

Draft Environmental Assessment and Review Framework

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Nepal: Earthquake Emergency Assistance Project

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CURRENCY EQUIVALENTS

(as of 04 June 2015)

Currency unit – Nepalese rupee (NRe/NRs)

NRe1.00 = \$0.0097750

\$1.00 = NRe102.3020

ABBREVIATIONS

ADB	–	Asian Development Bank
CSA	–	concerned sector agency
DIMU	–	District Implementation Monitoring Unit
DIU	–	District Implementation Unit
DOE	–	Department of Education
DOLIDAR	–	Department of Local Infrastructure Development and Agricultural Roads
DOR	–	Department of Roads
DSC	–	Design and Supervision Consultants
DUDBC	–	Department of Urban Development and Building Construction
EARF	–	environmental assessment and review framework
EIA	–	environmental impact assessment
EMP	–	environmental management plan
EPA	–	Environmental Protection Act
EPR	–	Environmental Protection Rules
GRC	–	Grievance Redress Committee
GRM	–	Grievance Redress Mechanism
IEE	–	initial environmental examination
LAC	–	Local Area Committee
MOF	–	Ministry of Finance
MoSTE	–	Ministry of Science, Technology and Environment
NGO	–	nongovernmental organization
PIU	–	Project Implementation Unit
PMC	–	Project Management Consultants
PMU	–	Project Management Unit
SPS	–	Safeguards Policy Statement
ToR	–	Terms of Reference

WEIGHTS AND MEASURES

kilometer – km

NOTE

In this report, "\$" refers to US dollars unless otherwise stated.

I. INTRODUCTION

1. The Project will restore and strengthen the resiliency of critical public and social infrastructure and services and has outputs:

- (i) **Output 1 - Schools are rebuilt and upgraded and learning environment improved:** 700 schools¹ will be rebuilt or retrofitted to disaster resilient standards and equipped with water and sanitation facilities. Five of these schools will be model schools built with ICT equipment, science laboratories and improved learning spaces. Approximately 2,000 teachers will be trained in effective delivery of education services in emergency situations.
- (ii) **Output 2 - Roads and bridges are rehabilitated and reconstructed:** 135 km of strategic roads and 600 km of rural roads will be rehabilitated. Project roads and bridges will have built back better features for road safety and climate resilience. There will also be procurement of construction and maintenance equipment.
- (iii) **Output 3 - District-level government facilities constructed and/or rebuilt:** 120 transitional district-level government offices will be established to enable services to continue throughout the reconstruction period. In addition, 180 district-level government buildings will be rebuilt or retrofitted to disaster resilient standards with basic utilities and furnished.
- (iv) **Output 4: Measures for improved disaster preparedness and management implemented:**² The Ministry of Education's Strategy and Overall Plan for Increasing Disaster Resilient Schools in Nepal will be updated and adopted with building codes and standards for public and private schools. The Type Designs for School Construction will be revised to meet international best-practice and safety standards and adopted by the Ministry of Education. The project will also prepare community-based disaster risk management plans incorporating multi-hazard risks and provide related training for all project school communities.

2. This environmental assessment and review framework (EARF) will guide the preparation of environmental assessments and environmental management plans (EMPs) developed for education (output 1), roads and bridges (output 2), and district (output 3) infrastructure subprojects during project implementation. Output 4 will not have environmental impacts.

3. This EARF is disclosed in the Asian Development Bank's (ADB) website, and will be endorsed by the executing agency and will be translated and disclosed in the websites of the 4 implementing agencies.

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. Applicable National and Local Laws, Regulations, and Standards

4. The Project's components and its subprojects shall comply with the government's environmental laws, standards, rules, and requirements. Compliance is required in all stages of the project, including design, construction, and operation and maintenance.

¹ The focus is on larger schools of 10-12 classrooms each. The total number of classrooms to be rebuilt or retrofitted is at least 7,000, or almost one-fourth of the 30,000 damaged classrooms.

² Output 4 will be financed through the piggy-backed TA.

5. The government set procedures for environmental assessment of development projects in the Environment Protection Act (EPA), 1997 and the Environment Protection Rules (EPR), 1997 and Amendment of 20 August 2007.

6. The EPR prescribes the thresholds of projects that would require initial environmental examination (IEE) and environmental impact assessment (EIA) in Schedules 1 and 2, respectively. The IEE/EIA process is given in Table 1.

7. The project proponent is responsible for: (i) preparing the scoping for the EIA and terms of reference (ToR) to prepare the IEE/EIA and seeking government approval; (ii) conducting the appropriate environmental assessment following the approved schedule of work and ToR; (iii) conducting the required public consultations; (iv) preparing the corresponding report following the outline prescribed in the EPR or the outline in the approved ToR; (v) submitting or applying to the appropriate government body for approval; and (vi) implement the IEE/EIA along with the terms and conditions of the approval.

8. The concerned sector agencies (CSA) are responsible for the: (i) review of applications for EIA scoping and approval of IEE schedules of work and ToRs (ii) review of submitted IEE/EIA reports; (iii) approval of IEE Reports; (iv) forwarding of reviewed EIA reports with amendments to the Ministry of Science, Technology and Environment (MoSTE); and (v) monitoring and evaluation of project implementation impacts.

9. The MoSTE is responsible for the: (i) approval of EIA scoping and ToRs; (ii) approval of EIA reports; and (iii) conduct of environmental monitoring during project implementation and an environmental audit of completed project after two years of operation.

10. Aside from MoSTE, which is in charge of environmental control and management for all sector agencies, project implementing agencies have the overall responsibility for final approval of IEEs for subprojects and environmental monitoring during implementation.

11. The following permits must be obtained by the project prior to construction:

- (i) IEE/EIA survey permit within forest areas from the Department of Forest;
- (ii) tree cutting clearance from the Ministry of Forest and Soil Conservation, or Cabinet approval for occupying forest areas for development work;
- (iii) information to the Department of Roads for laying transmission lines or water supply pipes in the right of way of strategic and feeder roads, and joining of rural roads to strategic and feeder roads; and
- (iv) permit from the Department of Archaeology for work in sensitive archaeological areas.

Table 1: The Government of Nepal IEE/EIA Report Preparation, Review, Approval, and Implementation Process

	Steps in the Process	Responsible Entity
1	Refer to Schedules 1 and 2 of the EPR for the prescribed environmental assessment (IEE/EIA) to carry out for the proposed project.	Proponent
2	Preparation of schedules of work/ToR and determination of EIA scope A. If proposed project requires an IEE: Prepare an IEE schedule of work/ToR using the format prescribed in Schedule 3 of the EPR and submit this to the CSA for approval. B. If proposed project requires an EIA: • Determining the scope of the EIA.	Proponent

	Steps in the Process	Responsible Entity
	<ul style="list-style-type: none"> ▪ Publish a notice in a national daily newspaper requesting concerned VDCs or Municipality, institutions and individuals to send, within 15 days from date of publication, their opinions and suggestions on the potential impacts of proposed project's implementation on the environment. ▪ Submit the opinions and suggestions to the CSA along with an application for scope determination. ▪ Review the submitted documents and forward the application along with its opinion and suggestion to MoSTE. ▪ Review the forwarded documents and determine the scope. • Prepare an EIA schedule of work/ToR using the format prescribed in Schedule 4 of the EPR on the basis of the determined EIA scope and submit this to the MoSTE for approval. Alternatively, EIA scope and ToR could be prepared in parallel and submitted together to MoSTE for approval to save time (Rule 5(2) of Section 2 of the EPR). 	<p>Proponent</p> <p>Proponent CSA MoSTE Proponent</p>
3	<p>Conduct of IEE/EIA and preparation of IEE/EIA Report:</p> <p>A. IEE:</p> <ul style="list-style-type: none"> • Carry out IEE according to the approved work schedule. • Prepare IEE Report using the format prescribed in Schedule 5 of the EPR or the outline in the approved ToR, incorporating the opinions and suggestions of stakeholders on potential impacts proposed project's implementation on the environment (requested to be sent within 15 days from date of notice posting at concerned VDCs or Municipality, Office of the District Development Committee, school, hospital, and health post, and of notice publication in a national daily newspaper). 	Proponent
	<p>B. EIA:</p> <ul style="list-style-type: none"> • Carry out EIA according to the approved scope and work schedule/ToR. • Prepare EIA Report using the format prescribed in Schedule 6 of the EPR, incorporating the opinions and suggestions obtained from stakeholders through a public hearing organized in the VDC or Municipality. 	
4	Submit 15 copies of the IEE/EIA Report along with the project proposal and recommendation of the concerned VDC or Municipality to the CSA.	Proponent
5	<p>Review and approval of IEE/ EIA report:</p> <p>A. IEE report:</p> <ul style="list-style-type: none"> • If review reveals project implementation to have no substantial adverse impact on the environment, grant approval within 21 days from receipt of Report. • If review reveals the necessity to carry out an EIA, conduct an EIA following the EIA process (commencing from Step 2B in this Table). 	<p>CSA</p> <p>Proponent</p>
	<p>B. EIA Report:</p> <ul style="list-style-type: none"> • Review and forward its opinion, 10 copies of the EIA Report together with the project proposal to the MoSTE within 21 days from receipt of Report. • Solicit opinions and suggestions regarding potential impacts from the implementation of the proposed project from: the general public, by publishing a notice in a national daily newspaper granting the public 30 days (starting from the 1st date of notice publication) to make a copy of the Report and proposal themselves for their review and to send their feedback 	<p>CSA</p> <p>MoSTE</p>

	Steps in the Process	Responsible Entity
	<ul style="list-style-type: none"> to a Committee of experts formed by MoSTE If opinions and suggestions and review of Ministry reveal project implementation to have no substantial adverse impact on the environment, grant approval within 60 days, or in case of special reason within 90 days, from receipt of Report. 	
6	Implement approved IEE/EIA Report and any terms and conditions given with the approval.	Proponent
7	Monitor and evaluate impact of project implementation. When necessary, issue directives to the Proponent to institute environmental protection measures.	CSA
8	Conduct environmental audit after two years of project commissioning/operation.	MOSTE

CSA-concerned sector agency; EPR-Environment Protection Rules, 2054 (1997) with amendments in 1999 and 2007; MoSTE-Ministry of Science, Technology and Environment; VDC-Village Development Committee

12. Details of applicable National and Local Laws, Regulations, and Standards specific to road subprojects are detailed in Appendix 1.

B. ADB Environmental Safeguards

13. ADB environmental safeguards' objectives are: (i) to ensure the environmental soundness and sustainability of projects and (ii) to support the integration of environmental considerations into the project decision-making process. ADB environmental safeguards are triggered if a project is likely to have potential environmental risks and impacts. Policy Principles are in Appendix 2.

C. Institutional Capacity

14. The project has been categorized as B for environment under the ADB's Safeguards Policy Statement 2009 (SPS). Individual subprojects will be screened and classified, and based on the classification, and where required, environmental assessments will be undertaken and EMPs developed. Based on the government's EPR Schedules 1 and 2, subprojects are likely to require IEEs.

15. The executing agency, Ministry of Finance (MOF), will form a project management unit (PMU) for project oversight and coordination. The four implementing agencies: Department of Education (DOE), Department of Local Infrastructure Development and Agricultural Roads (DOLIDAR), Department of Roads (DOR), and Department of Urban Development and Building Construction (DUDBC) will form project implementation units (PIU). The PIUs will identify a focal person for environmental safeguards. The focal person will be assisted in the conduct of the environmental assessment, the development and implementation of EMPs, and compliance monitoring by project consultants and District Implementation Units (DIU). All implementing agencies are currently implementing ADB projects under this institutional arrangement (further defined in Section VI). ADB also conducts safeguards training for project executing and implementing agencies. Thus the government has sufficient capacity in implementing ADB requirements and strengthening of capacity, other than through the course of the consultant's work with local counterparts, is not required.

III. ANTICIPATED ENVIRONMENTAL IMPACTS

A. Transport Infrastructure Subprojects

1. Construction Phase

16. **Air Quality.** The potential sources of air pollution during the construction stage include: dust from earth works, emissions from the operation of construction equipment, machines, and crusher plants, fugitive emissions from vehicles plying the road, fugitive emissions during the transport of construction materials, air pollution other than dust from combustion of hydrocarbons particularly from hot mix plants, and localized increased traffic congestion in construction areas.

17. **Noise and Vibration.** Ambient noise may increase temporarily in close vicinities of maintenance workshops and operated vehicles, earthmoving equipment, and crusher plants. Noise is expected to be intermittent and temporary. Noise levels will attenuate with increase in distance from the noise source. There can be vibration due to operation of heavy machinery and equipment which may damage (crack formation) infrastructure.

18. **Land and Soil.** Land and soil may be contaminated through inappropriate construction methods and improper management of spoils. There can also be loss of topsoil. Pollution risks may originate from transportation of hazardous materials during road construction and subsequent traffic operation. There will be temporary changes in land use because of access road, construction camp, and storage of construction materials. This may also result in loss of soil productivity. There are risks of slope failure and soil erosion which require mitigation. Disturbance to fragile hills during slope cutting and poor management of drainage water may cause accelerated erosion and slope instability, landslides, destruction of vegetation and property, siltation of surface water, and water pollution.

19. **Borrow Pits and Quarry Sites.** Impacts are not expected to be significant because construction materials will be sourced from local rivers and *kholas* to the extent possible, and no large quarries are expected to be operated. Borrow pits and quarry sites will be selected avoiding protected and sensitive areas, nearby settlements, water sources, and in forest areas and fertile agricultural lands.

20. **Hydrology and Drainage.** Obstruction of natural drainage basin by roads may modify the natural flow of surface runoff by concentrating flow at certain points. As a result, velocity of flow may increase. In turn, diversion or disruption of natural surface water and drainage patterns is inevitable.

21. **Stockpiling of Materials.** Improper selection of storage areas and stockpiling of material may cause siltation, water pollution, and air pollution due to dust generation, loss of topsoil and productivity, and disturbance to private property.

22. **Explosive, Combustible, and Toxic Materials.** Storage and use of explosives, petrol, diesel, oil and lubricants, bitumen, and solvents may cause fire and explosion hazards, soil and water pollution through leaks and accidental spillage.

23. **Construction Waste.** Debris generated through excavation of existing roads includes bitumen and other pavement materials with various chemicals, oils, and grease that pose hazards to human health.

24. **Construction Camp.** Poor siting and improper management of construction camps may lead to several adverse impacts on environment: (i) loss of vegetation due to use of wood as fuel source for cooking, (ii) deterioration of nearby surface water quality, (iii) compaction and contamination of soil due to uncontrolled disposal of solid waste, and (iv) poor sanitation resulting to transmission of communicable diseases.

2. Operation Phase

25. **Air Quality.** Vehicular emission will be the main source of air pollution during the operation phase, but because the project will rehabilitate existing roads and bridges there are no significant incremental increases in air pollution anticipated.

26. **Noise and Vibration.** Noise generated by traffic movement will be the main source of noise, but because the project will rehabilitate existing roads and bridges there are no significant incremental increases in noise anticipated. There can be vibration due to heavy vehicles, but because the project will rehabilitate existing roads and bridges there are no significant incremental increases in vibration anticipated.

27. **Land and Soil.** Slope failure and soil erosion can occur due to natural and induced causes. This requires continuous monitoring especially during and after the rainy season.

28. **Borrow Pits and Quarry Sites.** Borrow pits and quarry sites are generally developed near road alignments in Nepal. If left without proper restoration, sites can become causes of landslide and soil erosion, and can damage road alignments.

29. **Hydrology and Drainage.** Road sides are prone to landslides and soil erosion due to soil and geological characteristics in Nepal. Consequently, drain blockage will be a perpetual problem and more severe during the rainy season. Loss of trees and agricultural land, and impact on private properties may result during landslides.

30. **Occupational Health and Safety.** Insufficient supply and improper use of safety gear may cause injuries or fatal accidents.

B. Education and District Infrastructure Subprojects

1. Construction Phase

31. **Air Quality.** The potential sources of air pollution during the construction stage include: dust, debris, and particulate materials from construction that may blow to surrounding structures and cause nuisance to surrounding families and businesses, especially vulnerable persons (children, elders, etc.).

32. **Noise and Vibration.** Noise from construction machinery and equipment may disturb others especially in areas with hospitals, homes for the elderly, and schools.

33. **Land and Soil.** Land and soil may be contaminated through inappropriate construction methods and improper management of spoils.

34. **Construction Camp.** Poor siting and improper management of construction camps may lead to several adverse impacts on environment: (i) loss of vegetation due to use of wood as

fuel source for cooking, (ii) deterioration of nearby surface water quality, (iii) compaction and contamination of soil due to uncontrolled disposal of solid waste, and (iv) poor sanitation resulting to transmission of communicable diseases.

35. **Occupational Health and Safety.** Insufficient supply and improper use of safety gear may cause injuries or fatal accidents.

2. Operation Phase

36. **Accident Risks.** If left without proper restoration and clearing of wastes, construction sites can be accident prone areas.

IV. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS AND/OR COMPONENTS

A. Screening

37. During project preparation, the Project was classified by ADB as Category B with impacts that are expected to be site-specific, few if any of them are irreversible and in most cases mitigation measures can be designed readily. The general subproject selection criteria have two criterions for environment:

- (i) the subproject will conform to ADB's Safeguards Policy Statement, 2009 (SPS) with respect to social and environment considerations. Subproject with significant (category A) environmental and resettlement impact, or with impacts on indigenous peoples (category A and B), will be excluded; and
- (ii) The proposed subproject will not be undertaken in critical habitats and protected areas³ including those either legally protected or officially proposed for protection.

38. The subproject selection criteria excludes Category A subprojects or subprojects likely to have significant impacts that are irreversible, diverse, or unprecedented. Subprojects with activities described in ADB's Prohibited Investment Activities List (Appendix 3) will also be excluded from the Project.

39. Subprojects selected will not have significant environmental impacts. Environmental guidelines for subproject selection in Table 2 provide further guidance to avoid or minimize adverse impacts during the identification and finalization of subprojects.

Table 1: Environmental Guidelines

Component	Environmental Guidelines for Subproject Selection
Overall (Applicable to all Subprojects)	Comply with all applicable national and local laws, regulations, and standards.
	Comply with ADB's SPS.
	Avoid land acquisition and involuntary resettlement and have no impacts on indigenous peoples.
	Avoid protected areas and areas of historical/cultural value.
Transport Infrastructure	Do not build new* roads and avoid widening existing roads.

³ Including national parks, wildlife reserves, conservation area, wetlands, ancient/cultural and archeological areas (Schedule 2, EPR).

	Do not build new* bridges.
	Avoid cutting trees on the roadside and if any trees have to be removed, plant two new trees for every tree lost.
	Consult the relevant archaeological agency regarding archaeological potential subproject areas to ensure that these are located in areas where there is a low risk of chance finds.
Education and District Infrastructure	Do not build new* buildings.
	Consult the relevant archaeological agency regarding archaeological potential subproject areas to ensure that these are located in areas where there is a low risk of chance finds.

Works will be confined to rebuilding and retrofitting.

B. Classification

40. Following screening through the subproject selection criteria and environmental guidelines for subproject selection, the implementing agency will classify subprojects at the earliest stage of preparation when sufficient information is available for this purpose. Classification will (i) reflect the significance of potential impacts or risks that a subproject might present; (ii) identify the level of assessment and institutional resources required for the safeguard measures; and (iii) determine disclosure requirements.

41. The Project will adopt ADB's classification system to reflect the significance of a subproject's potential environmental impacts. A subproject's category is determined by the category of its most environmentally sensitive component, including direct, indirect, cumulative, and induced impacts in the subproject's area of influence. Each proposed subproject will be scrutinized as to its type, location, scale, and sensitivity and the magnitude of its potential environmental impacts. Projects are assigned to one of the following three categories:

- (i) Category A. A proposed subproject is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works.
- (ii) Category B. A proposed subproject is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects.
- (iii) Category C. A proposed subproject is classified as category C if it is likely to have minimal or no adverse environmental impacts.

42. Classification will be aided through checklists in Appendix 4. The IA will submit the classification of each subproject to ADB Nepal Resident Mission (NRM) for review and approval. Category A subprojects will be excluded from the Project. To comply with ADB's SPS—Category B subprojects require the preparation of an IEE, while Category C subprojects will require a desk review of environmental implications.

C. Preparation of Environmental Assessments and Environmental Management Plans

43. Environmental assessment documents prepared for subprojects should meet both ADB and government requirements in order to streamline environmental procedures required by both ADB and government.

44. Adherence to the subproject selection criteria and environmental guidelines for subproject selection ensures that no subproject will have potential significant adverse environmental impacts. Subprojects with minimal or no adverse environmental impacts (Category C) will not require an environmental assessment or the preparation of an EMP. Subprojects with adverse environmental impacts which are not considered significant (Category B) require an IEE and an EMP. Appendix 5 provides an outline of an IEE which contains the EMP. A sample EMP table for small-scale infrastructure works is also in Appendix 5.

45. In preparing IEEs, secondary data will be collected for subproject-influence sites. An assessment of subproject impacts and risks on biodiversity and natural resources will also be undertaken. Issues regarding natural and critical habitats will be covered in the IEE report. In case of subprojects located within buffer zone of protected areas, a review of management plans and consultation with concerned management staff of the protected area, local communities, and key stakeholders will be undertaken and reflected in the IEE report. Pollution prevention for conservation of resources particularly technology for management of process wastes will be addressed in the IEE report. Occupational health safety and community health and safety will be properly addressed in the EMP section of the IEE report. In case subprojects are likely to have adverse impacts on physical cultural resources, appropriate mitigation measures will to be planned and reflected in the IEE. The IEE will also reflect meaningful consultation and disclosure process with a provision of grievance redress mechanism.

46. An EMP will be developed as part of the IEE. EMPs describe the environmental management measures that will be carried out to mitigate negative impacts or enhance the environment during implementation of a subproject, and the environmental monitoring to be conducted to ensure that mitigation is provided and is effective in reducing impacts, or to determine the long-term impacts of a subproject. EMPs will outline specific mitigation measures, environmental monitoring requirements, and related institutional arrangements, including budget requirements for implementation. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the subproject is designed, constructed, and operated in compliance with applicable laws and regulations and meets the requirements specified in this document. The level of detail and complexity of the environmental planning documents and the priority of the identified measures and actions will be commensurate with the subproject's impacts and risks. Key considerations include mitigation of potential adverse impacts to the level of "no significant harm to third parties," the polluter pays principle, the precautionary approach, and adaptive management.

47. All IEEs and EMPs will be conducted prior to the award of construction contracts. The bid documents will include the requirement to incorporate necessary resources to implement the EMP. The EMP will form part of the contract document, and if required, will need to be further updated during the construction phase of a subproject.

D. Review of Environmental Assessment Reports and EMPs

48. IEEs and EMPs reports will be reviewed initially by the PIU and if satisfactory, forwarded to the PMU for review and approval. The executing agency will then forward the IEEs and EMPs to ADB and if required the relevant government authority.

V. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

A. Consultation and Information Disclosure

49. Meaningful stakeholder consultation and participation is part of the project preparation and implementation strategy. As the Project focuses on rehabilitation—consultation, participation and disclosure can ensure information is provided and feedback is obtained and considered on the implementation of subprojects. Affected persons in particular will be consulted at various stages of subproject preparation to ensure: (i) incorporation of views/concerns of affected persons, particularly the vulnerable, on environmental impacts and mitigation measures; (ii) identification of any help required by affected persons during rehabilitation; and (iv) avoidance of potential conflicts for smooth project implementation.

50. It will also provide adequate opportunities for consultation/participation of all stakeholders and inclusion of the vulnerable in subproject process. Relevant information on any major changes to the Project or subproject scope will be shared with beneficiaries, affected persons, vulnerable groups, and other stakeholders.

51. At minimum, stakeholders will be consulted regarding the scope of an impact assessment before work is commenced and they will be informed of the likely impacts of the subproject and proposed mitigation once the draft environmental assessment and EMP documents are prepared. The safeguards documents will record views of stakeholders and indicate how these have been taken into account in subproject development. Consultations will be held with a special focus on vulnerable groups.

52. The key stakeholders to be consulted during subproject preparation, EMP implementation and subproject implementation include:

- (i) Beneficiaries;
- (ii) Elected representatives, community leaders, religious leaders and representatives of community based organizations;
- (iii) Local non-government organizations (NGOs);
- (iv) Local government and relevant government agency representatives, including local authorities responsible for land acquisition, protection and conservation of forests and environment, archaeological sites, religious sites, and other relevant government departments;
- (v) Residents, shopkeepers, business persons, and farmers who live and work alongside transport and education/district infrastructure which will be rehabilitated;
- (vi) Executing agency, implementing agency, PMU, PIU, DIU staff and consultants; and
- (vii) ADB and Government.

53. Information is disclosed through public consultation and making available relevant documents in public locations. The following documents will be submitted to ADB for disclosure on its website:

- (i) Subproject IEEs (including EMP)
- (ii) Updated IEEs (including EMP) and corrective action plan prepared during project implementation, if any
- (iii) Environmental monitoring reports

54. The executing agency will send a written endorsement to ADB for disclosing these documents on the ADB website. The implementing agencies will also provide relevant safeguards information in a timely manner, in an accessible place and in a form and language understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used. Disclosure will follow ADB's Public Communication Policy, 2011.⁴

B. Grievance Redress Mechanism

55. The objective the grievance redress mechanism (GRM) is to resolve complaints as quickly as possible and at the local level through a process of conciliation; and, if that is not possible, to provide clear and transparent procedures for appeal. A well-defined grievance redress and resolution mechanism will be established to resolve grievances and complaints in a timely and satisfactory manner. All affected persons will be made fully aware of their rights, and the detailed grievance redress procedures will be publicized through an effective public information campaign. The grievance redress process includes four levels:

56. **First level of GRM:** The first level and most accessible and immediate contact for the fastest resolve of grievances are the contractors, and design and supervision consultants on site. Prior to construction of any works, the PIU and DIU will ensure local community meetings are held to notify local residents and businesses of any temporary disturbances, and to inform them of the Project. If a local area committee (LAC) exists in the area, they should also be informed. If any complaints arise, the contractors, consultants, and DIU can immediately resolve the complaint on site. The PIU can also be involved in grievance redress at this stage. The PIU and DIU office phone number will be posted in public areas within the project area and construction sites. Any person with a grievance related to the project works can contact the project to file a complaint. The DIU offices will have a safeguards focal person to field and resolve complaints. The safeguards (environment and resettlement) focal person will document the complaint, and immediately address and resolve the issue with the contractor within 1-2 days, if the complaint remains unresolved at the field level. The DIU may seek the assistance of the consultant safeguards specialists (the environmental specialist or social safeguards specialist) to resolve the issue. The DIU safeguards focal person will notify the PIU safeguards focal person that a complaint was received, and whether it was resolved. The DIU safeguards focal person will fully document the following information: (i) name of the person; (ii) date complaint was received; (iii) nature of complaint; (iv) location, and (v) how the complaint was resolved.

57. **Second level of GRM:** Should the grievance remain unresolved; the DIU will forward the complaint to the PIU safeguards focal person. The person filing the grievance will be notified by DIU safeguards focal person that the grievance was forwarded to the PIU safeguards focal person. The PIU will address the grievance. Grievances will be resolved through continuous

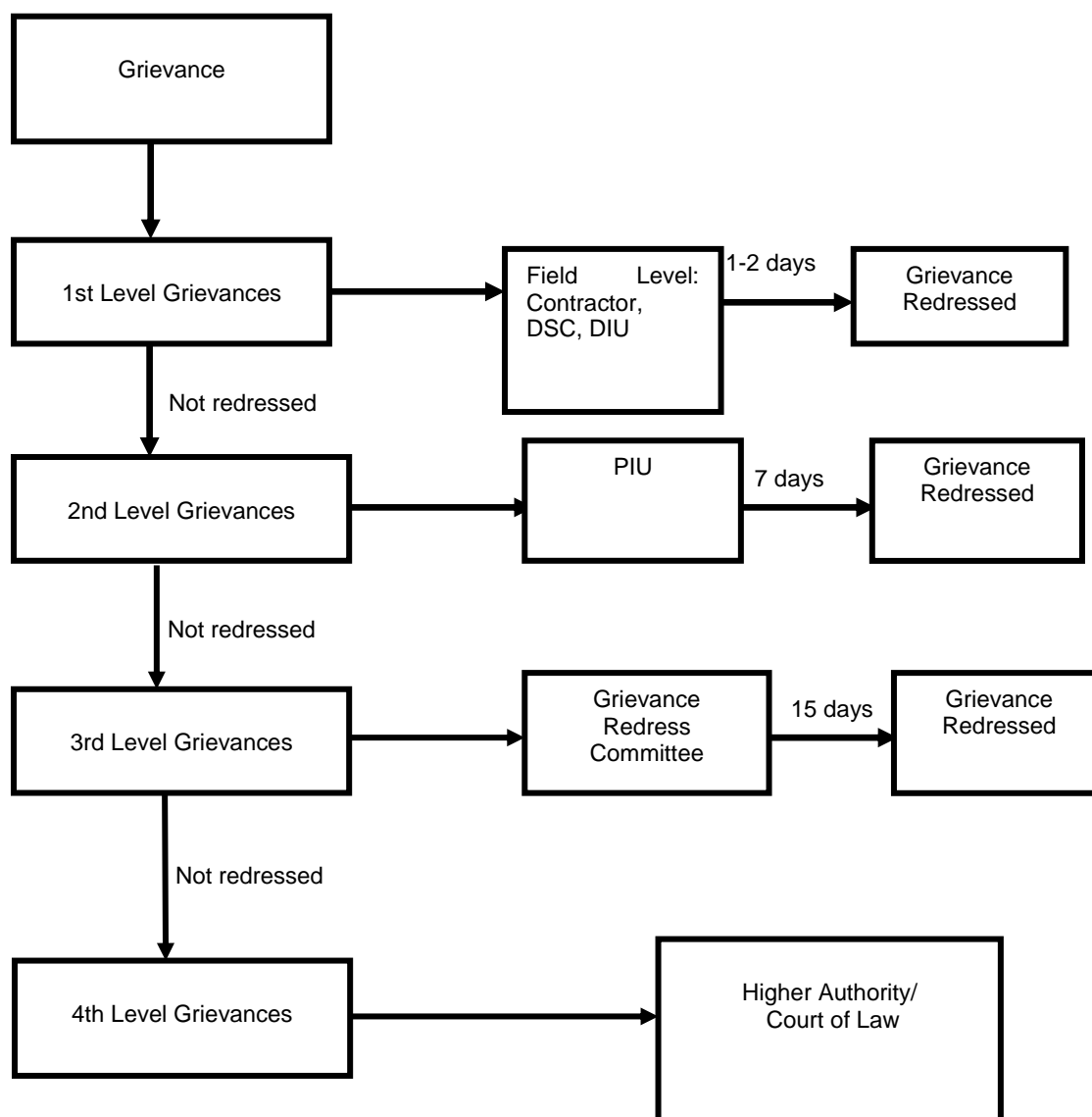
⁴ <http://beta.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

interactions with affected persons, and the PIU will answer queries and resolve grievances regarding various issues including environmental or social impacts. Corrective measures will be undertaken at the field level by the PIU safeguards focal person within 7 days. He/she will fully document the following information: (i) name of the person; (ii) date complaint was received; (iii) nature of complaint; (iv) location and (v) how the complaint was resolved.

58. **Third level of GRM:** Should the grievance remain unresolved, the PIU's project director will activate the third level of the GRM by referring the issue (with written documentation) to a Grievance Redress Committee (GRC) constituted by the EA, which will, based on review of the grievances, address them in consultation with the PMU, PIU, DIU, and affected persons. The GRC will consist of PMU leadership, affected persons, and local area committee, among others—determined to provide impartial, balanced views on any issues. The GRC should consist of at least five persons. A hearing will be called with the GRC, if necessary, where the affected person can present his/her concern and issues. The process will promote conflict resolution through mediation. The GRC will meet as necessary when there are grievances to be addressed. The GRC will suggest corrective measures at the field level and assign clear responsibilities for implementing its decision within 15 days. The functions of the GRC are as follows: (i) to provide support to affected persons on problems arising from environmental or social disruption, asset acquisition (where required), and eligibility for entitlements, compensation, and assistance; (ii) to record grievances of affected persons, categorize and prioritize them, and provide solutions within 15 days; and (iii) to report to the aggrieved parties developments regarding their grievances and decisions of the GRC. The PMU safeguards focal person will be responsible for processing and placing all papers before the GRC, recording decisions, issuing minutes of the meetings, and taking follow-up action to see that formal orders are issued and the decisions carried out.

59. **Fourth level of GRM:** In the event that a grievance is not addressed by the contractor, DSC, DIU, PIU or GRC, the affected person can seek legal redress of the grievance in the appropriate courts, the fourth level of the GRM, which is the formal legal court system. The GRM however does not prevent affected persons from seeking legal redress at any time. The grievance redress mechanism and procedure is depicted in Figure 1.

Figure 1: Grievance Redress Mechanism



Note: DIU-district implementation unit, DSC-design and supervision consultant, PIU= project implementation unit

60. Safeguard monitoring reports will include the following aspects pertaining to progress on grievances: (i) number of cases registered with the GRC, level of jurisdiction (first, second, and third levels), number of hearings held, decisions made, and the status of pending cases; and (ii) lists of cases in process and already decided upon may be prepared with details such as affected person, date of notice, date of application, date of hearing, decisions, remarks, actions taken to resolve issues, and status of grievance (i.e. open, closed, pending).

61. All costs involved in resolving the complaints (meetings, consultations, communication and reporting / information dissemination) will be borne by the PMU.

62. ADB's Accountability Mechanism⁵ will also be explained to affected households.

⁵ <http://beta.adb.org/site/accountability-mechanism/main>

VI. INSTITUTIONAL ARRANGEMENT AND RESPONSIBILITIES

63. MOF is the executing agency (EA) for the Project. A PMU within the EA will have a Safeguards (Environment and Resettlement) Focal Person to coordinate environmental and social safeguards planning and implementation with assistance from project management consultants (PMC). The PMC will include an Environment Specialist engaged intermittently during project implementation. The PMU will ensure that the EARF is followed during subproject implementation. Four PIUs will be formed in the implementing agencies: DOE, DOLIDAR, DOR, and DUDBC. Each PIU has Safeguards Focal Persons. The PIUs will be assisted by design supervision consultants (DSC) which will include an Environment Specialist engaged during project implementation. The PIUs will undertake screening and classification of subprojects for submission to the PMU and ADB. PIUs will prepare safeguards documents for approved subprojects. Safeguards documents will be reviewed and approved by the PMU and ADB. PIUs will be tasked with the day-to-day implementation and monitoring of safeguards plans. PIUs will also obtain all clearances and fulfill government requirements. The PIUs will work with DIU and District Implementation Monitoring Units (DIMU). DIUs will have a safeguards focal person who with the DIMU will be responsible for data required for safeguards plan preparation and monitoring and progress reports, and coordination with relevant departments such as departments of environment and forestry to consult and/or obtain endorsement if necessary.

VII. MONITORING AND REPORTING

64. The PIUs, with the DIU and the DIMU, will monitor and measure the progress of EMP implementation. The monitoring activities will be corresponding with the project's risks and impacts and will be identified in the IEEs for subprojects. Appendix 6 provides a content outline for monitoring reports. In addition to recording information of the work, deviation of work components from original scope, the PIUs with the DIUs will undertake site inspections and document review to verify compliance with the EMP and progress toward the final outcome.

65. DSCs will submit monthly monitoring and implementation reports to the PIUs, who will take follow-up actions, if necessary. PIUs will submit the quarterly monitoring and implementation reports to the PMU. The PMU will submit semi-annual monitoring reports to ADB. Project budgets will reflect the costs of monitoring and reporting requirements. Monitoring reports will be posted in a location accessible to the public.

66. The PMU will document monitoring results, identify the necessary corrective actions, and reflect them in a corrective action plan. The PMU, in each quarter, will study the compliance with the action plan developed in the previous quarter. Compliance with loan covenants will be screened by the executing agency.

67. ADB will review project performance against the executing agency's commitments as agreed in the legal documents. The extent of ADB's monitoring and supervision activities will be commensurate with the Project's risks and impacts. Monitoring and supervising of environmental safeguards will be integrated into the project performance management system. ADB will monitor projects on an ongoing basis until a project completion report is issued. ADB will carry out the following monitoring actions to supervise project implementation:

- (i) conduct periodic site visits for projects with adverse environmental impacts;
- (ii) review the periodic monitoring reports submitted by the executing agency to ensure that adverse impacts and risks are mitigated as planned and as agreed with ADB;

- (iii) work with executing agency to rectify to the extent possible any failures to comply with their safeguard commitments, as covenanted in the legal agreements, and exercise remedies to re-establish compliance as appropriate; and
- (iv) prepare a project completion report that assesses whether the objective and desired outcomes of the safeguard plans have been achieved, taking into account the baseline conditions and the results of monitoring.

APPENDIX 1: Nepal's Legal Framework and Regulatory Requirements for Road Projects

A. Nepal's Legal Framework and Regulatory Requirements for the Project

68. In Nepal, various legal instruments are in place to ensure the integration of environmental aspects in development proposals. This IEE reviewed the following legislative provisions and environmental guidelines to ensure compliance of the Project.

1. Policies

a. Interim Constitution of Nepal, 2007 (with latest amendments)

69. The Interim Constitution of Nepal provisions the right for every person to live in a clean environment. Article 35[5] also provisions that the State shall make necessary arrangements to maintain the natural environment. The State shall give priority to special protection of the environment, and rare wildlife, and prevent further damage due to physical development activities, by increasing awareness of the general public about environmental cleanliness.

b. The Tenth Plan (2002-2007)

70. The Tenth Plan (2002-2007) has identified EIA as a priority area, and it emphasizes on environmental monitoring of the projects that are under GoN EIA process. The Plan focuses on the need for setting-up national environmental standards with the strategy of internalizing environmental management into the development programmes. The Plan has also realized to carry out Strategic Environmental Assessment (SEA) with the long term policy of promoting environmental governance. The Plan emphasized on the local participation in environment conservation, according to the Local Self Governance Act 2055, through the local bodies and making them responsible and capable to manage local natural resources.

c. Three Year Interim Plan (2007/08 - 2009/010)

71. One of the objectives of the Transport sector is to develop the identified eight trade and transit corridors between neighboring Countries India and China. Other objective of the transport sector related to the project is to develop and operate safe roads by suitable road safety and traffic management activities including raising public awareness on such activities.

72. The environmental strategies of the Interim Plan are to launch development programs by internalizing environmental management; mobilize non-government private sector, local agencies and the public in increasing public awareness on environment; determine and implement additional by - Laws on air, water, soil and sound pollution; and by making action plans prioritize and implement Treaties and Conventions on environment, which Nepal has endorsed.

73. One of the policies of the Interim Plan is to institutionalize the environmental monitoring auditing through an effective implementation of approved environmental reports (IEE and EIA).

74. National Transport Policy, 2001/2002: The goal of the policy is to develop a reliable, cost effective, safe facility oriented and sustainable transport system that promotes and sustains the economic, social, cultural and tourism development of the Kingdom of Nepal as a whole.

75. Forest Policy: The Ministry of Forests and Soil Conservation (2009) also requires that all the costs related to the clearing off the forest, its transportation to the approved location and works related to environmental mitigation shall be borne by the project itself.

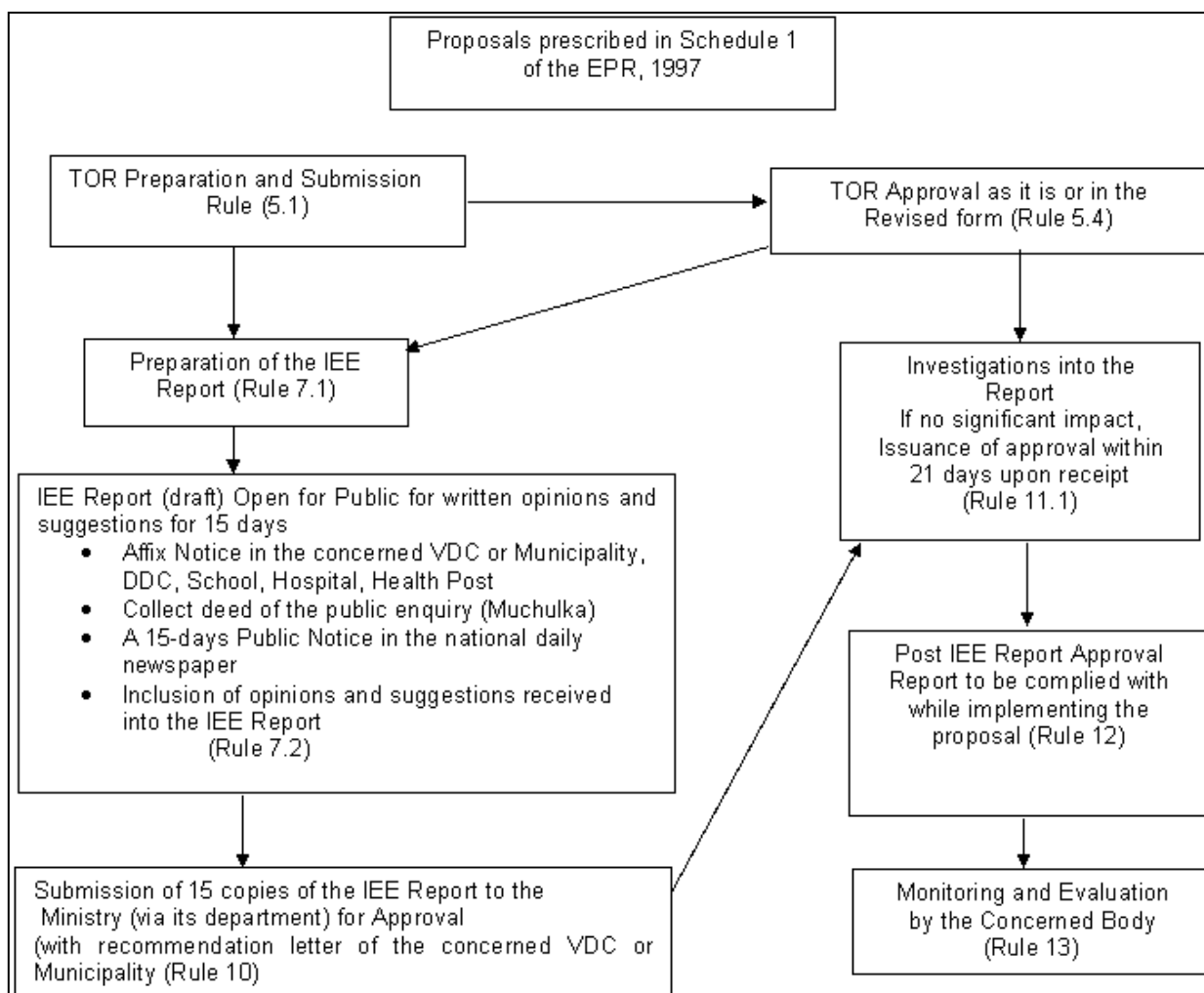
B. Acts and Rules

d. Environment Protection Act, 1996

76. The Environment Protection Act, 1996 and Environment Protection Rules, 1997 (as amended) contain several provisions to institutionalize the integration of environmental aspects in development projects including road sector, and empowers Ministry of Environment approve EIA report. Similarly, in case of IEE level study, line Ministry, which is Ministry of Physical Planning and Works is authorized to approve the Final IEE Report.

77. The Act recognizes the interdependence between development and the environment and shows the concerns for minimizing the impacts of environmental degradation on people, animal, and plant species and their physical surroundings. The Act obliges the proponent to undertake IEE and EIA of proposal, plans or projects which may cause changes in existing environmental condition and authorizes Ministry of Environment to clear all EIA and line Ministry for IEE study,

78. The Act empowers Ministry of Environment to prohibit the use of any matter, fuel, equipment or plant, which has adverse effects on the environment. The Act has provisions for polluters to compensate affected persons from polluting activities and empowers government to provide additional incentives to any industry, occupation, technology or process, which has positive impacts on environmental conservation. It provides the establishment of an Environmental Protection Fund to be used for environmental protection, pollution control and heritage conservation, and it gives the government authority to declare specific area as environmentally protected areas.

Figure 2: Environmental Clearance Procedure in Nepal for Category B Project**e. Environment Protection Rules, 1997 (with amendment)**

79. In the process of implementing EPA (1996) effectively the Environment Protection Rule (EPR) came into force in 1997 and was amended in 1999. The EPR contains elaborate provisions for the process to be followed during the preparation and approval of projects requiring EIAs and IEEs including scoping documents, terms of reference, public consultations and hearings, and environmental monitoring and auditing. The environmental legislation empowers the concerned Ministry to monitor the environmental activities including mitigation measures and Ministry of Environment for environmental auditing. For IEE, the concerned Ministry, which is the Ministry of Physical Planning and Works in case of the road projects, is authorized to approve the Final IEE Report. The EPR also lists the types of development activities requiring IEE or EIA level Study. It also gives an outline of content of the terms of reference document, IEE and EIA report.

f. Public Roads Act, 1974

80. The Department of Roads may temporarily acquire the land and other property adopting compensatory measures during the construction, rehabilitation and maintenance of the public roads according to the Act (Article 14 &15). The Act also empowers the DoR to operate quarries, borrow pits and other facilities during the road construction (Article 17). In sum, the Act facilitates the acquisition of land and property for the extraction of construction materials and development of other facilities as well as to maintain greenery along the roadside with adoption of compensatory measures.

g. Forest Act, 1993 (with amendments)

81. The Forest Act, 1993 recognizes the importance of forests in maintaining a healthy environment. The Act requires decision makers to take account of all forest values, including environment services and biodiversity, not just production of timber and other commodities. The basis of Act is resource oriented rather than use oriented.

82. The Forest Act, 1993, (with amendment) contains several provisions to ensure the development, conservation, management and sustainable use of forest resources, based on approved work plan. The work plan should contain a list of activities that should be implemented in the different forest categories - national forests, community forests, leasehold forests, private forests, and religious forests. Section 23 of the Act empowers the government to delineate any part of the national forest, which has 'special environmental, scientific or cultural importance', as a protected forest. Section 49 of the Act prohibits reclaiming lands, setting fires, grazing cattle, removing and damaging forest products, felling trees of plants, wildlife hunting and extracting boulders sand and soil from the National forest without the prior approval. However, the government may enforce Section 68 of the Forest Act to provide parts of any type of forest for the implementation of a national priority plan with the assurance that it does not adversely affect the environment significantly. As provisioned under the Act, while clearing the forest on the RoW of road, the implementing authority will co-ordinate with the District Forest Office. If necessary, the compensatory re-plantation will also be carried out at the rate of 1:25 under the provision of the Act.

h. Forest Rule, 1995

83. The Forest Rules 1995 (with amendment) further elaborate legal measures for the conservation of forests and wildlife. Based on forest legislation, thirteen plant species are included in the level protection list. Of them, GoN has banned the felling, transportation and export of Champ (*Michelia champaca*), Khayer (*Acacia catechu*) and Sal (*Shorea robusta*). The Rule also stipulates that the entire expenses for cutting and transporting the forest products in a forest area to be used by the approved project shall be borne by the proponent of the project.

i. Forest Products Collection and Sales Distribution Guidelines, 2001

84. Clause 3 to 10 of the Guideline have specified various procedure and formats for getting approvals for vegetation clearance, delineation of lands for vegetation clearance, evaluation of the wood volume etc. and government offices and officials responsible for the approval, delineation and valuation.

j. National Park and Wildlife Conservation Act, 1973 and NPWC Rules, 1973

85. The National Park and Wildlife Conservation Act (NPWCA) as amended in 1975, 1980, 1989 and 1993, aims to conserve and protect ecologically valuable areas, wildlife habitat, and wildlife species and their population, and to safeguard and manage flora and fauna in national parks, wildlife reserves, hunting reserves and nature conservation areas. It authorizes government to declare any peripheral area of national park or wildlife reserve as 'buffer zone'. The NPWCA also prohibits quarrying mines and stones etc. or remove any mineral, stone, boulders, soils or any other similar materials from the protected areas. The government may lift these restrictions only in rare cases such as to facilitate construction of Highway or any such project of national importance. Altogether 27 species of mammals, nine species of birds and three species of reptiles are protected by this Act.

k. Himalayan National Park Rules, 1979

86. The Rules made special provisions for people living within national parks to collect natural resources for their daily requirements, such as firewood, leaf litter, small pieces of timber and fodder. The Regulations also allow people to continue to graze their domestic animals on park rangeland.

l. Conservation Area Management Rules, 1996

87. Government brought in Conservation Area Management Rules in 1996 allowing for the establishment of conservation areas in Nepal, although Annapurna Conservation Area was established in 1986. These rules define conservation areas (CAs) as those reserves managed for integrated conservation and development in which many extractive uses are permitted, the management structure of participatory and tourism is permitted and promoted. Conservation through rural development is the primary goal.

88. Rule 8 outlines the constitution of a Conservation Area Management Committee (CAMC) in each Village Development Committee within the Conservation Area for the effective implementation of the construction works related to the community development activities in the Conservation Area, protection of the natural environment of that area and management program related to the balanced utilization of natural heritage. CAMC prepares a Management Action Plan for the protection of the natural environment, community development through sustainable use of natural resources, development of natural heritage and its balanced management within its own area. CAMC operates the various creative activities for the prevention of calamities like landslide and soil-erosion, protection of the forest products, conservation of natural resources and wildlife, environmental management and community development.

m. Buffer Zone Management Rules, 1995

89. Government introduced the buffer zone concept through the fourth amendment to the NPWCA 1973 in 1993 which defined 'Buffer Zone' as an area outside the national park/wildlife reserve which could provide forest products including grasslands on a regular basis to local communities. The main objective is to reduce pressure of local communities for forest products and grazing in national parks or wildlife reserves. The Act empowered the government to declare any surrounding area of parks with clear boundaries through notification in the Nepal Gazette. The amended NPWC Act made provisions for sharing park (or reserve) revenues with

the local community; the fund is to be used for community development activities in the buffer zone settlements. The revenue is disbursed through a Buffer Zone Management Committee.

90. The Buffer Zone Management Rules prescribes rules for conservation, development and management of natural resources, biodiversity, forest resources, and wildlife in a buffer zone. No person unless in possession of written permission from the warden shall a) occupy any land without legal ownership or cut trees, clear forests or cultivate forestland, b) conduct any activities damaging forest resources, c) excavate stone, earth, sand or mine, d) use any harmful poison or explosive substances into the river, stream or source of water flowing in the buffer zone, e) hunt illegally and do any acts damaging to wildlife. However, it does not interfere with agricultural activities and cottage industries operated in buffer zone settlements. Forests are handed over to the community for management as “Community Buffer Forest”. The rightful owner of the land within the buffer zone may develop, conserve, manage ‘buffer private forest’ and utilize the forest products as he/she wishes.

n. Plant Protection Act, 1964 and Plant Protection Rules, 1974

91. Plant protection Act and Rules makes a provision for establishing plant diseases investigation and treatment laboratories, checkpoints and plant quarantine stations. This Act prohibits import of diseased plants or seeds or related materials, which may transmit the disease to the plants. Plant Protection Rules make treatment requirements for importing or exporting plants or materials for producing plants, including phyto-sanitary certificates. The importer has to produce ‘plant protection certificate’, and the Plant Protection Officer can confiscate the diseased plant or plant materials.

o. Local Self-Governance Act, 1999

92. The Local Self-Governance Act, 1999 empowers the local bodies for the conservation of soil, forest, and other natural resources and implementation of environmental conservation activities. The Village Development Committees (VDCs), Municipalities and District Development Committees (DDCs) are mandated to take up the responsibilities for the formulation and implementation of a programme relating to the protection of the environment and biodiversity, and to give adequate priority for the protection of the environment during the formulation of local level plans and programme.

p. Land Acquisition Act, 1977

93. The Land Acquisition Act (1977, as amended 1993) guides the compulsory acquisition of land. GoN can acquire land at any place and in any quantity by giving compensation pursuant to the Act for the land acquired for any public purpose(s) or for operation of any development project initiated by GoN institutions

q. Soil and Watershed Conservation Act, 1982

94. Soil and Watershed Conservation Act makes provision to control floods landslides (watershed conservation rules, 1985). The watershed conservation office is authority and district watershed conservation committee must implement watershed conservation practices and public participation for soil and land protection.

r. Water Resources Act, 1992

95. Water Resources Act (1992) makes provision for the rational use of surface and underground water. The act seeks to prevent environment and hazardous effects from the use of water and prohibit water pollution by chemicals, industries waste. Water may only be used in manner that does not permit soil erosion, landslide or flood. Pollution of drinking water is prohibited under the Nepal drinking water corporation act (1989).

2. The Aquatic Animal Protection Act, 1961 (with amendment)

96. This Act indicates an early recognition of the value of wetlands and aquatic animals. Section 3 renders punishment to any party introducing poisonous, noxious or explosive materials into a water source, or destroying any dam, bridge or water system with the intent of catching or killing aquatic life. Under Section 4 of the Act, Government is empowered to prohibit catching, killing and harming of certain kinds of aquatic animals by notification in Nepal Gazette.

3. Motor Vehicle and Transportation Management Act, 1993

97. This act sets standard for vehicles emission and mechanical condition for vehicle registration by the Transport Management Office (TMO) and the TMO can deny a permit based on environmental factor. Standard are set for petrol and diesel engine under the Nepal Vehicle Mass Emission Standard, 1999.

4. Child Labour (Prohibition and Regulation) Act, 2000

98. Child Labour (Prohibition and Regulation) Act has been enacted and enforced with a view to adopting ILO Convention concerning Elimination of Worst Forms of Child Labour (C182) and Minimum Age Convention (C138). Although the Act was promulgated in 2000, it came into force only in November 2004 and the Rules to be framed under this Act came into force only in January 2006. This Act has defined the "child" as a person who has not attained the age of 16 years. Section 3 has prohibited to employing a child below the age of 14 to work as a labourer. In addition, the same Section provides that nobody shall engage a child (between the ages of 14 to 16 years of age).

5. Labour Act, 1991

99. As regards to "Labour Employment" the Labour Act has made provisions for recruitments, minimum wages and remunerations, minimum standard for working places like arrangement of residence of the workers at site etc. The Act also provides for health and safety of the employees as well as a healthy, safe and secured environment for workers. This Act regulates all labour issues pertaining to an enterprise i.e. all labour issues of industrial, commercial, transport and construction labour. The Act has defined 'minor' as a person who has attained the age of fourteen years but below eighteen years. Except in the conditions as prescribed a minor may be employed only within the day-time; adequate instructions or training should be given before employing a minor at work. Employing any non-Nepalese specialists on a contract basis would need permission from the Labour Department.

C. Guidelines for the Road Sector

100. Guidelines, including the draft EIA Guidelines for Road Sector, 1996, facilitate the proponents to prepare environmental assessment reports. These guidelines have been thoroughly reviewed and all pertinent issues have been incorporated during the preparation of this Report. The DOR Environmental Management Guidelines (EMG), 1997 provides guidance to the Proponent to integrate environmental mitigation measures, particularly on the management of quarries, borrow pits, stockpiling of materials and spoil disposal, earthworks and slope stabilization, location of stone crushing plants, etc. The Environmental Guidelines for Local Development also encourages the Proponent to incorporate environmental issues during project design and implementation.

6. Environmental Management Guidelines, GESU/DoR

101. Originally, a Unit was set up in 1988 as the “Environmental Management Coordination Unit” of the DoR to support the Arun Access Road for the proposed Arun-III Hydropower Project and reformed as a permanent cell under Planning & Design Branch with a new name as Geo-Environment Unit (GEU) in the year 1994.

102. In 2005, DoR, in its Master Plan for Strategic Road Network, stressed on development of road to supplement Poverty Reduction Program. After the initiation of implementation of enhancing poverty reduction impacts in some road projects in 2006, assisted by Asian Development Bank (ADB), the role of GEU was further expanded to incorporate the social aspects of road development projects. Thus DoR has renamed GEU into Geo- Environmental & Social Unit (GESU) to cover the social aspect and render prompt and efficient services with the development & strengthening of the roads.

103. Environmental Management Guidelines, GESU/DOR, July 1999 have been prepared as part of the program undertaken jointly by GoN and the World Bank under the Road Maintenance and Rehabilitation Project. These Guidelines were formally approved by Minister level decision on Kartik 22, 2053 BS (1997). The Guidelines are the part of operational practices for all road maintenance, rehabilitation and construction activities under DoR. The guideline consists of environmental mitigation measures to be incorporated into DOR Sub-projects, procedures for public participation, and socio-economic considerations. The environmental mitigation measures are broken down into twelve categories including (i) quarries; (ii) borrow pits; (iii) spoil and construction waste disposal; (iv) work camp location and operation; (v) labour camp location and operation (vi) earthwork/slope stabilization (vii) use of bitumen (viii) stockpiling of materials (ix) explosive, combustible and toxic materials management (x) setting up and operation of stone crushing plants (xi) water management (xii) air and water pollution.

104. Implementation methods for undertaking mitigation measures for each of the activities are also given in the guideline. The Guideline suggests methods for determining how and when the public should be included in the environmental analysis. The guidelines also advise on socio-economic impacts and strategies for reducing or avoiding the potential negative impacts and for maximizing the beneficial impacts to local residents. The socio-economic impacts include important issues of land acquisition and compensation and other economic impacts with markets for agriculture production, agriculture inputs, nutrition, extraction of natural resources beyond replenishment, migration and influx of migrants, land speculation, illegal logging and mining, portering, etc. It also includes impacts on cultural heritage.

105. The Environmental and Social Management Framework (ESMF), DoR/GESU, 2008 The Environmental and Social Management Framework (ESMF) is prepared to compile in an overview and guidance manner, various safeguard and compliance aspects of environmental and social issues related with the road construction and development.

106. The ESMF intends to provide technical and managerial inputs and guidance into the design of the strategic roads (both designated for rehabilitation and, to lesser extent, to new construction), through identification of key environmental and social issues related to the foreseen projects, mitigate potential impacts and concerns and, devise opportunities to enhance the benefits. The framework integrates in a step-wise approach the most important environmental and social considerations into all stages of project preparation, implementation, monitoring and operation.

7. Other Guidelines and Manuals

107. The following guidelines were reviewed and applied during the preparation of the report:

- Reference Manual for Environmental and Social Aspects of Integrated Road Development; MoPPW/DoR.HMGN,2003
- Environmental Management Guidelines for Roads and Bridges, GEU/DoR,1997
- Public Work Directives, HMGN,2002
- Guide to Road Slope Protection Works, DoR

B. International Conventions and Treaties

108. Nepal is a signatory to many international agreements, conventions etc. related to environmental conservation:

- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989
- The Vienna Convention for Protection of Ozone Layer, 1985
- UN Framework Convention on Climate Change, 1992
- The Agreement on the Network of Aquaculture Centres in Asia and the Pacific, 1988
- The Plant Protection Agreement for the South East Asia and the Pacific (as amended), 1956,
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora, (CITES), 1973
- The Ramsar Convention (Convention on Wetlands of International Importance Especially as Water Fowl Habitat), 1971
- The Convention for Protection of the World Cultural and Natural Heritage, 1972
- The UN Convention to Combat Desertification, 1994

D. Permissions and Clearance Required

109. The legal framework of the country consists of several acts, notifications, rules, and regulations to protect environment and wildlife. List of required clearances / permissions related to environment has been summarized in **Table 1**.

Table 1: Permissions and Clearance Required

S.N.	Clearance	Act/Rule/Notification/Guideline	Concerned Agency	Responsibility
A. Pre-construction Stage				
1	Environmental Clearance (categorized as "B" with IEE requirement)	Environment Protection Act 1996 and Environment Protection Rules, 1997 (with amendments).	Ministry of Physical Planning and Works	Department of Roads / PD, DOR (ADB)
2	Land Acquisition and Compensation	Land Acquisition Act , 1977(with amendments)	Ministry of Physical Planning and Works	Department of Roads / PD, DOR (ADB)
3	Forestry clearance for felling of Trees	Forest Act, 1993 (with amendment), Forest Rule, 1995, Forest Products Collection and Sales Distribution Guidelines, 2001 and Local Self-Governance Act, 1999	Ministry of Forest and Soil Conservation	Department of Roads / PD, DOR (ADB)
B. Implementation Stage				
4	Permission for construction material quarrying (stone, cobble, sand, gravel, soil etc.)	Local Self-Governance Act, 1999 and Soil and Watershed Conservation Act, 1982 and Watershed Conservation Rule, 1985. EPA,1996 and EPR, 1997 (with amendments)	Concerned Project and Concerned VDC, DDC and Municipality	Contractor
5	Consent to operate Hot mix plant, Crushers, Batching Plant	Local Self-Governance Act, 1999	Concerned Project and Concerned VDC, DDC and Municipality	Contractor
6	Consent for disposal of sewage from labour camps	Water Resource Act, 1992	Concerned Project	Contractor
7	Pollution Under Control Certificate	Motor Vehicle and Transportation Management Act, 1993	Department of Transport	Contractor

Source: TPPF Consultants (2012)

APPENDIX 2: Environmental Safeguards Policy Principles

1. Use a screening process for each proposed project, as early as possible, to determine the appropriate extent and type of environmental assessment so that appropriate studies are undertaken commensurate with the significance of potential impacts and risks.
2. Conduct an environmental assessment for each proposed project to identify potential direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic (including impacts on livelihood through environmental media, health and safety, vulnerable groups, and gender issues), and physical cultural resources in the context of the project's area of influence. Assess potential transboundary and global impacts, including climate change. Use strategic environmental assessment where appropriate.
3. Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts and document the rationale for selecting the particular alternative proposed. Also consider the no project alternative.
4. Avoid, and where avoidance is not possible, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts by means of environmental planning and management. Prepare an environmental management plan (EMP) that includes the proposed mitigation measures, environmental monitoring and reporting requirements, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. Key considerations for EMP preparation include mitigation of potential adverse impacts to the level of no significant harm to third parties, and the polluter pays principle.
5. Carry out meaningful consultation with affected people and facilitate their informed participation. Ensure women's participation in consultation. Involve stakeholders, including affected people and concerned nongovernment organizations, early in the project preparation process and ensure that their views and concerns are made known to and understood by decision makers and taken into account. Continue consultations with stakeholders throughout project implementation as necessary to address issues related to environmental assessment. Establish a grievance redress mechanism to receive and facilitate resolution of the affected people's concerns and grievances regarding the project's environmental performance.
6. Disclose a draft environmental assessment (including the EMP) in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. Disclose the final environmental assessment, and its updates if any, to affected people and other stakeholders.
7. Implement the EMP and monitor its effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports.
8. Do not implement project activities in areas of critical habitats, unless (i) there are no measurable adverse impacts on the critical habitat that could impair its ability to function, (ii) there is no reduction in the population of any recognized endangered or critically endangered species, and (iii) any lesser impacts are mitigated. If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area. In an area of natural habitats, there must be no significant conversion or degradation, unless (i) alternatives are not available, (ii) the overall benefits from the project substantially outweigh the environmental costs, and (iii) any conversion or degradation is appropriately mitigated. Use a precautionary approach to the use, development, and management of renewable natural resources.
9. Apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines. Adopt cleaner production processes and good energy efficiency practices. Avoid pollution, or, when avoidance is not possible, minimize or control the intensity or load of pollutant emissions and discharges, including direct and

indirect greenhouse gases emissions, waste generation, and release of hazardous materials from their production, transportation, handling, and storage. Avoid the use of hazardous materials subject to international bans or phaseouts. Purchase, use, and manage pesticides based on integrated pest management approaches and reduce reliance on synthetic chemical pesticides.

10. Provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.

11. Conserve physical cultural resources and avoid destroying or damaging them by using field-based surveys that employ qualified and experienced experts during environmental assessment. Provide for the use of “chance find” procedures that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.

¹ Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

² Child labor means the employment of children whose age is below the host country’s statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 “Minimum Age Convention” (www.ilo.org).

³ A list of pharmaceutical products subject to phaseouts or bans is available at <http://www.who.int>.

⁴ A list of pesticides and herbicides subject to phaseouts or bans is available at <http://www.pic.int>.

⁵ A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at <http://www.unep.org/ozone/montreal.shtml>.

⁶ A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

⁷ A list of hazardous chemicals is available at <http://www.pic.int>.

⁸ A list is available at <http://www.cites.org>.

⁹ As defined by the Basel Convention; see <http://www.basel.int>.

¹⁰ This does not apply to project sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a project sponsor’s primary operations.

¹¹ This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

¹² This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

APPENDIX 3: ADB Prohibited Investment Activities List

The following do not qualify for Asian Development Bank financing:

- (i) production or activities involving harmful or exploitative forms of forced labor¹ or child labor;²
- (ii) production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phaseouts or bans, such as (a) pharmaceuticals,³ pesticides, and herbicides,⁴ (b) ozone-depleting substances,⁵ (c) polychlorinated biphenyls⁶ and other hazardous chemicals,⁷ (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,⁸ and (e) transboundary trade in waste or waste products;⁹
- (iii) production of or trade in weapons and munitions, including paramilitary materials;
- (iv) production of or trade in alcoholic beverages, excluding beer and wine;¹⁰
- (v) production of or trade in tobacco;¹⁰
- (vi) gambling, casinos, and equivalent enterprises;¹⁰
- (vii) production of or trade in radioactive materials,¹¹ including nuclear reactors and components thereof;
- (viii) production of, trade in, or use of unbonded asbestos fibers;¹²
- (ix) commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and
- (x) marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

APPENDIX 4:
Rapid Environmental Assessment (REA) Checklist (Education and District Infrastructure)

Instructions:

- (i) The PMU completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to ADB.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Subproject Title:

IA:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following areas:			
▪ Underground utilities			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
▪ Bay			
B. Potential Environmental Impacts Will the Project cause...			
▪ Encroachment on historical/cultural areas?			
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?			

Screening Questions	Yes	No	Remarks
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?			
▪ Dislocation or involuntary resettlement of people?			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?			
▪ Increased noise and air pollution resulting from increased traffic volume?			
▪ Occupational and community health and safety risks?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ Generation of dust in sensitive areas during construction?			
▪ Requirements for disposal of fill, excavation, and/or spoil materials?			
▪ Noise and vibration due to blasting and other civil works?			
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?			
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?			
▪ Risks to community health and safety caused by management and disposal of waste?			

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none">▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

A Checklist for Preliminary Climate Risk Screening

Country/Project Title:

Sector :

Subsector:

Division/Department:

Screening Questions		Score	Remarks ⁶
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?		
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?		
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): _____

Other Comments: _____

Prepared by: _____

⁶ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

**APPENDIX 5:
Rapid Environmental Assessment (REA) Checklist (Transport Infrastructure)**

Instructions:

- (i) The PMU completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to ADB.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Subproject Title:

IA:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
B. Potential Environmental Impacts Will the Project cause...			
▪ encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?			
▪ encroachment on precious ecology (e.g. sensitive or protected areas)?			

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> ▪ alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site? 			
<ul style="list-style-type: none"> ▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction? 			
<ul style="list-style-type: none"> ▪ increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing? 			
<ul style="list-style-type: none"> ▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation during project construction and operation? 			
<ul style="list-style-type: none"> ▪ noise and vibration due to blasting and other civil works? 			
<ul style="list-style-type: none"> ▪ dislocation or involuntary resettlement of people? 			
<ul style="list-style-type: none"> ▪ dislocation and compulsory resettlement of people living in right-of-way? 			
<ul style="list-style-type: none"> ▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? 			
<ul style="list-style-type: none"> ▪ other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress? 			
<ul style="list-style-type: none"> ▪ hazardous driving conditions where construction interferes with pre-existing roads? 			
<ul style="list-style-type: none"> ▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations? 			
<ul style="list-style-type: none"> ▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents? 			
<ul style="list-style-type: none"> ▪ accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials? 			
<ul style="list-style-type: none"> ▪ increased noise and air pollution resulting from traffic volume? 			
<ul style="list-style-type: none"> ▪ increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road? 			
<ul style="list-style-type: none"> ▪ social conflicts if workers from other regions or countries are hired? 			

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> ▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? 			
<ul style="list-style-type: none"> ▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation? 			
<ul style="list-style-type: none"> ▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning. 			

A Checklist for Preliminary Climate Risk Screening

Country/Project Title:

Sector :

Subsector:

Division/Department:

Screening Questions		Score	Remarks ⁷
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?		
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?		
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): _____

Other Comments: _____

Prepared by: _____

⁷ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

APPENDIX 6: Outline of an Environmental Assessment Report

This outline is part of the Safeguard Requirements 1. The substantive aspects of this outline will guide the preparation of an environmental assessment⁸, although not necessarily in the order shown.

A. Executive Summary

This section describes concisely the critical facts, significant findings, and recommended actions.

B. Policy, Legal, and Administrative Framework

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

C. Description of the Project

This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

D. Description of the Environment (Baseline Data)

This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

E. Anticipated Environmental Impacts and Mitigation Measures

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

⁸ An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical environment impact assessment (EIA) report contains the following major elements, and an initial environment examination (IEE) may have a narrower scope depending on the nature of the project.

F. Analysis of Alternatives

This section examines alternatives to the proposed project site, technology, design, and operation—including the no project alternative—in terms of their potential environmental suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

G. Information Disclosure, Consultation, and Participation

This section:

- (i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;
- (ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and
- (iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

H. Grievance Redress Mechanism

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

I. Environmental Management Plan

This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

(i) Mitigation:

- (a) identifies and summarizes anticipated significant adverse environmental impacts and risks;
- (b) describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
- (c) provides links to any other mitigation plans (for example, for involuntary resettlement, indigenous peoples, or emergency response) required for the project.

(ii) Monitoring:

- (a) describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and (b) describes

monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

(iii) Implementation arrangements:

(a) specifies the implementation schedule showing phasing and coordination with overall project implementation;

(b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and

(c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

(iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

J. Conclusion and Recommendation

This section provides the conclusions drawn from the assessment and provides recommendations

Sample EMP Table for Small-Scale Construction

A sample EMP table is provided that should be adjusted based on specific subproject context, and should be treated as environmental specifications for construction.

Small-scale construction activities may cause impacts and nuisance to nearby surroundings, and these need to be avoided or mitigated through application of good engineering practices and strict environmental safeguards measures including use of environment-friendly construction materials and equipment, waste management techniques especially for construction dust and debris, noise control, site management, safety controls, and provision of clean water and sanitation facilities.

This sample EMP table covers potential adverse environmental impacts and corresponding mitigation measures. It is expected that all Contractors working on small-scale construction works under Component 1 and 3 will adhere to this as part of the bidding specifications and the Contractor's Work Plan. This EMP should include the environmental safeguards issues that may occur during construction and solutions or what the Contractor must do to solve these problems.

Table 1: Sample Format for Environmental Management Plan for Small Civil Works

Phase	Impact/Issue	Measure
Site Screening	<u>Adequate space and access</u> — possible interruption within vicinity.	The selection should avoid sensitive environment and land issues which may be caused by construction and/or renovation.
Design	<u>Drawing and planning</u> the construction of buildings by adapting to adjoining physical landscape and minimizing possible environmental issues.	Minimization measures for adverse environmental impacts should be introduced in the construction design.
	<u>Barrier-free</u> will be integrated in the design to the extent possible.	Care will be taken in the design to provide free access to handicapped persons in all public areas of the building..
	<u>Safe disposal of sewer water</u> from toilets	To the extent possible sewer will be treated in appropriate septic tank for anaerobic treatment with retention of at least 48 hours and be disposed of in town sewer if existing. Where town sewer is not available, an aerobic treatment will be provided in the form of a soakaway pit. The pit will be located at least 40 meters away from any water wells.
Construction	<u>Dust:</u> Dust, debris, and particulate materials from construction will blow to surrounding structures and cause nuisance to surrounding families and businesses, especially vulnerable persons (children, elders, etc).	The contractor will spray water to reduce dust when the weather is dry and periodically clean stagnant debris.
	<u>Noise:</u> Noise from construction machinery and equipment will disturb others especially in areas with hospitals, homes for the	The contractor will use environment-friendly construction materials and equipments and limit construction hours to minimize possible disturbance to local livelihood. The

	elderly, and schools.	contractors will fence off construction site to reduce any possible annoyance to surrounding communities.
	<u>Construction wastes:</u> waste materials and hazardous materials should be adequately and safely disposed.	The contractor will reduce waste generation whenever feasible. The contractor should separate hazardous wastes from other wastes and handle them according to established environmental guidelines. The contractor should separate recyclable wastes from non-recyclable ones. All wastes should be properly handled. Any illegal waste dumping or burning will be prohibited.
	<u>Disturbance:</u> Nearby offices and residents will be disturbed by prolonged construction.	The contractor will perform construction activities within appropriate timeframes which does not disturb work of offices or nearby residents.
	<u>Sanitation:</u> Sanitation for the workers at the construction site is inadequate leading to unclean working environment.	The contractor will provide sanitation facilities for workers.
	<u>Contamination:</u> Contamination of water supply or source within the vicinity of the site is caused by the construction activities.	The contractor will implement necessary measures to prevent possible contamination to water supply or source in the surrounding area.
	<u>Pedestrian security and traffic congestion:</u> Construction site may cause safety concern for pedestrians, especially for school children, during construction. Similarly, traffic congestion during construction may be caused due to the increase of heavy traffic (of the construction itself and from traffic detours) in high traffic avenues and exit ramps.	The contractor will fence of the site for general safety measures; traffic re-routing (if required) should be appropriately managed and planned for.
	<u>Interruption of services:</u> Water, electricity, telephone, transport routes may be interrupted during construction.	The contractor will implement necessary measures to prevent any interruption to access to public services.
	<u>Informing the public:</u> People would need to know about construction and work schedules, interruption of services, or traffic.	The contractor will put signboard summarizing the construction activities and schedule for completion of tasks.
Post-Construction	<u>Site Clearing:</u> Cleaning the site after construction and disposing wastes properly so that they are not dangerous to the environment.	The contractor will clean the site carefully and remove all waste materials as spelled out during construction bidding.
Others	<u>Other identified environmental safeguard issues.</u>	

All measures should be included in bidding document for inclusion in the contractor's workplan as part of the specifications for construction that will be followed to address any potential environmental safeguard concerns.

APPENDIX 7: Environmental and Social Monitoring Report Outline

The level of detail and comprehensiveness of a monitoring report is commensurate with the complexity and significance of social and environmental impacts. A safeguard monitoring report may include the following elements:

- (a) Background/context of the monitoring report (adequate information on the project, including physical progress of project activities, scope of monitoring report, reporting period, and the monitoring requirements including frequency of submission as agreed upon);
- (b) Changes in project scope and adjusted safeguard measures, if applicable;
- (c) Qualitative and quantitative monitoring data;
- (d) Monitoring parameters/indicators and methods based on the monitoring plan/program previously agreed upon with ADB;
- (e) Monitoring results compared against previously established benchmarks and compliance status (e.g., national environmental emission and ambient standards and/or standards set out in the World Bank Group's Environmental, Health and Safety Guidelines guidelines; timeliness and adequacy of environmental mitigation measures; involuntary resettlement compensation rates and timeliness of payments, adequacy and timeliness of involuntary resettlement rehabilitation measures including serviced housing sites, house reconstruction, livelihood support measures, and training; budget for implementing environment management plan (EMP), resettlement plan, or indigenous people plan, timeliness and adequacy of capacity building, etc.);
- (f) Monitoring results compared against the objectives of safeguards or desired outcomes documented (e.g. involuntary resettlement impacts avoided or minimized; livelihood restored or enhanced; indigenous people (IP's) identity, human right, livelihood systems and cultural uniqueness fully respected; indigenous people not suffer adverse impacts, environmental impacts avoided or minimized, etc.);
- (g) If noncompliance or any major gaps identified, include a corrective action plan;
- (h) Records on disclosure of monitoring information to affected communities;
- (i) Identification of key issues, or complaints from affected people, or recommendations for improvement;
- (j) Monitoring adjustment measures recommended based on monitoring experience/trends and stakeholders response;
- (k) Information about actual institutional arrangement for implementing the monitoring program/plan provided or adjusted, as may be required;
- (l) Proposed items of focus for the next report and due date.