plan, consultation with impacted people, or disclosure of the plan, nor does it prescribe mitigation or livelihood restoration measures. While the LAA clearly outlines responsibilities for land compensation payment, it does not address planning and implementing livelihood restoration and physical relocation. However, the Department of Roads (DOR) has developed its own Environmental and Social Management Framework (2023), which exceeds LAA mandates by considering all options for livelihood restoration and involuntary resettlement, including cash compensation. It also specifies planning requirements and institutional setups to address land acquisition and resettlement impacts.

3.2 Institutional systems for environmental and social management

The existing government institutional setup to address environmental and social impacts in the transport sector comprises institutions at both central, provincial (regional) and local levels. The environmental and

social policies are usually framed and promulgated by the central level institutions such as National Planning Commission and the Ministry of Forest and Environment, while other Ministries and line departments at central level provide sectoral inputs for the national environmental and social policy setting. According to Environmental Protection Rule (2020) approval for the BES and IEE documents are given directly by the MOPIT. For the EIA document of ESIA level, this ministry forwards the document with its comments to Ministry of Forest and Environment (MOFE). The MOFE is the final authority for the approval of EIA level assessment documents. The GESU of the DOR is the responsible entity within DOR for management of project environmental and social issues, from planning to implementation. The line institutions at district level and in the field are primarily assisting with planning and implementation of environmental and social measures at operational level.

A highlight of the various institutions, mandates and responsibilities is briefly summarized below. **Central Level:**

National Planning Commission (NPC)

NPC is the highest policy making body which is involved in formulating overarching national development policies and plans of short-, medium- and long-term including transport and bridge subsector. As per the mandate, its role in the formulation of the national policies on environment and social issues is paramount apart from setting priorities of the developments projects including bridges. NPC has prepared Land Acquisition, Rehabilitation and Resettlement Policy (LARRP), 2015 for infrastructure development projects. For BIMP III, NPC conducts dossier verification and submission to Bank for reimbursement.

The Ministry of Forest and Environment (MOFE) and the Ministry of Physical Infrastructure and Transport (MOPIT) are the key Ministries directly involved in the ESIA process of transport sector including Bridge Projects. Department of Environment (DoEnv) under MOFE is the apex authority responsible to enforce the implementation of environment related acts, regulation, legislations, standards and environmental management plan and can penalize the developers and prohibit development works not complying the pollution standards and EIA approval conditions. MOFE is also the authority for setting up pollution standards for emissions, effluents and other discharges and approves final EIA study report of the projects. The Planning, Monitoring and Evaluation Branch under the MoPIT is also directly involved in the ESIA process of bridges. Its roles include review of EIA documents of Bridge Projects and participate in EIA review meetings of MOFE. MoPIT has authority to approve BES and IEE Reports. EPA/EPR empowers MoPIT for monitoring and evaluation of the Bridge Branch as per approval conditions and provides directives to the developer in case of noncompliance.

The Ministry of Forest and Environment (MOFE) including the Department of Forest and Department National Parks & Wildlife Conservation (DNPWC) and other line ministries (Ministry of Culture, Tourism and Civil Aviation; Department of Archeology) have only indirect roles in the development of transport sector projects including bridges. Generally, other line ministries come only in picture and involve directly when a project is likely to be located under their jurisdiction or in the protected area or in the cultural site. Approval of forest clearance is the authority of the Ministry of Forest and Environment.

The Bridge Branch and the Geo-environment and Social Unit (GESU). The Bridge Branch within DOR has the primary role in planning, design, implementation and monitoring of the Bridge Projects on Nepal's Strategic Roads Network. The Bridge Branch has the responsibility of preliminary planning, pre-feasibility study and alternative analysis, feasibility study and design. GESU is headed by a chief who reports to the Deputy Director General of DOR. Its members consist of regular DOR staff (including

environment and social Officers) and consultant experts who are recruited from the market to provide support on fixed terms. GESU is entirely funded under DOR's budget.

- GESU has following roles in the management of BIMP environment and social aspects: Environmental and social screening of Bridge sites (works) to verify their eligibility for inclusion under the Program as per ESMF and other relevant provisions
- Commission BES, IEE and ESIA (conduct or outsource experts or consulting firms to conduct BES, IEE and EIA) studies
- Review Scoping Document/Terms of Reference of BES/EIA/IEE study and forward BES, IEE or EIA study documents to MoPIT with its consent and comments on the documents for approval processing
- Participate as concerned stakeholder in the review meetings of Scoping document, TOR, BES, IEE and EIA documents organized by the MoPIT and MOFE and give their consent.
- Co-ordinate with the sectoral and cross- sectoral ministries and departments for approval and permits such as MoFE, Ministry of Energy Water Resources and Irrigation, Department of Forest and Soil Conservation, Department of National Parks and Wildlife Conservation, Department of Water Resources and Irrigation, Department of Archeology etc. during project preparation and implementation
- Conduct or outsource to conduct environmental and social monitoring of the project under implementation, and
- Public disclosure of the ESIA process and documents
- Supervision and monitoring of project interventions under implementation as per project provisions and recommend for corrective actions
- GRM support
- Recordkeeping of activities under its jurisdiction

Regional Level:

The Regional Directorate (RD) of DOR does not have any role in the ESIA process and subsequent stages of Bridge Branch construction. It has limited role in supervision and monitoring of the projects implemented in the region and is a coordination link between the DOR and the division offices under its jurisdictions but not necessarily for project planning, execution and monitoring.

DOR Division Offices:

The DOR Division offices have no major roles in the ESIA process during project preparation stage. However, their accountability is quite high because of the direct involvement during the implementation stage of Bridge Projects. As a primary implementing organ of the Bridge Branch, the division offices have roles in construction supervision. By implication, the Division Offices are also accountable for environmental and social impact supervision and mitigation on day-to-day basis. As it is involved in the implementation of the Bridge Projects, incorporation of the environmental costs of civil works in the bid document, based on the approved BES/IEE/EIA documents as well as ESMP, is the responsibility of Division Office. It may ask for GESU involvement in this process. Apart from this, the Division Office is responsible for co-ordination with the district forest office and other sectoral line offices at district as well as with the local communities for approval, permission, and execution of the project as required by the project planning and design.

On social aspects, implementation of any social plans that includes land and property acquisition, compensation payment and delivery of various assistance measures, should be performed by concerned division offices in close co-ordination with the District Administration Office, District Survey Office, Land Revenue Office including GESU at the center. It also serves as front line grievance handling agency in case of conflict and dissatisfaction of the affected parties. **District Line Agencies:**

The district line agencies including the District Administration Office (DAO), District Land Survey Office (DLSO), and District Land Revenue Office (DLRO) are crucial agencies for the valuation and determination of the compensation rate for each affected owner. Chaired by the Chief of District Administration Office (CDO), the CDC may consist of members from DLSO, DLRO and DCC the legal authority to handle all issues related to land compensation as per the Land Acquisition Act, 1977. The Project Chief is also the member of the Committee, and the representatives of affected people may attend the meetings as invitee members.

Consulting Entities:

Due to limited capacity, planning, design and sometimes monitoring of environmental and social mitigation measures are often contracted out to specialist consulting firms to complete. Therefore, the role of consulting groups is critical in the design, supervision and monitoring quality of Bridge Projects.

Restructuring of State:

Government of Nepal has adopted 753 local body system since May 2017 fulfilling the requirement of the new constitution of Nepal 2015. All old municipalities and village development committees (which were more than 3900 in number) are restructured in total 753 new Municipalities. All old 75 district development committees (DDC) are also replaced by new 77 District Coordination Committees (DCCs) which will have much less power than that of the DDCs. The VDC offices have now been turned into ward offices of the respective village councils as at least two VDCs were merged to form a village council. The VDC's authority has now shifted to the ward office.

According to Constitution of Nepal 2015, Structure of State and distribution of Power related to third BIMP program is as follows.

Federal power (Schedule-5):

- National and international environmental management, national parks, wildlife reserves and wetland, national forest policies and carbon services.
- National transportation policies, Management of railways and national highways and environment adaptation and sites for archaeological importance and ancient monuments.

State Power (Schedule – 6):

- State highways, use of forest and waters and management of environment within the state.

Local level power (Schedule-8):

- Local road, rural roads, agro road, Protection of watershed, wildlife.

Concurrent powers of Federation and State (Schedule-7):

- State Boundary River, waterways, environment protection, biological diversity, Industry, mines and physical infrastructure.

Concurrent powers of Federation, State and Local Level (Schedule-9):

- Forest wildlife, birds, water use, environment, ecology and biodiversity.

The number, role and responsibility of Ministries and Departments under new federal structure are yet to be finalized from parliament. Similarly, environmental legislations related to addressing the transportation system in Federal/State and Local government are also not finalized. At present, Environmental Protection Act 2019, Environmental Protection Rule, 2020 and Forest Rule 2022 are the major umbrella legal documents to address the environmental sector.

Institutional capacity building of state and local government towards the application and adaptation of environmental aspects in development projects is a challenging task to government of Nepal in future. Inter-agency cooperation and collaboration activities and level of environmental conservation awareness is still weak in local level and state level government system.

The local government bodies have started their services across the country as municipal councils and rural councils while preparations for provincial and federal bodies are currently ongoing.

4. Assessment of the program vis – a- vis PforR Principles

The existing government policy and legal framework on the management of social and environmental impacts generally reflects the PforR principles relating to social and environmental effects. The EPA, 20197 and EPR 2020 is an umbrella environmental act and rules in the country. The EPA/EPR combined with other acts (Forest, National Park & Wildlife Conservation, Aquatic Animal Protection, and Ancient Monument Preservation) cover most of the key principles defined in para 9 of Bank Directives on Program-for-Results Financing (2024) for environmental and social systems assessment. In essence, the policies and laws, put together, provide guidance and directions for avoiding, minimizing or mitigating potential adverse impacts on natural resources and important natural habitats, for promoting environmental sustainability as well as for ensuring stakeholder participation and information while planning and implementation of development projects/activities. The guidelines and directives mentioned in the previous chapter provide general guidance regarding communities and workers’ health and safety in road construction.

The following is an assessment of the GON policies on management of environmental and social impacts relevant to the transport sector, specifically the SRN Bridge Program, compared with the principles and elements in World Bank’s Policy/Directive on “Program-for-Results Financing”, 2024 to be followed for PforR operations. Nepal’s environmental and social management systems that applied to the SRN Bridge Program consist of national legal policies and sector guidelines that are broadly consistent with World Bank’s Policy/Directive on “Program-for-Results Financing”, 2024. However, when reviewed separately, individual laws or policies, may not reflect the entirety of World Bank’s Policy/Directive on “Program-for-Results Financing”, 2024 principles. Some gaps do exist and some lack more specific elaborations. This is particularly so in the case of managing social impacts, such as impacts on those without land title and compensation at replacement cost for structures.

In recognition of these differences, DOR has bridged gaps and provided specific guidance in these lacking areas for its road operations through revising and issuing an Environmental and Social Management Framework. The DoR ESMF has been revised to integrate essential E&S elements from the requirements of DPs, including WB and ADB under BIMP II, and has been endorsed from the ministry at the secretary level. This document will serve to guide the proposed Bridge Program (BIMP – III) to manage environmental and social issues in accordance with the principles of Bank Directives on Program-for-Results Financing 2024. The ESMF represents a progressive step towards adopting these principles at national policy level.

Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity
Core Principle #1: Program E&S management systems are designed to (a) promote E&S sustainability in the Program design; (b) avoid, minimize, or mitigate adverse impacts; and (c) promote informed decision-making relating to a Program’s E&S effects		
The National system requires EA categorization based on size and capacity thresholds to determine the preparation of BES, IEE, and EIA. Although E&S screening is not mandated, the DoR has adopted a sector-level ESMF for roads and bridges, promoting screening for all sub-projects.	Per the national system, only major bridges or those in sensitive sites (natural habitats or areas with cultural resources) require an EIA. Bridges outside these areas or not classified as major are exempt from environmental due diligence, overlooking risks such as impacts on river morphology,	All bridges proposed under the third BIMP will be subjected to early screening of potential environmental effects. The Program will help resource GESU with manpower and budgetary allocation to enhance E&S implementation and monitoring support.

	aquatic life, and forests. Most sub-projects under the program will likely fall	
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Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity
For projects subjected to BES, IEE, or EIA, the EPA 2019 and EPR mandate the identification of measures to mitigate unavoidable adverse impacts. The DoR ESMF addresses risks and impacts during all project phases. Per the national regulations, BES/IEE/EIA must disclose information, consult and seek stakeholders comment for seven days. The National system clearly defines institutional responsibilities and resources for implementation. Project proponents are responsible for implementing and funding the mitigations in BES, IEE, or EIA. DoR has experience in implementing environmental and social management procedures for road sector projects, including bridge construction, as required by donor partners. The program has committed resources for effective management and monitoring of impacts and risks. Additionally, adequate environmental and social staff, including specialists in various fields, will be hired to support the Geo-Environmental and	under schedule 2, not requiring prior environmental clearance per the country's EIA regulations. This necessitates early screening of potential effects and identification of mitigation measures for unavoidable adverse impacts. Stakeholder engagement in identifying priority E&S risks and during project implementation has been suboptimal in previous programs. Although an online GRM portal exists, its availability and functionality need to be better communicated to all stakeholders.	Further digital systems will be established for the Gate Review Mechanism, E&S and OHS reporting The Program will also focus on strengthening and institutionalizing the stakeholder consultation process and the existing grievance redressal mechanism to make it easily accessible and responsive to the needs of the stakeholders.

Social Unit (GESU) for effective risk management.		
Core Principle #2: Program E&S management systems are designed to avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program. Program activities that involve the significant conversion or degradation of critical natural habitats or critical physical cultural heritage are not eligible for P for R financing		
Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity

Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity
The existing regulatory framework mandates assessment and management of activities within cultural, historical, protected, and sensitive sites, requiring prior approval from competent authorities. The Forest Regulation 2022 requires analysis showing various alternatives to avoid and minimize forest area and resource loss. The EPR schedules 1, 2, and 3 EIA, screens for project effects on physical and cultural resources. Projects in historical, cultural, and archaeological locations require an EIA regardless of size. The Ancient Monument Protection Act, 1956, requires prior approval from the Department of Archaeology for development works, restricting the transfer and trade of objects over 100 years old. The DoR ESMF Chapters 2 and 4 exclude sub-projects that significantly convert or degrade critical natural habitats or cultural heritage sites. The program also excludes activities	Sub project locations impacted by multi hazards (earthquake, landslides, recurrent floods) would require site specific design considerations. Nepal. is generally vulnerable to extreme climate conditions and various natural occurrences	The DoR ESMF would act as a guidance document for all future sub projects ensuring environmental and social impacts are adequately addressed. The program includes appropriate measures for early identification and screening of potentially important biodiversity and cultural resource areas.

adversely impacting land and natural resources under traditional ownership or customary use.		
Core Principle #3: Program E&S management systems are designed to protect public and worker safety against the potential risks associated with (a) the construction and/or operation of facilities or other operational practices under the Program. (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials under the Program; (c) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.		
Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity
The existing regulatory labor Act (2017), Labor Rules (2018), Child Labor (Prohibition and Regulation)	Specific provisions for the projects located within areas prone to natural hazards has not been	Contract management on E&S conditions provided in bid and contract document need to be
Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity

Act, (2000), Child Labor (Prohibition & Regulation) Rules, (2006), mandate health and safety compliance, workers safety under all sub projects and is regulated by the State Labor Department. The existing regulatory framework adequately covers Hazardous materials handling, storage, and waste disposal handling. In general, worker and public safety aspects for infrastructure are managed through provisions in the bid/contract documents for contractors. The DoR developed Occupational Health and Safety (OHS) guidelines under BIMPII, with distinct costing in BOQs, and updated these in the DoR ESMF for BIMP III. Chapter 10 of the ESMF includes provisions for community safety and occupational health worker mitigation.	detailed, however, such areas are emphasized for avoidance in the project planning and preparation stage in the Public Work Directive, and ESMF. In the absence of separate legislation on occupational health and safety (OHS), these provisions have not been able to adequately to address OHS issues. Experience in the road and bridge sector, suggest that effective implementation of these provisions varies: these are implemented partially in many cases as contractors' compliance and commitment vary. While the systems exist and are in place, it is needed that the enforcement need to be strengthened. The provisions would need to be strengthened including penalty clause for non-compliance or delays in implementation of environment and social safeguards.	strengthened and penalty clauses for non-compliance enforced. The program provides an opportunity for embed or institutionalize the Labor Department of the Ministry of Labor, Employment and Social Security to monitor compliance with labour standard. third-party audits would monitor and report on labor standard compliance, community health and safety risks, and risks related to SEA/SH during the construction phase.
Core Principle #4: Program E&S systems manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement and assists affected people in improving, or at the minimum restoring, their livelihoods and living standards		
Strength	Weakness / Gaps	Suggestions to fill gaps/ Opportunity

The Land Acquisition Act (LAA) provides compensation to PAPs for impacted assets, including land, at market value. It includes limited provisions for grievances, information disclosure, and business loss due to land acquisition.	Under the existing legal framework, landowners without titles, informal land users, occupiers, or usufructuaries are not entitled to resettlement assistance. The Land Acquisition Act (LAA) does not provide in-kind compensation and livelihood restoration of people impacted by	Screening, monitoring, and reporting processes will be established to ensure activities that involve (a) acquisition of land resulting in significant loss of land/ livelihoods/ access, use of forced eviction of informal settlers/ users of land and permanent restrictions
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Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity
The DoR ESMF includes a Resettlement Policy Framework (RPF) to guide land acquisition and resettlement. Chapter 8.1.1 outlines measures to avoid or minimize resettlement impacts, including in-kind compensation and livelihood restoration for affected people. Chapter VII mandates public consultations, ensuring affected people are informed and consulted on resettlement and compensation options. Restoration of damaged public infrastructure is crucial for maintaining or improving affected people's livelihoods. ESMF Chapter 5.3.3(d) emphasizes the need to restore infrastructure like irrigation canals, water supply schemes, schools, health posts, trails, and cultural sites. Section 5.5 and Table 5.9 outline preventive and mitigative measures. The program excludes projects that do not comply with the DoR's RPF, including significant land/livelihood loss,	land acquisition and involuntary resettlement. Proposed bridge locations and road constructions may lead to permanent or temporary restrictions on private or encumbered government land, causing physical and economic displacement of local communities or individuals.	on access/ usage of resources— are excluded from the Program Resettlement Policy Framework (RPF) developed for the overall program establishes entitlements of all categories of affected persons. It addresses the gaps in the national legal framework and aligns with the international best practices and requirements of multilateral/ bilateral funding agencies.

physical displacement of Indigenous People, and forced eviction of informal settlers.		
Core Principle #5: Program E&S systems give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities (hereafter referred to, interchangeably, as Tribals, Tribal Groups or Tribal Populations), and to the needs or concerns of vulnerable		
Strength	Weakness / Gaps	Suggestions to fill gaps/ Opportunity
The Constitution of Nepal, 2015, provides significant protections for Indigenous Peoples (IPs), including rights to equality,	There is no overarching regulatory framework to implement constitutional principles or international commitments arising from the ratification of ILO 169 or signing of UNDRIP 2007.	The program offers an opportunity to Strengthen and institutionalize the stakeholder consultation process. Mapping and engaging with key stakeholder including
Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity

language, culture, heritage, and social justice. Nepal has ratified ILO Convention 169 and is a signatory to the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). The NFDIN Act aims to preserve and promote the traditional knowledge and skills of indigenous nationalities for vocational use. The Public Work Directives (PWD) address anticipated adverse impacts on IPs and require their inclusion through consultations and participation. Chapter 8 of the DoR ESMF includes the Resettlement Policy Framework, Indigenous People Development Framework, and Vulnerable Community Development Framework. These documents ensure IP rights are protected, and they are compensated for land or property use in a socially and culturally acceptable manner. Chapter 8.2.4 mandates Free, Prior, and Informed Consultations/consent (FPIC), detailed in Annex 8.12. Chapter 2.2 of DoR ESMF describes government policies supporting vulnerable communities, including landless, marginal farmers, and ex-bonded laborers. Annex 8.5 suggests support measures for vulnerable groups, ranging from training to replacement land and cash assistance to improve or restore livelihoods.	FPIC is not recognized as a process in Nepal's legislation framework. The existing GRM systems and stakeholder participation need to be strengthened with dedicated desk and staffing, awareness raising and ensuring accessibility and, confidentiality.	vulnerable and marginalized groups The Indigenous People Development Framework IPDF shall be implemented where relevant to protect the rights and interests of the Indigenous people and vulnerable.
Core Principle #6: Program E&S systems avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes		
Strength	Weakness / Gaps	Suggestions to fill gaps/opportunity

Strength	Weakness / Gaps	Suggestions to fill gaps/ opportunity
None of the program activities are in post conflict areas, or lead to worsening social conflicts, or areas subject to territorial disputes.	Not Applicable	Not Applicable

5 Program Performance and Capacity Assessment

5.1 BIIMP II implementation performance and lessons learned

E&S Implementation performance rating (Satisfactory): BIMP-II completed as planned in July 2024 - substantially achieving its objectives. Progress towards achievement of its PDO is rated “moderately satisfactory” whereas environmental and social performance was rated "Satisfactory" by the final review and support Mission.

Risk screening, assessment and management: The program managed its E&S risks following the conduct of an Environmental and Social Systems Assessment (ESSA) and adopted a road sector wide ESMF. This ESMF was updated via the IPF component to address bridge-related risks and impacts, and to enhance provisions for Occupational Health and Safety (OHS), labor management, child labor prevention, and capacity-building. Further update to the ESMF were made by DoR to incorporate essential E&S elements that would meet the requirements of multiple Development Partners (DPs), including the World Bank (WB) and the Asian Development Bank (ADB) for common use. This framework has been reviewed and accepted as meeting the requirements with Environmental and Social Framework and also reflects the core principles and elements of the Bank Policy/Directives on Program-for-Results Financing. The ESMF has been endorsed by the Ministry of Physical Infrastructure and Transport (MoPIT) and disclosed in January 2025.

Most of our sub-projects fell under schedule 2 wherein full EIAs were not required as per the country's EIA regulations. The bridges lie outside the sensitive/location, biodiversity conservation sites (National Parks, Wildlife Reserve, Hunting Reserve, Conservation Area, and Buffer Zone). The Program of Actions on E&S ensured adoption of site screening and the completion of site-specific management plans. The individual safeguard consultant hired by Bridge branch were responsible for the screening to determine the level of Environmental assessment required. The program prepared 6 IEE and 46 BES for the 2-lane bridge construction. 58 sites specific ESMPs were prepared for the Major bridge maintenance and 110 for the road safety upgrade. The DoR has also implemented the Gate Review process by GESU to standardize E&S reviews of procurement documents to validate incorporation of safeguard related activities in bid document and contract documents Implementation of EMP were secured by incorporating safeguard measures into the bill of quantities (BoQ). Owing to this approach, EMP measures automatically became part of the contract document. Compliance to EMPs were monitored and supervised by the safeguard's consultants.

Land acquisition and resettlement impact mitigation: The new bridge construction did require the acquisition of land. However, for some of the bridge approach road construction, 26 structures impacting 24 affected persons within RoW were relocated. The DoR prepared and implemented A relocation plan to compensate for these impacts. While the numbers of PAPs are minimal, securing funding took considerable time because, impacts for non-title holders required cabinet approval since compensation for these categories of RAP are not supported by the existing legal framework. There was no report of adverse impact on Indigenous People requiring FPIC or preparation of Indigenous people plan. Additionally, there was no report on the use of voluntary land donations under the program.

OHS implementation: DoR prepared Occupational Health and Safety Policy- 2023 documents including OHS Operational Manual and Guidelines which was approved by MoPIT on November 8, 2023, and disclosed on the department's website. With this the DoR streamlined the OHS Policy documents in its civil works contract operations and management. bid documents were updated with provisions for OHS cost in BoQs, as well as OHS compliance rating mechanism for payment under bridge contracts. A format

for Occupational Health and Safety Plan was prepared and implemented at construction site; respective contractors submitted the OHS plan on a quarterly basis to the concerned offices; monitoring carried out from Bridge Branch, project offices, GESU. The DoR has initiated the record of near miss and incident data of construction site and made public through department website for awareness raising and education; In line with the OHS provisions, orientation/awareness training was provided at each construction site including department and contractor personnel. In total 19 session with 599 participants was conducted for each of the 6 project office sites. Similarly, SEA/SH training was also conducted for Central Level (Department of Roads, Bridge Branch), Federal Road Supervision and Monitoring Office (FRSMO) and Construction Sites (Labor force). A total of 170 participant of which 78% are male and 22% female.

Grievance Mechanism: The program made use of web-based Grievance Redress Mechanism system to lodge grievances, get direct feedback, record, track and follow up delayed actions. The GRM system was also managed by each project office and at each construction bridge site. Altogether, 23 grievances were recorded related to construction of bridges under the program and other grievances out of the program scope were directed to concerned department accordingly. All 23 grievances (100%) were resolved not exceeding more than 9 days in the program period. GRM reporting however lagged at the latter stages due to the absence of a dedicated GRM desk officer.

Implementation challenges: Implementation challenges included (1) significant delays in conducting and approving E&S studies, poor inter-departmental coordination affecting tree clearance and utility relocation which consequently increased the project's time and cost. Some bridges had to be dropped altogether owing to this delay. (2) DoR implemented its ESMF (RPF) which requires compensation to eligible non-title holders which is not supported by the government framework. To secure approval for non-title holders who had structures along the project ROW requires cabinet approval which was Challenging and took considerable time for approval in securing compensation for the relocation of structures within the Right of Way (RoW) for non-title holders. (3) Again, GRM reporting lagged at the latter stages due to the absence of a dedicated GRM desk officer. (4) While training on OHS was conducted, enforcing PPE use and effective OHS provisions required continues checking than the existing staff capacity supported. General knowledge and understanding of safeguard requirements for the use of the Bridge Site Monitoring System (BSMS) also need more strengthening.

Key lessons learned: A key lesson learned is (1) the need for a dedicated fund for land acquisition, structure relocation, and tree removal. If possible, this cost should be included in the Bill of Quantities (BOQ) to minimize resource gaps during project execution and saving times. And should be implemented before construction. (2) Early E&S screening of sub-project was helpful for identifying potential safeguard issues and guiding their integration into BoQ for implementation. The Gate review process by GESU is effective mechanism to validate incorporation of safeguard related activates in bid document and contract documents but this should be digitized. (3) Institutionalizing the GRM with a dedicated help desk and officer for the efficient management of the web-based GRM, along with awareness raising about the GRM system through media can enhance its effective utilization. (4) Positive aspects of the project included pre-construction readiness activities, prompt E&S screening, gate review processes by GESU, training and capacity building, inclusion of safeguard costs in the Bill of Quantities (BoQ) and supporting community programs.

5.2 Environmental Impact Management system

From perspective of policy and legal provisions and operational guidance, Nepal's environmental system is consistent with World Bank's Policy/Directive on "Program-for-Results Financing", 2024 principles

and elements. However, the application effectiveness of the environmental provisions in the SRN road, particularly in bridges, and hence the operational performance in the ground is mixed. Performance is better in donor funded activities than the activities undertaken by government own resources. This is summarized below.

Environmental Screening, BES, IEE and EIA: As mandatory provisions of DoR ESMF, all BIMP bridges are subject to environmental and social screening, which also checks GoN EPR provisions to decide if a proposed project requires a BES, EIA or IEE leading to development of an ESMP as needed. Although operational guidelines require screening at an early stage (such as during project identification/prioritization and during pre-feasibility), in practice, most of the environmental screening is done at later stages for GoN-supported bridge works. In the case of the donor supported project, however, screening is done at an early stage to identify potential risks and impacts. Environmental and Social Screening of the bridges is mandatory as per Bridge addendum (2013) to DoR, ESMF as well. The screening gives preliminary ideas on potential risks associated with subproject construction such as impact on existing environmental settings and on physical cultural resources including further requirement of BES, IEE or EIA. BIMP-I and II excluded interventions in legally designated protected and sensitive areas.

Also, there have been instances of delayed approval and/or implementation of BES, IEE and EIA in relation to project planning and design under BIMP II. Likewise, GESU's in-depth engagement in the entire process has been observed limited, although GESU is the expert agency in DOR for environmental and social matters. The proposed "gated approach" for BIMP-III is envisaged to strategically address such issues.

Alternatives Analysis and avoidance of natural habitat and cultural sites: Only projects subject to a BES, IEE or an EIA would have discussion on alternatives. The scope of alternative analysis is, however, limited commonly to design alternative and 'no project' alternative. The site alternatives are rarely covered. Even without alternative analysis, prior approval from the DNPWC is required if there will be project activity in the protected area, or from Department of Forest and Soil Conservation (DoFSC) if there will be activity in the forest: this generally promotes avoidance of known protected area and important forests during planning. In almost all Bridge Projects, site/ premise of physical cultural significance is avoided due to social and cultural sensitivity.

Assessment of impacts and identification of mitigation measures: The Brief Environmental Studies (BES) or Initial Environmental Examination (IEE or ESIA) of roads and bridges, in general, identify potential environmental and social impacts from the project activities. Identification of impacts is focused mainly on the direct impacts; indirect impacts are rarely or weakly covered. Induced, cumulative and trans-boundary impacts are focused less. The mitigations measures recommended by the BES, IEE or ESIA lead to site specific plans/details for implementation. In the donor funded roads and bridges such as those constructed by the World Bank financed Rural Sector Development Program (RSDP), and BIMP, the ESIA is prepared during feasibility stage and Site-specific Environmental and social Management Plans (ESMPs) are prepared. Although road BES, IEE or EIA do not cover bridge specific issues such as risk of landslide and flood, however, many of the mitigation measures identified by roads' EAs are applicable to bridge construction also.

Implementation of mitigation measures: Implementation of the mitigation measures is the responsibility of the project proponent, the Bridge Branch in the case of BIMP bridges, and the contractor. The environmental mitigation cost is calculated on lump sum basis – specific mitigation costs for various activities/ items are rarely included in the contract bid document. The late EAs with respect to project detailed planning and design, lack of specific mitigation detail/plan, and lack of specific cost item in the bid document are some causes for the weaknesses during implementation. Field observation of some of the selected Bridge Projects, carried out as part of this assessment, reveals poor environmental management and mitigation during construction of bridges. Examples of poor management practices include improper mining of riverbed sand, lack of slope stabilization for protecting bridges from the high risks of slope failures, haphazard disposal of construction and camp wastes, no use of protective gear, and the occupation of community forests. Experiences in the roads and bridge construction show that workers'

health and safety is not a priority to the contractors, and not commonly practiced by the workers where contractors provide safety items.

Environmental Monitoring: DOR/GESU has initiated environmental and social monitoring in a limited number of road projects, particularly in donor funded roads such as RSDP and BIMP-I and II. This has been possible due to encouragement and support from the donor funded project. In some donor funded projects, local body and community are also involved in environmental monitoring. Although the EIA or IEE or BES provides cost estimates for monitoring by different entity, these are not-necessarily allocated by the project except in the donor funded project. Lack of contractual provisions of recruiting supervision and monitoring environmental specialist is another reason of poor implementation of environmental management plan in road and bridge construction in Nepal.

Information Disclosure and Stakeholder Consultation: The roads and bridges using government resources require formal information disclosure and stakeholder consultation, if a BES, IEE or ESIA is necessary. This may be done as a formal requirement, such as getting no-objection/ support letter from the respective Rural Municipality, Municipality rather than identifying and addressing any genuine concern. Donor funded projects, such as BIMP and RSDP, follow more elaborate system for information disclosure and consultation even if a BES, IEE or EIA is not formally needed. The disclosure and consultation requirements in donor funded projects are laid out in the respective ESMF.

Impact of Climate Change and Adaptively: It is essential to mainstream and prioritize resilience measures while updating the DoR's hydrology and hydraulic analysis guidelines to account for anticipated changes in climate parameters. Adopting mitigation measures such as bioengineering and slope stabilization is crucial for protecting bridges from the high risks of slope failures. Building on the developed resilience guidelines, BIMP-III should integrate these resilience measures into bridge designs, construction, and maintenance to ensure functionality under adverse conditions.

Environmental and social aspects should be considered during the early-design phases to facilitate the timely implementation of mitigation measures and resettlement action plans. To achieve this, BIMP-III could support the hiring of qualified supervision consultants and the adoption of standard site supervision templates, such as quality assurance plans and progress reporting documents. Similarly, avoidance of inadequate staffing in the central and field offices and frequent change in leadership in the BB will accelerate the project implementation.

5.3 Social Impact Management System

Corresponding to its country system in managing social impacts in transport (bridge and road) investments, Nepal runs a dual-track performance standard in implementing its policies in addressing social impacts in bridge programs. The country bridge program follows the requirements and procedures of the country legal policy framework, the key law of which is the Land Acquisition Act of 1977. These are legally binding and enforced. However, the Environmental and Social Management Framework for DOR is only enforced in operations that involve international financing and are subject to supervision by international financiers.

Consequently, where requirements of national laws and the ESMF overlap, these requirements are followed up in project planning and implementation action plans. In the areas of gaps between the national

laws and DOR ESMF, such as assistance for those without titles and compensation at replacement cost without depreciation, the extra requirements in the ESMF that top up gaps in national laws and policies are only implemented in internationally financed operations. Key issues in this regard and their performance are summarized below:

- ***Free, prior and informed consultation of indigenous communities.*** This principle is reflected in many scattered provisions of various government policies. Nepal has also recently ratified ILO 169 on Indigenous and Tribal People's Rights. Specific requirements and procedures are clearly prescribed in the DOR ESMF. However, its implementation is limited more to internationally financed operations like the BIMP. For example, vulnerable community development plans as required in the ESMF are not prepared for domestically financed operations where consultations with indigenous communities are limited to interventions related to land acquisition under the Land Acquisition Act and required under environmental policies.
- ***Assessment of impacts of land taking, including on those without titles.*** This is mandated under the Land Acquisition Act and is generally enforced. However, the LAA does not recognize those without titles for compensation or assistance. The ESMF recognized and addressed this policy gap, as did the Land Acquisition, Resettlement and Rehabilitation Policy (LARRP), 2015 of GoN; leading to preparation of required social management plans (SMPs). However, their implementation is limited so far to internationally financed operations like the BIMP, and other road sector operations.
- ***Compensation and assistance to restore livelihoods, including those without titles.*** Restoration of livelihoods for those affected is not mandated as an objective in the Land Acquisition Act, but the spirit is reflected in several relevant policies and is clearly stated in the DOR ESMF. The performance, though, differs in internationally and domestically financed operations. In domestically financed operations, the mitigation measure is limited to cash compensation as per the Land Acquisition Act, without any additional assistance if required for livelihood restoration. In internationally financed operations, including BIMP-I & II, this has been followed up diligently through project planning and implementation process.
- ***Compensation at replacement cost.*** The LAA requires compensation for land at market price and sets a procedure for its evaluation. The evaluation is carried out by a district level compensation fixation committee charged with this responsibility under LAA, based on the average transactions in the past one year, regarding market practices. General practices indicate that this is getting close to real market price. The national legal policies mandate market prices for structure compensation, which factors in depreciation. This policy difference is addressed in the DOR ESMF, which requires compensation at replacement cost.
- ***Planning documentation.*** Under the national legal policy requirements, social issues, such as land and indigenous people's issues are generally an integral part of the environmental and social screening, assessment and documentation process. The DOR ESMF is requiring a separate planning and documentation process, leading to the development of project Resettlement Action Plans (RAPs) and Vulnerable Community Development Plans (VCDPs). The VCDPs are being applied, however, mainly to internationally financed operations.
- ***Grievance management system (GMS).*** For investment operations under DoR, there is an electronic grievance redress system in place at project level in Nepal. The formal system is also the legal system with courts which is open to all citizens regardless of what grievances or sectors. At operational level, grievances are reported and resolved with local administrations and DOR project offices in the field. There is no fixed timeframe for resolution though. Considering the limited impacts and small scale of investments, this formal system seems to be sufficient.

5.4 Budget and Resourcing for E&S Management

Financial Resources

DoR/BB is committed to allocate adequate budget to GESU to support implementation of E&S activities. The available financial resource (which is inadequate in most of the cases) for environmental and social

management at the various institution levels is considered a key constraint adversely affecting the environmental and social performance of the line agencies. GESU needs continuation of financial resource allocation in each fiscal year to comply with the given mandates and responsibilities.

Human Resources

Apart from the financial resources, human resource availability to carry out the given mandates and responsibilities at all institutional level is another tremendous challenge. Officials of almost all agencies consulted informed about the inadequacy of technical manpower within the institutions to effectively carryout the environmental and social planning process, not to mention their streamlining. DOR Bridge Branch, RD and Division Offices, none has the required technical manpower in the environmental and social sector to deliver the required outputs. Given the sectoral and cross-sectoral ESIA work volume, human resources available with GESU and MoPIT is also inadequate. The GESU, with responsibility for road and Bridge Projects all over Nepal, has only two permanent Environmental inspector and social officer staffs. The overall assessment indicates that the available staffs have the knowledge and understanding of the underpinning issues of environment and social aspects of the Bridge Projects. However, they are much lacking in staff numbers and are not able to deliver the given mandates and responsibilities in managing environmental and social issues related to bridge operations. Thus, their involvement is confined to the processing of the BES, IEE and EIA/ ESIA documents of many projects which are already due for approval processing as per the law provisions (EPR, Chapter 2, Rule 9).

In the Bridge Branch, only an environmental consultant has been hired for short-term services. However, the scope of works outlined in the BIMP III specifies the need for a comprehensive team of specialists, including experts in environmental management, social impact, gender considerations, and Occupational Health and Safety (OHS). The project's scope emphasizes the importance of integrating these diverse areas to ensure a holistic approach to sustainability, social inclusivity, and safety throughout the project's lifecycle. Moreover, implementing institutions such as the road division offices and sector offices of the Bridge Branch (BB) currently lack the necessary environmental and social (E&S) expertise. This gap in capacity can hinder the effective management of environmental, social, gender, and safety aspects crucial for the success of the program. To ensure the overall success of the project, it is essential to onboard qualified E&S specialists who can address these critical challenges and support the implementation of the BIMP III scope of work. By strengthening the E&S expertise within these institutions, the project will be better equipped to meet sustainability goals, promote social inclusivity, and ensure safety throughout its lifecycle.

6. Findings and Recommendations to Strengthen the Program

Laws and policies:

Overall, the applicable national environmental policies and legal framework are largely compatible with the E&S core principles of PforR with no significant gaps. The EPA, 20197 and EPR 2020 combined with other acts (Forest, National Park & Wildlife Conservation, Aquatic Animal Protection, and Ancient Monument Preservation) provide guidance and directions for avoiding, minimizing or mitigating potential adverse impacts on natural resources and important natural habitats, for promoting environmental sustainability as well as for ensuring stakeholder participation and information while planning and implementation of development projects/activities.

Labor and child protection laws and policies provide adequate measures to safeguard worker welfare, health, and safety. The absence of specific OHS legislation limits their effectiveness in practice. Some laws and policies exist to protect marginalized communities and provide safety and legal support to women against gender-based violence and workplace exploitation. Their incorporation however in project E&S risk assessment and management is not mandated and only required by donor funded projects.

Some gaps exist, particularly in managing social impacts, such as those affecting individuals without land titles and compensation for structures at replacement cost. The LAA provides for cash compensation as the mitigation measure for private land and property acquisition, without provisions for in-kind compensation or determining replacement cost for impacted assets. It does not require a resettlement plan, consultation with impacted people, or disclosure of the plan, nor does it prescribe mitigation or livelihood restoration measures. To address these, the DoR has revised and issued an Environmental and Social Management Framework (ESMF) for its road operations, incorporating a Resettlement Policy framework which establishes the entitlements of all categories of affected persons (including non-titleholders) and is aligned with the international good practices. The RPF will guide the preparation of all the DoR investments irrespective of source of funding.

Implementation experience of previous programs

The social and environmental achievements under BIMP II lays a good foundation for BIMP III to build on including: (i) issuance and enforcement of bridge addendum to Environmental and Social Management Framework (ESMF) highlighting bridge specific environmental and social aspects. This ESMF was updated via the IPF component to address bridge-related risks and impacts, and to include provisions for Occupational Health and Safety (OHS), labor management, child labor prevention, and capacity-building. DoR has updated the ESMF further to meet the requirements of multiple Development Partners (DPs), including the Asian Development Bank (ADB). The ESMF has been endorsed by the Secretary, MoPIT and disclosed. (ii) E&S oversight was managed by the GeoEnvironmental and Social Unit (GESU), supported by specialized consultants on Environment, Social, Gender, and OHS from PIU. (iii) Project Implementation Unit (PIU) was equipped with environmental and social (E&S) expertise, supported by recruited consultants specializing in Environmental, Social, Gender, and Occupational Health and Safety (OHS). (iv) establishment of environmental and social screening, required management plan preparation and documenting them for integrating environmental and social mitigations in the engineer designs, bidding documents for all categories of bridge works, (v) revised bid documents with dedicated budget line for social / environmental work, (vi) enhanced Occupational Health and Safety provisions, (vii) environmental and social system verification by third party (viii) introduced Standard Operating Procedures (SOP) for construction sites with support from international organizations.

The capacity of Program executing and implementing agency and GESU system performance analysis shows that, while DoR has implemented several externally aided projects and is familiar with the Bank's requirements to manage social risks, the GESU who is responsible for E&S oversight is familiar with the safeguards policies but to get familiar with the ESF. Under the program, Environmental and Social consultants were engaged in the PCU but there were gaps in their coordinating with GESU that maintains E&S oversight. The citizen engagement and grievance redressal process also lack adequate resources in terms of dedicated desk and staff for efficient tracking and response.

Based on the ESSA findings, the following Program action plan is incorporated for the BIMPIII.

6.1 BIMP III - Program Action Plan

SN	Action Description	Source	DLI#	Responsibility	Timing	Completion Measurement
1	Amend DoR's Gender Equality and Social Inclusion (GESI) guideline to institutionalize childcare provisions and subsequently establish a Creche facility within DoR	Other	NA	BB	By end of project	DoR to report on the status of the subject action
2	Enhance E&S capacity of the PCU and PIUs by onboarding a robust team of specialists including an environmental specialist, social specialist, gender/GBV specialist, an OHS expert, and hiring and environment/OHS officer and social officer for the Federal Roads Supervision and Monitoring Offices.	E&S	NA	DoR	3 months of effectiveness	DoR to report on the status of the subject action
3	prepare GESU business plan and dedicate budget for implementation	E&S	NA	DoR	6 months of effectiveness	DoR to report on the status of the subject action
4	Implement the DoR's ESMF with enhanced provisions for Occupational and Community Health and Safety, labor camp management, citizen engagement, prevention of child labor, and prevention of	E&S	NA	DoR	3 months of effectiveness	DoR to report on the status of the subject action

	Gender-Based Violence and Sexual Exploitation and Abuse.					
5	Incorporate environmental and social management mitigation measures and costs in the BoQ and include relevant provisions in the contractors' and supervision consultants' contract conditions.	E&S	NA	DoR	As part of the preparation of procurement documents and respective contracts.	DoR to report on the status of the subject action
6	Conduct annual independent third-party monitoring of E&S implementation performance.	E&S	NA	DoR	After start of works	DoR to report on the status of the subject action
7	Strengthen and institutionalize the stakeholder consultation process. Mapping and engaging with key stakeholder to address potential E&S risks including human trafficking/SEA/SH risks under the Program	E&S	NA	DoR	12 months of effectiveness	DoR to report on the status of the subject action
8	Establish a dedicated GRM desk with an officer to oversee tracking and follow-up for DoR's web-based GRM. Institutionalize this GRM for BIMP III and DoR, ensuring accessibility, confidentiality, and capability to handle SEA/SH complaints and refer survivors to relevant services.	E&S	NA	DoR	6 months of effectiveness	DoR to report on the status of the subject action
9	Conduct beneficiary survey to assess the quality, resilience, and inclusiveness of the bridge works.	E&S	NA	DoR	18 months of effectiveness	DoR to report on the status of the subject action

10	Conduct relevant E&S capacity building program (training, awareness, and education) for	E&S	NA	DoR	6 months of effectiveness, continuously	DoR to report on the status of the subject action
	DoR staff, consultants, and subcontractors				on a quarterly basis thereafter	
11	Establishment a digital system for the Gate Review Mechanism, E&S reporting and OHS monitoring, including data collection of near miss and incident validation, and corrective actions	E&S	NA	DoR	12 months of effectiveness, continuously thereafter	DoR to report on the status of the subject action
12	Facilitate interdepartmental coordination with MOFE and NEA and other relevant agencies for swift approval of E&S assessment reports, tree clearance, and utility relocations.	E&S	NA	DoR	6 months of effectiveness.	DoR to report on the status of the subject action

IPF Activities on E&S Capacity strengthening

Item	Activity	IPF allocation (US\$ million)
IPF-3	Institutional dev. & strengthening, incl. policies & guidelines concerning resilience and wildlife friendly infra., training curriculum on OHS, SEA/SH and institutionalizing GRM	1.75
IPF-5	Support GESU, incl. business plan, ESMF update and digitizing Gate Review Mechanism	0.50
IPF-7	Consultancy support for implementation of the Program	4.00

Relevant Disbursement Linked Indicator (DLI):

DLI-5: Business process reform plan developed and implemented for institutional strengthening	Incorporate resilience into standards and guidelines Update BMS and include a climate change module Update ESMF and prepare training for its rolling out Enhance GESU's mandate for E&S oversight
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7. Consultations and Disclosure

On February 7, 2025, a stakeholder workshop on the draft ESSA was held with 30 participants. These included representatives from the National Planning Commission, Ministry of Women, Children and Senior Citizens, Department of National Parks and Wildlife Conservation, Nepal Federation of Indigenous Nationalities, Geo-environmental and Social Unit, National Disabled Fund, the borrower and the World Bank team involved in BIMP-III. The key points and suggestions from the workshop were:

- The Department of Roads (DoR) Bridge Branch is responsible for maintaining data on the number of bridges across the nation, including their status, age, and maintenance requirements. The construction of bridges in Nepal appears to be limited compared to the funding received from donor agencies. The Bridge Branch should prioritize the sustainable construction of bridges using high-quality materials.
- Inclusion of environmental and social mitigation costs in BoQ items is appreciable. Process of approving the BoQ items and the cost associated with relocation of utilities should be simplified.
- The coverage of gender-based violence, child labor, sexual exploitation, and abuse in BIMP-III is noted. Consideration should be given to designing and constructing bridges that are accessible to children, the elderly, and individuals with disabilities. Suitable and walkable diversions should be constructed in rivers when old bridges are dismantled, and new bridges are not yet operational.
- Bridges must be designed and constructed with sincerity to ensure resilience and suitability. Lack of seriousness can reduce the bridge's output and hence utility.
- Bridges are often constructed in forests or river areas that serve as wildlife habitats or crossing points. Therefore, the Wildlife Friendly Infrastructure Construction Directive should be considered during the design and construction of bridges.
- Design and build bridges with input from differently abled individuals, following universal accessibility standards.
- The program and contract modality should be clearly defined, especially for Design and Build (DB) Contracts. In DB contracts, E&S assessments can be challenging due to Nepal's legal provisions. Clear BoQ items for E&S mitigation costs are essential.
- Effective oversight of E&S aspects during bridge construction requires institutional capacity and training for GESU, including report writing.

Please refer to **Annex 1** for the list of invitees along with the photos of the event.

Disclosure requirements

A stakeholder workshop held February 7, 2025, to disclose the draft ESSA. It was organized by Bank with facilitation support by DoR. Comments and suggestions were sought during the disclosure workshop. The feedback obtained during the workshop was used to further refine and finalize the ESSA as well as feed into the project design. Once final, the ESSA will be disclosed on DoR website and the World Bank external website.

Annex 1: List of Participants: stakeholder consultation workshop

BIMPHI- ESSA Meeting Stakeholder Consultation Sagarmatha/ Karnali Hall, World Bank February 7, 2025				
S.N.	Name	Organization	Designation	Email
1.	Shrestha Babu Karki	National Disability Fund	Outreach & Union officer	Karki@nfdcf@gmail.com
2.	Balanta Raj Prasad	DOR	MC Officer	brprasad@dor.gov.np
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4.	Purushottam Adhikari	BB, DOR	Engineer	adpurush@ymail.com
5.	Rajesh Babu Ghimire	NPL	Prj. Dir.	dadaghi@ymail.com
6.	Trilok Nath Ghimire	DOR	SDE	trilok.dci@gmail.com
7.	Achim Rasai	DOR	Engineer	achimrasai12@gmail.com
8.	Calijan Khanal	DOR	DDG	kalijet.khanal@gmail.com
9.	Kushal D. Ghimire	DOR	Sociologist	Kushaldoughimire@gmail.com
10.	Krishna Raj Acharya	DOR/BRDC	Project Manager (DE)	krajacharya19@gmail.com
11.	Sanjay Kumar Mishra	"	SDE	es.sanjaymishra@gmail.com
12.	Gopal Prasad Kharel	R.D. Lalitpur	Division Chief	kharel@rdl.com.np

BIMPHI- ESSA Meeting Stakeholder Consultation Sagarmatha/ Karnali Hall, World Bank February 7, 2025				
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Annex 2: Existing Environmental and Social Provisions for Bridge Projects

Key Environmental Policies and Legislations

- I) **Nepal Environmental Policies and Action Plan, 1993** endorsed by the government of Nepal has five main objectives: a) to manage efficiently and sustainably natural and physical resources; b) to balance development efforts and environmental conservation for sustainable fulfillment of the basic needs of the people; c) to safeguard natural heritage; d) to mitigate the adverse environmental impacts of the development projects and human actions; and e) to integrate environment and development through appropriate institutions, adequate legislation and economic incentives, and sufficient public resources.
- II) **Environment Protection Act, 2019 and Environment Protection Regulation 2020** are an umbrella environmental act and rules governing the environmental matters of the country. Article 2 of the act mandates Brief Environmental Studies (BES), Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) of the development projects as prescribed the Rule pertaining to the Act and prohibits development activities without the approval of BES/IEE/EIA by the concerned agencies or Ministry.
- III) **Forest Act 2019 and Forest Regulation, 2022** emphasize on the protection and conservation of the forest resources and prohibits any activities within the forest area without prior approval of the concerned forest authorities (Article 9 and Chapter 15 Article 49).
- IV) **Forest Policy, 2019**; the forest policy is attracted when a development project directly or indirectly impacts on the forest resources. Policy reemphasizes to avoid forest destruction or tree cutting while constructing infrastructures during implementation of project other than forest sector. The policy has prioritized the protection of Siwalik, the geologically vulnerable area, with a view to ensure watershed conservation, and maintenance of water recharge. The policy also stresses conservation of endangered species. It has reiterated that forest area will not be used for any activities other than prescribed in Operational Forest Management Plan. The forest policy emphasizes the implementation of community and private forestry development programs, national parks and conservation areas management programs, soil and watershed conservation Program, management and development of medicinal plants, and conservation of biological diversity.
- V) **National Park and Wildlife Conservation Act, 1973** has an objective of the conservation, management and utilization of flora, fauna and scenery along with the natural environment of the national parks, reserves and conservation areas declared by the government. The Act prohibits entry into the national parks (Article 4) without prior approval of the concerned authority. The Act also prohibits a range of development and other activities (Article 5) within the national parks without permissions of the concerned authorities.
- VI) **Aquatic Animal Protection Act (1960)** has provisions for the protection of aquatic animals and matters there to. The Act prohibits action that impinges upon the aquatic life (Article 5). Prior information to the concerned technical officer impinging on the natural water body is mandated (Article 5B (1) and (2)).

- VII) **Ancient Monument Preservation Act 1956** promulgated with explicit objective to protect ancient monument, restrict trade in archeological objects as well as excavations in places where ancient monuments are located. The Act prohibits development works which may impact ancient monuments without prior approval of the concerned authorities (Section 3, Article 5 and 8).
- VIII) **Roads Board Act, 2002** has necessary provisions on repair and maintenance of roads, minimizing the expenditures to be incurred in repairing and maintaining the roads and making transparent and effective the repairing and maintaining works of the roads. The autonomous body of Roads Board was established to carry out routine, recurrent, periodic, and emergency repair and maintenance works of the road and to arrange for imposition on and collection of tolls from the motor vehicles plying on the road.

XI) Related Guidelines, Manuals, Directives and Work Procedures

- I) **National Environmental Impact Assessment Guideline, 1993:** is a generic guideline on the process and procedures for the environmental assessment of the development projects and has all ingredients of the World Bank's best practice process and procedures related to the environmental assessment of the development projects. It is also applicable for the assessment of the transport and bridge sector development works. As this pre-dates the Environmental Protection Act and is not referred as reference document under the Act and Regulation provision.
- II) **Environmental Management Guidelines, DOR, 1997:** is the first guideline addressing the road sector. The main objective of the guideline is to ensure integration of environmental consideration in the project survey and design, tender documents, contract documents and supervision and monitoring. Though the guideline highlights on the environmental assessment process is focused more on the 12 areas of concerns for mitigation in the road development. Bridge as separate component of development in the road sector is not discussed.
- III) **Policy Document: Environmental Assessment in the Road Sector of Nepal, DOR 2000.** This provides an overall guidance in applying EPA and EPR in road sector in Nepal. Although screening criteria mentions bridges, the issues discussed and the provisions and guidance provided about assessment, mitigation measures and monitoring are for the roads rather than bridges. The Policy explains the undertaking environmental screening, IEE, EIA of roads following the provisions of the EPA and EPR. In higher risks projects (i.e. requiring EIA), the EPR requires analysis of alternative alignment of the proposed road.
- IV) **Environmental and Social Management Framework, 2007, updated in 2024: is a comprehensive** document of DOR which clearly provides outlines for identifying, planning, managing and monitoring of adverse environmental and social impacts in strategic roads that are constructed/ rehabilitated by the DOR. The document, specifically, provides information about the process and procedures to be followed at various stages of safeguards compliance i.e. safeguard planning, implementation and monitoring including preparation of Resettlement Action Plan (RAP) in situation when involuntary resettlement is triggered by the project causing economic and physical displacement. The Resettlement Policy Framework (RPF), Chapter VIII provides clear picture of the GON policies vis a vis donor policies, provides recommendations to bridge the gaps, details out the eligibility criteria for various categories of affected families and entitlements along

with the valuation procedures of assets by the CDC. The same chapter deals with the planning and preparation of Indigenous People Development Plan (IPDP)/Vulnerable Community Development Plan (VCDP) suggesting the outline structures. The framework also deals with the implementation modalities of measures, institutional arrangements/improvements, monitoring of social environmental interventions as well as in-house capacity building of DOR both in the short and long term. Over the last few years, the DOR/GESU and Consultants have complied with this framework in all stages from planning to implementation as well as monitoring and reporting in World Bank funded Road Sector Development Project (RSDP), ACCESS, SRCTIP subprojects under additional financing and the BIMP I and II. Occupational community health and safety are important considerations in DoR projects. Chapter X of ESMF guides for proper planning, training, and implementation of health and safety measures during works to prevent accidents and protect workers and the community from harm.

- V) **Work Procedure for the use of Forest land for environmental studies and other purposes 2022:** This guideline sets procedure for the use of the forest area land for environmental studies and other purposes. Apart from this it also sets guidelines for the mitigation measures for compensatory afforestation for the loss of forest resources in the project occupied land areas and the procedure for depositing money into the Forest Development Fund (FDF) to cover replantation costs and the expenses associated with the use of forest land.

Key Social Acts, Policies and Legislations

I) The Constitution of Nepal, 2015

As the fundamental law of the nation, the Constitution of Nepal has enshrined various Articles aimed at sustainable development of the country. Article 16 specifically mentions that every person shall have the right to live with dignity while Articles 25, 27, 32, 37 and 41 make provisions on Right to Equality, Properties, Information, Language and Cultures, Housing, and Social Justice, respectively. Further, Article 34 has made provisions on Rights regarding Labor. Likewise, Article 29 has provisions on Rights Against Exploitation whereas Rights of Women, Children and Dalits are specified under Articles 38, 39 and 40, respectively.

II) Land Acquisition, Rehabilitation and Resettlement Policy, 2015

Government of Nepal (National Planning Commission) has developed and approved a policy outlining provisions on acquisition of private properties (land and structures) for the infrastructure development projects including roads and bridges and rehabilitation and resettlement of the affected persons. Such provisions of this Policy are considered as significant improvements in the conventional systems of land acquisition and resettlement, including compensation and livelihood support provisions applicable to the non-title-holders as well.

III) The 14th National Plan

Government of Nepal's 14th National Periodic Plan (2017/18 – 2019/20) approved recently highlights on various development programs including development of transport sector. The Plan ensures to upgrade people's livelihood and standard of living through increased income and employment and improved access to various social services and promotion of economic activities by providing opportunities through harnessing the local resources and opportunities in transport sector, *inter alia*.

The Plan also affirms to support for the policies and programs for indigenous peoples. It also contains policies for inclusive development of IPs, women, Dalits and other marginalized disadvantaged groups by: (i) creating an environment for social inclusion; (ii) participation of disadvantaged groups in policy and decision making; (iii) developing special programs for disadvantaged groups, (iv) positive discrimination or reservation in education, employment, etc. (iv) protection of their culture, language and knowledge, (vi) proportional representation in development, and (vii) making the country's entire economic framework socially inclusive.

IV) The National Transport Policy, 2001: This policy, among others, states that the entire process of land acquisition and transferring of land ownership to the project shall be established prior to the commencement of road project implementation. At the same time, a basis for livelihood shall be established to the fully displaced families by way of rehabilitation or any other means.

V) National Foundation for the Development of Indigenous Nationalities Act, 2002: The NFDIN established the first comprehensive policy and institutional framework regarding indigenous peoples. The act defined indigenous groups or Adivasi Janajati in Nepali as "a tribe or community having its own territory, own mother tongue, traditional rites and customs, distinct cultural identity, distinct social structure and written or unwritten history". The government, through NFDIN, identified and officially recognized 59 such indigenous communities.

There are some other legislation that address specifically the situation of and call for specific measures in relation to the Adivasi Janajati and other marginalized groups. These include the Local Government Operational Act (2017); the 2007 amendments to the Nepal Civil Service Laws, Military Act and Police Regulation; and the Ordinance on Inclusion in Public Service (2009). The Civil Service Act includes a quota (reservation) system that specifies: "out of the 45 % of new recruitments reserved for various under-represented groups, 27 % are allocated to ethnic groups". The Ordinance on Inclusion in Public Service likewise demonstrates attention to the problem of under-representation by providing a quota system that benefits indigenous peoples.

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

VI) Child Labor Prohibition and Regulation Act 2000 and Rules: Article 3, Clause 1 of the Act states that any child below the age of 14 years is prohibited for labor employment. However, Clause 2 states that it is prohibited to engage children below 16 years in works in risk prone sectors, including road and bridge construction works. In other words, children between 14-16 years may be engaged in light and low risk jobs with due permission from the assigned government authority. This Act, however, is being amended subsequent to the GoN's signing of the ILO Convention C182 on Worst Forms of Child Labour in the year 2002 – suggesting that completion of 18 years of age is mandatory for employment in the construction (roads and bridges) sector.

VII) Labour Act, 2017: has special provision for construction enterprises. The provisions are related to: (a) tools and materials required by workers engaged in construction works¹; (b) quarters, food, drinking water, etc. for workers in a temporary construction site where 50 or more workers work; (c) insure workers on construction sites against accidents; and (d) safety arrangements for construction sites, and arranging personal protective equipment for workers employed in construction works.

VIII) Land Acquisition Act, 1977. The Act is the major guiding document that provides authority to the Projects/ Development Proponents to acquire land for development projects in the country. The Act mandates compensation at market value for all land acquisitions under private ownership. It clearly states the process/ procedures and timeframe about acquiring private properties (land, house/structure, crops and others) by paying compensation to the affected people as well as the institutional mandates and responsibilities for their implementation. It also has provisions for land donation on mutual agreements with the private land owner/donor. The land donation, however, must be at the owner's own decision/discretion, and must be free from coercion of any nature.

IX) Public Road Act, 1974. The Act is the governing legislation for the construction and operation of roads and bridges in Nepal. According to the Act, a Compensation Fixation Committee (CFC) will be formed to determine compensation in case of loss of assets, business, business or production. Provisions are also detailed out for compensation for the extraction of construction materials.

X) Related Guidelines, Manuals, Directives and Work Procedures

I) Public Work Directives (PWD), Part II, Chapter IV, DOR, GON, 2002. The PWD is a major guiding document of the government on various aspects of project development. In addition to the technical information, the Directives provides step wise approach/mechanism about handling issues such as acquisition of private properties (land, structures, trees, community resources and facilities etc.), valuation of assets, payments of compensation and Resettlement and Rehabilitation (R&R) assistance both to the title holders and non-title holders i.e. squatters and encroachers.

II) Directives on Land Acquisition for Road Sector, DOR, 2002. The Directives draw up on various provisions on land acquisition for the road projects by DOR. It also highlights the

process of land acquisition as per the Act and compensation payment for the acquired properties including the roles and responsibilities of the Compensation Determination Committee (CDC) as well as participation of the representative of the project affected people.

III) Land Acquisition Guidelines, 1989. The Guideline defines two categories of project affected families, viz., Project Affected Families (PAFs) and Seriously Project Affected Families

¹ "construction works" means construction works of buildings, roads, bridges, canals, tunnels, internal and international waterways and railways, or installation of electrical, telephone or telegraph and other equipment, or machinery relating to telecommunications, or other works relating to construction.

(SPAFs). SPAFs are defined as those who lose over 25% of the total land holdings or whose land is reduced to an uneconomic holding i.e. less than 5 Kattha or who is being displaced.

IV) Interim Guidelines for Enhancing Poverty Reduction Impact of Road Projects, DOR, August 2007.

The guidelines deal with various aspects of poverty reduction including links between road development and poverty reduction, planning and enhancing poverty reduction strategies in road projects at various stages, complementing poverty reduction activities and good practices in road projects, and planning, implementation and monitoring arrangements of poverty reduction impacts in road projects.

V) Gender Equality Act, 2006

The Gender Equality Act, 2006, repealed and amended 56 discriminatory provisions of various previous Acts and incorporated provisions to ensure women's rights. Some key provisions amended by the Act are the provision that a daughter is required to return shared property upon marriage, the provision for summons issued by the court to be received by a male family member as far as possible and the provision for divorce in the case of not having children within 10 years of marriage. Further, the Act establishes sexual violence as a crime punishable by varying years of imprisonment, depending on the age of the victim.

VI) Gender-Related International Conventions

Nepal has committed itself to important international conventions such as United Nations Millennium Declaration, the Beijing Platform for Action, and the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW), all of which have a strong gender dimension.

VII) ILO Convention on Indigenous and Tribal Peoples, 1989 (No.169)

Nepal is the State Party of ILO Convention on Indigenous and Tribal Peoples, 1989 (No.169). The convention requires consultation with the peoples concerned through appropriate procedures and through their representative institutions, whenever consideration is being given to legislative or administrative measures, which may affect them directly. It further states that indigenous and tribal peoples shall, wherever possible, participate in the benefits of natural resource utilization activities and shall receive fair compensation for any damages, which they may sustain because of such activities. The convention also further explains regarding relocation, which has clearly stated that during this process free and informed consent of indigenous people, must be taken.

Annex 3: Summary Note on BIMP- II Experiences and Lessons Learned

BIMP is the first PforR Program implemented in Nepal since the year 2012. It is also the first Program to be completed on time, without any extensions, and closed in mid-July 2017 BIMP I and July 2024 BIMP II. This summary note highlights some of the experiences and lessons learned specific to environmental and social safeguard implementation in BIMP-II.

A) Institutional Strengthening:

- ✦ Based on recommendation of the Environmental and Social Systems Assessment (ESSA), ESMF of the implementing agency (DoR) has been amended and updated integrating the bridge component and occupational, community health and safety considerations

- ✦ Human and other resources have been provided – including recruitment of two permanent positions as Environment and Social specialists on top of Program period other personnel.
- ✦ Dedicated budget is also being allocated to GESU now.
- ✦ An electronic Grievance Redressal Mechanism (GRM) has been developed and is operational.
- ✦ GESU's engagement in management of environmental and social aspects has been further strengthened through BIMP-II.
- ✦ The Program enhanced the quality assurance mechanism in the government's bridge program by promoting collaboration among three key agencies on a unified platform to achieve quality results: the implementing agency (DoR), the technical audit agency (NVC), and the final verifying agency (NPC).

B) Environmental and Social Safeguards Management

1. Environmental and Social Safeguards Assessments have been conducted for each bridge site and further plans have been prepared and implemented based on findings of such assessments. This includes providing compensation to the adversely affected households, offering appreciation letters to the voluntary land donors, slope stabilization and embankment protection measures and reinstatement of community facilities wherever required. The voluntary mode of land acquisition, however, has been noted requiring revisions.
 2. The program facilitated the creation and approval of the Occupational Health and Safety (OHS) Policy, Guidelines, and manual, and also updated Environmental and Social Management Framework of the Department of Roads (DoR). During the COVID-19 pandemic, the DoR, with support from international organizations, introduced Standard Operating Procedures (SOP) for construction sites. This included labor management, child labor prevention, and capacity-building.
 3. The timing for E&S assessments has been found to be conducted late in some of the cases, delaying the implementation of such plans/mitigation measures - the lesson learned being the need for conducting safeguard assessments at the very initial (feasibility) study stage together with that for civil works/design preparation purposes, integrating assessment findings in the design and DPR prepared for each bridge, submitting the complete design/DPR together with the environmental and social management plans(ESMPs, BES/IEEs) for required approvals and implementing them ensuring proper sequence. System of Environmental and Social Safeguard assessments during feasibility stage itself for each sub-project (bridge) should be established for each bridge type and procurement system (D&B; D, B and B, etc.) – suggesting that Social and Environmental specialists should be made mandatory part of the study team and be mobilized together with the other technical (design) teams right from the initial stage of project preparation. This might be ensured by amending the current ToRs.
 4. Similarly, the operation of BIMP II had several positive aspects, including pre-construction readiness, prompt environmental and social (E&S) screening, and gate review processes by GESU. Additionally, there was a strong focus on training and capacity building, and the inclusion of E&S compliance costs in the Bill of Quantities (BoQ). The operation also supported community programs. The Bank's E&S team provided valuable guidance to the client in implementing various E&S instruments and reporting on E&S matters.
- ✦ For BIMP, environmental and social safeguard screenings have been conducted for 123 bridges (6,500 m) to support major maintenance interventions, 168 bridges (10,000 m) of road safety upgrades on existing bridges, new construction, rehabilitation, or replacement of approximately 91 new 2-lane bridges and to bring 103 bridges (about 7,000 m) to full completion. Required plans have been prepared and implemented based on screening findings for each site.

- ✦ Altogether 36 households were adversely affected due to permanent land (6.4 hectares) taking for 13 new bridge Construction works, mainly for approach roads. Land acquisition with compensation payment as per BIMP standard provisions was undertaken for 8 of the affected households whereas voluntary land donation was made by 28 families (felicited with appreciation letters). Likewise, support and mitigation measures have been taken for 7 minor structures (sheds), one private house on unregistered land, 11 irrigation canals, 2 watermill canals, 1 watermill, 3 private trees, one cremation site, one access block, and one river course reinstatement works.
- ✦ GESU's contribution in Dossier verification is brief and less formal – suggesting the need for making it more engaging and formal, making mandatory concurrence of GESU on Environmental and Social aspects of each dossier before its submission for approval. In Dossier Verification Process: Environmental and Social safeguard feedback from GESU is limited. Dossier verification was done on sampled basis for all bridges during the first two years, which the third party changed for the third year onward – making verification for all new bridges while maintaining the sampled-basis for the maintenance ones.
- ✦ For each subproject, BoQ contains budget for management of environmental and social safeguards, but on lump sum basis rather than actual one which has been found less pragmatic, suggesting realistic budgeting based on site-specific assessments and plans, and implementation as required.
- ✦ Strengthening grievance management system: In view of the low-literacy rates, limited awareness on the procedural requirements and ability to follow the process, and other lessconducive environments in which the adversely affected communities have been living; it is likely that instances of oral complaints might outweigh the written ones and/or those submitted online. Hence, a system should be strengthened at implementation level whereby all (oral and written) grievances and suggestions received from the communities are fed into the GRM by the safeguards teams at whichever level they are received. The concerned Branch managing the GRM should continue sharing and seeking GESU's support and concurrence in resolving the grievances received.

C) Supervision and Monitoring

5. Construction supervision and monitoring are carried out by Construction Supervision and Support Engineers (CSSEs) whereas Environmental and Social safeguard monitoring by Social Mobilization Consultants at implementation levels while the central level (GESU- based) BIMP-dedicated Environmental and Social Safeguard Consultants have also performed supervision and monitoring functions. The frequency of such trips, however, has been found to be impeded due to logistical issues. Inadequate staffing in the central and field offices was repeatedly highlighted by the Bank team during the Program's implementation support missions. Enhanced dedicated resources for Safeguard Teams' mobility/activities, inclusion also of Environmental personnel in implementation level supervision and monitoring team, and enhanced frequency/regular site supervision support are found to be some of the crucial aspects in this regard.
- ✦ Field (six regional offices)-based safeguard teams share their monthly reports to GESU. Likewise, GESU also prepares compliance monitoring field visit reports and submits to Bridge Branch. Implementation of field monitoring feedback has been noted to be weak.
- ✦ It is important to mainstream and prioritize resilience measures while updating the DoR's hydrology and hydraulic analysis guidelines to take account of anticipated changes in climate parameters. It is crucial to adopt mitigation measures like bioengineering and slope stabilization for protecting bridges from the high risks of slope failures. Building on the developed resilience

guidelines, BIMP-III should integrate the resilience measures into bridge designs, construction, and maintenance, to ensure functionality under adverse conditions.

D) Recordkeeping System

6. Records of safeguards screening, BES and IEE reports and social and environmental management plans (ESMPs) are available mostly in electronic copies. However, they are not easily available, are also on personal laptops/computers, and not easily available at the regional/implementation level offices. Thus, all safeguards assessment/screening documents, mitigation and management plans, Grievances or suggestions, supervision and monitoring reports, safeguards implementation completion reports, etc. should be duly filed and stored in electronic and print versions at implementation level for sub-projects under the jurisdiction of the respective implementation support and supervision entity, and at GESU for all subprojects. BIMP-III could support hiring qualified supervision consultants and adopting standard site supervision templates, such as quality assurance plans and progress reporting documents to maintain record keeping system.

E) Occupational Health and Safety (OHS)

- ✦ BIMP II supported the development and approval of the OHS Policy, Guidelines, and Manual. System of Safety Gears has been established by BIMP II. Bill of Quantities (BoQ) now also has budget line for OHS requisites. However, further strengthening and addressing OHS implementation measures is required; including safety gears, OHS expert, workers' camp, and workers' influx management (WIM), *inter alia*. The Bid Documents also need to be revised to integrate and address such issues.
- ✦ Orientations to contractors' teams as well as project management teams on OHS were limited, and there was one casualty during BIMP implementation as a worker was killed due to formwork/false-work collapse. This also suggests severe requirement for specific provisions and system establishment for this purpose.

Annex 4: Some Photographs from BIMP - II



Figure 1 - Bhalwua-Madan-Bandari Bridge, Morang Figure 2 – Sanoneti-Madan-Bandari Bridge, Jhapa



Figure 3 – Chidia-Sidhartha Bridge, Palpa



Figure 4 – Namsi Bridge, Chitwan