



SAFEGUARD IMPLEMENTATION
HOW CAN WE MAKE IT MORE MEANINGFUL?

ASSESSMENT OF THE SOUTH ASIA EXPERIENCE

ASIAN DEVELOPMENT BANK

ADB

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Foreword

In 2009, the Asian Development Bank released its Safeguard Policy Statement, which addresses requirements for proper consideration of all potential environmental and social issues associated with the development projects that it funds. As expected, implementation of the ADB safeguard requirements has been uneven, depending on the technical complexity of the project and national institutional capacity. A capacity development technical assistance (CDTA) initiative was therefore undertaken in 2013 to determine the common safeguard challenges in development projects and their possible solutions. The CDTA examined representative ADB-supported infrastructure projects in Bhutan, India, and Nepal to inform a comprehensive initiative to improve the design, implementation, and monitoring of ADB safeguards, which began in early 2015.

The objectives of the CDTA were to determine the (i) constraints and weaknesses in the safeguard systems in each country; (ii) gaps in national safeguard laws and institutional processes that may hinder effective implementation of safeguards; (iii) issues with safeguard design, implementation, and monitoring at the project level; (iv) effectiveness of previous safeguard training (to the extent that this could be determined without directly observing and evaluating courses); and (v) residual capacity needs of project staff, government agencies, consultants, nongovernment organizations, contractors, and local communities involved with infrastructure projects in the three countries. This publication presents the observations from the CDTA and suggests how to make the safeguard process in South Asia (and elsewhere) more meaningful.

In general, the safeguard process is meaningful and relevant if it protects important environmental and social parameters in the project areas. However, it is often difficult to stage and implement all required safeguards (especially social safeguards, which have the added complexity of intensive and sometimes conflicted social interactions). These challenges can reduce the effectiveness of planned measures. In future, the safeguard strategy must therefore work to bridge the gap between (i) designing, planning, and implementing effective safeguards; and (ii) the inertia associated with project approval fatigue, concern about the required effort in engagement and training of new partners, and the significant effort required to schedule, plan, and monitor the implementation of safeguard measures. This document explores the required bridging, based on observations and insights from representative projects in South Asia.

The overall outcome of improved safeguard design, implementation, and monitoring is expected to be the implementation of required development initiatives (service and infrastructure projects) with maximum positive social benefits that are well distributed, minimum (acceptable) negative environmental impacts, and environmental enhancements in some cases (long-lasting net positive environmental gains, despite expected transient negative impacts during the construction phase). This is the philosophy and expectation carried into the CDTA described in this document. The study brings to light some inherent issues associated with safeguard implementation.

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The authors would like to acknowledge the kind assistance of ADB staff in Manila and in the ADB resident missions in India and Nepal, who took the time to identify suitable projects for examination during the capacity development technical assistance, set up the missions, and discuss their experiences with the safeguard monitoring process. The authors are also grateful for all the assistance and facilitation provided by government and project staff, nongovernment organizations, consultants, and local communities in Bhutan, India, and Nepal (please refer to the report for a list of names). The agencies and projects in Bhutan include the Ministry of Finance, the National Environment Commission, the Dagachhu Hydropower Development Subproject, and Green Power Development Project, the Urban Infrastructure Project, and the Road Network Project II. Agencies and projects in India include the Power Grid, New Delhi; the Bangalore Metro Rail Company, Bangalore Metro Rail Transit System Project; the Karnataka Urban Infrastructure Development and Finance Corporation, North Karnataka Urban Sector Investment Program Tranche 3; the Assam Urban Infrastructure Investment Program (AUIIP) Tranche 1; and the Bihar State Road Development Corporation, Bihar State Highways II Project. Agencies and projects in Nepal include the Nepal Electricity Authority, Electricity Transmission Expansion and Supply Improvement Project, the Second Small Towns Water Supply and Sanitation Sector Project, and the Rural Reconstruction and Rehabilitation Sector Development Program.

Abbreviations

ADB	Asian Development Bank
AUIIP	Assam Urban Infrastructure Investment Program (India)
BMRC	Bangalore Metro Rail Company (India)
BSRDC	Bihar State Road Development Corporation
CBO	community-based organization
CDC	compensation determination committee
CDTA	capacity development technical assistance
CSC	contractor-supervising consultant
DGPC	Druk Green Power Corporation
DHP	Dagachhu Hydropower Project (Bhutan)
DHPA	Dagachhu Hydroelectric Power Authority
DHPC	Dagachhu Hydro Power Corporation
DPO	district project office
DWSS	Department of Water Supply and Sewerage (Nepal)
EIA	environmental impact assessment
EMP	environmental management plan
EPA	Environment Protection Act (India)
ESSD	Environmental and Social Studies Department (NEA, Nepal)
GRC	grievance redress committee
IAA	Impact Assessment Agency (India)
IEE	initial environmental examination
IPP	indigenous peoples plan
KUIDFC	Karnataka Urban Infrastructure Development and Finance Corporation
MFF	multitranche financing facility
MoEF	Ministry of Environment and Forests (India)
MoSTE	Ministry of Science, Technology and Environment (Nepal)
MoWHS	Ministry of Works and Human Settlement (Bhutan)
NEA	Nepal Electricity Authority
NEC	National Environment Commission (Bhutan)
NGO	nongovernment organization
NKUSIP	North Karnataka Urban Sector Investment Program
O&M	operation and maintenance
OBA	output-based aid
PAVA	Property Assessment and Valuation Agency (Bhutan)
PCU	project coordination unit
PIU	project implementation unit
PMC	project management committee
PMO	project management office

PMU	project management unit or program management unit
R&R	resettlement and rehabilitation
RRRSDP	Rural Reconstruction and Rehabilitation Sector Development Program
SIA	social impact assessment
SPS	Safeguard Policy Statement
STP	sewage treatment plant
TCC	Thimpu City Corporation (Bhutan)
ULB	urban local body
VDC	village development committee
WUSC	water user and sanitation committee

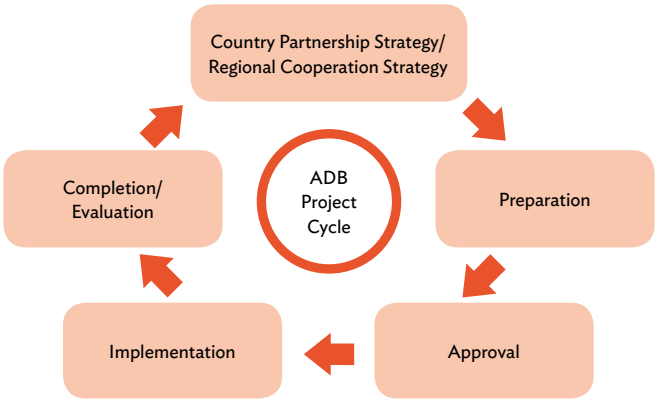
I. Introduction

A. The Project Cycle and Current Safeguard Requirements

The Asian Development Bank (ADB) provides financing for projects that will contribute effectively to the economic and social development of the country concerned and have the strongest poverty reduction impact in conformity with the country and ADB strategies. The environmental and social context in which projects develop is fundamentally important to any poverty reduction initiative. The environment has intrinsic value to local people, as well as providing a resource base and services to local and global communities. A compromised environment works against the premise of development and poverty reduction. Similarly, ignoring prevailing social issues and those that might be created by a development project will undermine the potential success of the project. These simple principles have been known for at least the last 40 years. Increasingly, environmental and social safeguards are being codified in all operations of development agencies, international financial institutions, and national and international decision makers. However, this is less so at the subnational and municipal levels and in beneficiary communities.

ADB clarified its safeguard policy in 2009 with the Safeguard Policy Statement (SPS).[1] The development of all project proposals considered for ADB loan funding must be consistent with the SPS and, after approval, must follow through on implementation in a manner that can be verified by regular monitoring. Safeguard considerations appear in most parts of the project cycle (Figure 1). Environmental and safeguard issues specific

Figure 1: The ADB Project Cycle



ADB = Asian Development Bank.

Source: www.adb.org/projects/cycle

[1] ADB. 2009. *Safeguard Policy Statement*. Manila.

to the project and the location are considered early in the design phase (preparation), safeguard measures are articulated as part of project design and approval, and they are routinely examined during subsequent implementation and monitoring. A key consideration is full disclosure of project details, environmental and social issues, and proposed remedies to all concerned stakeholders at various stages through the project preparation phase. This allows all concerns to be properly addressed, and gives local people confidence in the implementation and effectiveness of all proposed remedies.

The overall goal of the SPS is to promote the sustainability of project outcomes by protecting the environment and people from potential adverse impacts of projects. The objectives of ADB's safeguards are to

(i) avoid adverse impacts of projects on the environment and affected people, where possible;
(ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is impossible; and
(iii) help borrowers and/or clients strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

ADB assumes the responsibility for conducting due diligence and for reviewing, monitoring, and supervising projects throughout the project cycle, in conformity with the principles and requirements embodied in the SPS. The intention is to enhance the predictability, transparency, and accountability of its actions and decision making, to help borrowers and/or clients manage social and environmental impacts and risks, and to promote the long-term sustainability of investments. Achieving results that reflect these principles requires differentiated efforts by ADB and its borrowers and/or clients.

The ADB SPS sets out policy objectives, scope and triggers, and principles for three key safeguard areas: environmental safeguards, involuntary resettlement safeguards, and indigenous people safeguards (involuntary resettlement safeguards and indigenous people safeguards are grouped as social safeguards in this document). Specific requirements have been defined for each of the three safeguard types, and there are special requirements for different finance modalities.[2] The borrowers and/or clients are expected to undertake safeguard assessment in conformity with national legislative regulations and the ADB SPS regulations before loan approval. If capacity to implement the safeguard plans is lacking, the project must specify that capacity building is required. In some cases, such as for highly complex or sensitive projects, ADB can require the borrower and/or client to engage an independent advisory panel during project preparation and implementation.

ADB conducts safeguard reviews, including an examination of the borrower's and/or client's safeguard documents, as part of overall due diligence. This step emphasizes environmental and social impact assessments (ESIAs) and the planning process, and can involve field visits as well as desk reviews. The intention is to confirm that

(i) all key social and environmental impacts and risks associated with a project have been identified;
(ii) effective measures to avoid, minimize, mitigate, or compensate for the expected adverse impacts are incorporated into the safeguard plans and project design;
(iii) the borrower and/or client understands ADB's safeguard policy principles and requirements, as laid out in the Safeguard Requirements 1–4, and has the necessary commitment and capacity to manage social and environmental impacts and/or risks adequately;
(iv) the role of third parties is appropriately defined in the safeguard plans; and
(v) consultations with affected people are conducted in accordance with ADB's requirements.

[2] Addressing the environmental, involuntary resettlement, and indigenous people safeguards, as well as the special requirements for different finance modalities, reflects compliance with what are normally referred to as "Safeguard Requirements 1–4" in the ADB SPS documentation.

Both ADB and the borrower and/or client have separate monitoring responsibilities. The scope and periodicity of monitoring activities will reflect the risks and impacts associated with the project, which can be captured in legal agreements. Monitoring reports indicating the implementation performance are to be submitted periodically. The borrower and/or client requirements are to

(i) establish and maintain procedures to monitor the progress of implementation of safeguard plans;
(ii) verify the compliance with safeguard measures and their progress toward intended outcomes;
(iii) notify ADB if there are any changes in scope of work and engage with ADB in any revisions that may be required in the safeguard plans;
(iv) document and disclose monitoring results and identify necessary corrective and preventative actions in the periodic monitoring reports;
(v) follow up on these actions to ensure progress toward the desired outcomes;
(vi) retain qualified and experienced external experts or qualified nongovernment organizations (NGOs) to verify monitoring information for projects with significant impacts and risks;
(vii) use independent advisory panels to monitor project implementation for highly complex and sensitive projects; and
(viii) submit periodic monitoring reports on safeguard measures as agreed with ADB.

ADB's role is to

(i) conduct periodic site visits for projects as part of the department's review mission schedule;
(ii) conduct supervision missions with detailed review by ADB's safeguard specialists and/or consultants for projects with significant adverse social or environmental impacts;
(iii) review the periodic monitoring reports submitted by borrowers and/or clients to ensure that adverse impacts and risks are mitigated as planned and as agreed with ADB;
(iv) work with borrowers and/or clients to rectify to the extent possible any failures to comply with their safeguard commitments, as covenanted in the legal agreements, and exercise remedies to reestablish compliance as appropriate; and
(v) prepare a project completion report that assesses whether the objectives and desired outcomes of the safeguard plans have been achieved, taking into account the baseline conditions and the results of monitoring.

To ensure that contractors implement the agreed measures appropriately, the borrower and/or client will include the safeguard requirements in bidding documents and civil works contracts. Where country safeguard systems differ from the ADB SPS (including Requirements 1–4), ADB and the borrower and/or client will formulate and agree on specific measures to ensure that ADB's safeguard policy principles and requirements are fully complied with.

Finally, the borrower and/or client is expected to track safeguard performance, which normally includes inspections to verify compliance with the environmental management plan (EMP) and requirements related to social issues (for example, the resettlement plan), and progress toward the expected outcomes. As noted above, in some cases this may involve the retention of qualified and experienced external experts or qualified NGOs to verify monitoring information. Monitoring results will be documented, including the identification of necessary corrective actions, which will be reflected in a corrective action plan. Corrective actions need to be implemented and followed up to ensure the effectiveness of the corrective actions. Periodic monitoring reports to ADB (at least semiannually for construction projects of normal complexity, and quarterly for highly complex and sensitive projects) will document all these actions and the ultimate progress in implementation of the EMP and resettlement plan. For projects that may continue to have significant adverse impacts during operation, reporting will continue at a minimum on an annual basis. These reports must be posted in a location accessible to the public. Project budgets are expected to reflect the costs of monitoring and reporting requirements.

Proposed projects are screened for environmental safeguards according to type, location, scale, and sensitivity and the magnitude of their potential environmental impacts, including direct, indirect, induced,

and cumulative impacts. Projects are classified into the following four categories:

Category A. A proposed project 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. An environmental impact assessment (EIA), including an EMP, is required.

Category B. The proposed project's potential adverse environmental 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. An initial environmental examination (IEE), including an EMP, is required.

Category C. A proposed project is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental implications need to be reviewed.

Category FI. A proposed project involves the investment of ADB funds to or through a financial intermediary. The financial intermediary must apply and maintain an environmental and social management system, unless all of the financial intermediary's business activities have minimal or no environmental impacts or risks.

With regard to social safeguards, documents are prepared in the project planning phase, primarily based on site identification and the expected magnitude of impact determined through socioeconomic surveys. Frameworks for resettlement and indigenous peoples are prepared taking into consideration the country legislation and the ADB SPS. Social safeguard requirements for involuntary resettlement and indigenous people policies involve a structured process of impact assessment, planning, and mitigation to address the adverse effects of projects throughout the project cycle. The safeguard policies require that (i) impacts are identified and assessed early in the project cycle; (ii) plans to avoid, minimize, mitigate, or compensate for the potential adverse impacts are developed and implemented; and (iii) affected people are informed and consulted during project preparation and implementation.

The type of safeguard documentation required depends on the initial screening of anticipated impacts and risks, and the categorization of projects. However, classification is an ongoing process, and the classification can be changed at any time as more detailed information becomes available and project processing proceeds. Involuntary resettlement projects can be categorized as follows:

Category A. A proposed project is likely to have significant involuntary resettlement impacts. A resettlement plan, including assessment of social impacts, is required.

Category B. A proposed project includes involuntary resettlement impacts that are not deemed significant. A resettlement plan, including assessment of social impacts, is required, with as much detail as Category A noted above.

Category C. A proposed project has no involuntary resettlement impacts. No further action is required. A due diligence report is generally prepared for projects in this category.

Category FI. A proposed project involves the investment of ADB funds to or through a financial intermediary. This category requires an environmental and social management system to be in place.

A project's involuntary resettlement category is determined by the category of its most sensitive component in terms of involuntary resettlement impacts. The involuntary resettlement impacts of an ADB-supported project are considered significant if 200 or more people will experience major impacts, which are defined as (i) being physically displaced from housing, or (ii) losing 10% or more of their productive (income-generating) assets. The level of detail and comprehensiveness of the resettlement plan are commensurate with the significance of the potential impacts and risks.

If there are impacts on indigenous peoples in a proposed project, depending on the significance of the potential impacts on those people, the following categorization applies:

Category A. A proposed project is likely to have significant impacts on indigenous peoples. An indigenous people plan (IPP), including assessment of social impacts, is required.

Category B. A proposed project is likely to have limited impacts on indigenous peoples. However, an IPP, including assessment of social impacts, is still required.

Category C. A proposed project is not expected to have impacts on indigenous peoples. No further action is required.

Category FI. A proposed project involves the investment of ADB funds to or through a financial intermediary.

A project's indigenous people category is determined by the category of its most sensitive component in terms of impacts on indigenous peoples. The significance of impacts of an ADB-supported project on indigenous peoples is determined by assessing (i) the magnitude of impact in terms of (a) customary rights of use and access to land and natural resources; (b) socioeconomic status; (c) cultural and communal integrity; (d) health, education, livelihood, and social security status; and (e) the recognition of indigenous knowledge; and (ii) the level of vulnerability of the affected indigenous people community. The level of detail and comprehensiveness of the IPP are commensurate with the significance of potential impacts on indigenous peoples.

In the project cycle, the implementation of the project depends on the detailed information on impacts and mitigation measures provided in the resettlement plan or IPP. However, a good resettlement plan or IPP does not necessarily mean efficient and effective implementation. Factors such as land acquisition requirements, availability of social safeguard staff within the executing agency, mobilization of efficient NGOs, and availability of funds are some of the factors that influence implementation. Within the project cycle, monitoring is very important for flagging issues and potential delays in time lines. Monitoring by the executing agency, external consultants, and ADB is important to put implementation back on track when there are slippages.

It can be seen from the nature of the safeguard policy that the most critical step in the sequence is accurately predicting the possible social and environmental impacts, and then designing the most appropriate technical and procedural approaches to mitigate them. This will greatly depend on the specific site conditions. If these are not defined, the subsequent implementation and monitoring of mitigation measures will not make up for any inappropriate solutions or issues that were missed altogether before project detailed design, construction, and operation.

B. Overview of Perceived Deficiencies: The Need for Assessment of Social and Environmental Safeguard Implementation in South Asia

The original premise for the 2013 capacity development technical assistance (CDTA) was based on feedback from borrowing governments in South Asia and observations by ADB staff during project monitoring missions. Perceived deficiencies in the safeguard process in South Asia were used to frame the CDTA approach (Section I. C), especially selecting representative projects, determining the range of stakeholders to consult, and setting the direction and limits of the dialogue with these stakeholders. The main constraints or deficiencies in the environmental safeguard implementation process, as observed in 2012, before undertaking the CDTA, include

(i) difficulties in identifying and designing safeguards (whether they effectively address all project- and site-specific issues);
(ii) the perception that the ADB safeguard process needs to be streamlined (it is still perceived to be onerous in some cases and beyond the capacity of the borrowing agencies and their staff, or staff are unfamiliar with ADB processes and reporting requirements);
(iii) gaps or inconsistencies between the ADB safeguard requirements and national and/or subnational legislation and guidelines;
(iv) difficulties in timing the implementation of safeguards to make them most effective;
(v) lack of awareness of safeguard options and their technical aspects;

(vi) lack of adequate budgets and human resources for effective implementation and monitoring of safeguards;
(vii) lack of clarity of roles in implementing safeguards;
(viii) inadequate training (especially in the early stages of safeguard development) with regard to the technical and institutional requirements of safeguard design and implementation;
(ix) lack of continuity in government and agency staff, and therefore loss of opportunity for advancing and sustaining capability and corporate memory in safeguard design and implementation (no core body for training of trainers);
(x) occasional contractor sloppiness in assuming safeguard responsibilities;
(xi) lack of complete disclosure of all safeguard monitoring reports; and
(xii) ongoing challenges in coordinating safeguard responsibilities and monitoring between ADB headquarters and resident missions (lack of human resources and time to undertake the required field missions; lack of timely computer-based reporting of safeguard status; different stages of the safeguard process are handled by different people; and lack of clarity in the headquarters–resident mission handover process, when projects are delegated to the resident missions).

Similar constraints were noted with social safeguards. ADB's social safeguard compliance process is rigorous. The requirements include involuntary resettlement and indigenous people plans (IPPs) and frameworks. The SPS provides standard guidelines and principles for addressing resettlement issues and impacts on indigenous populations. However, the application of these principles has sometimes been a challenge, especially their implementation (more so than design). Each country has its own systems and legislation, which do not necessarily match the ADB SPS. ADB's safeguard policies supplement the country's legal and policy frameworks to help ensure that affected people are not adversely affected by ADB-funded projects. However, the success of a project depends on how well the documented safeguard measures are implemented. Inadequate capacity to address all the requirements of resettlement plans and IPPs has also been noted.

The main challenges to implementing social safeguards relate to (i) availability of social safeguard staff in the project monitoring unit and project implementation unit; (ii) frequent transfers of safeguard officers; (iii) maintenance of an updated resettlement plan so that the affected people are correctly identified and verified; (iii) provision of adequate budgets to support safeguard work (such as providing for vehicles); (iv) clarification with the executing agency at the start of the project the need to pay replacement cost during implementation; (v) clarification of the need to identify and provide assistance to nontitleholders at the onset of the project; (vi) adequacy of budgetary provisions for compensation of replacement costs, additional land requirements, NGO hire, and monitoring; (vii) hiring of experienced NGOs and community-based organizations (CBOs) to assist the executing agency during implementation; (viii) availability of functioning grievance redress mechanism; and (ix) lack of supervision and inadequate compliance monitoring, especially in remote areas.

Given the many perceived deficiencies and constraints in the design and implementation of safeguards as required by ADB, it was felt that a systematic approach, targeted capacity building, clear allocation of safeguard responsibilities, and optimization of safeguard system processes would improve the quality of safeguard implementation. In this context, ADB's South Asia Department (SARD) undertook to further analyze safeguard implementation practices in selected South Asian countries through technical assistance for Improving the Implementation of Safeguard Policy Applications in Selected South Asian Developing Member Countries in 2012.

C. Safeguard Assessment Approach and Methodology

The approach of the CDTA was to (i) develop country-specific assessments based on an analysis of 10 selected representative ADB projects (through review of project documentation and field visits); (ii) consult with government, project staff, consultants, and local communities; and (iii) examine the experiences of ADB resident missions in India and Nepal with safeguard implementation and monitoring. Consultations,

document review, and project site visits in Bhutan, India, and Nepal were undertaken between May and August 2013. Three projects in Bhutan, four in India, and three in Nepal were examined in detail. These projects included hydropower development (dams and transmission lines), road and highway development, urban transport systems (metro), and urban water infrastructure and services, and therefore would be likely to require a full range of environmental and social safeguards.

The following projects were examined in detail: the Dagachhu Hydropower Development Subproject: Green Power Development Project (ADB 2008), the Urban Infrastructure Project (ADB 2011), and the Road Network Project—II (ADB 2009) in Bhutan; the Bangalore Metro Rail Transit System Project (ADB 2011), the North Karnataka Urban Sector Investment Program Tranche 3 (ADB 2012), the Assam Urban Infrastructure Investment Program Tranche 1 (ADB 2011), and the Bihar State Highways II Project (ADB 2012) in India; and the Electricity Transmission Expansion and Supply Improvement Project (ADB 2011), the Second Small Towns Water Supply and Sanitation Sector Project (ADB 2009), and the Rural Reconstruction and Rehabilitation Sector Development Program (ADB 2007) in Nepal.

Further project details are provided in Section II.B, page 27 and Appendix, page 160.

1. Assessment of Environmental Safeguards

To assess the environmental safeguards, various questions and lines of discussion were used to guide interviews and meetings with government and project staff, contractors and consultants, and local communities. The focus was on (i) seeking evidence of strengths in the safeguard design and implementation process (and the reasons for them); (ii) identifying technical and institutional deficiencies, gaps, and capacity needs; and (iii) soliciting suggestions on how to improve safeguard compliance rates and make environmental mitigation measures more effective and sustained. The questions and lines of discussion are as follows:

Technical aspects:

- How do the design and engineering specifics, and the environmental context, of the project challenge environmental mitigation and environmental management?
- Are all practical technical measures to reduce environmental impacts known and tested? What is working well; what is still a challenge and/or issue?
- How do the effects and compliance monitoring programs influence the mitigation measures? Have any approaches been modified on the basis of monitoring results?
- What are the successes and constraints with the EMP and environmental monitoring?
- Have there been any work stoppages or other measures as a result of lack of compliance?
- What fixes were there, if any?

Institutional, organizational, procedural, and reporting aspects:

- What is the chain of command for environmental safeguards? Who is in charge; what is the procedure for defining tasks, reporting, checking compliance, and maintaining objectivity?
- What are the roles of ADB, the executing agency, the government, third-party monitors, and subcontractors (tasks, scheduling, level of intervention)?
- What is the document base for environmental safeguards (ADB SPS, EMP, safeguard manuals, contracts, environmental monitoring reports, ADB review and feedback, third-party reports, public complaints, event logs, correspondence, etc.)?
- Quality of EMP: Was adequate guidance received? Have all issues been addressed?
- Dissemination of EMP: Who knows the details? Is it used as a planning tool? How is it discussed and revisited?
- Responsibilities: How are EMP obligations captured in contracts and covenants?
- What is the communication pattern and nature of relationships between all parties?
- Do national or state environmental legislation and/or regulations address all environmental issues? What types of certificates or clearance are required?
- Do project staff and contractors have adequate knowledge, technical skills, and management and communication capacity to undertake their jobs properly?

- What training has been provided to bolster environmental management capacity (training content, types of trainees, and supporting materials)?
- Are there any issues regarding budgets for the EMP, monitoring, and reporting?
- Any other observations or recommendations to improve environmental safeguard practices.

Project safeguard documentation was reviewed in hard copy or on the project and/or ADB websites. Project sites were visited to make detailed visual observations of site management practices, identify lingering environmental issues, and observe worker practices. The site visits included an examination of active work sites (as many as possible for each project) and representative worker camps. Photographs were taken to capture the prevailing site conditions and lingering environmental issues, inform the safeguard assessment, and identify which technical and procedural aspects of safeguard implementation need attention. Interviews were also conducted with ADB resident mission staff in India and Nepal to obtain their feedback on safeguard implementation and the challenges they face in monitoring and assessing the effectiveness of project environmental safeguards.

The document review and site visits informed a comparative analysis of the 10 projects, based on 28 environmental safeguards criteria developed for the CDTA, as well as a higher-level analysis of institutional capacity needs and a proposed action plan responsive to the identified technical and institutional gaps in environmental safeguard implementation in the three countries.

2. Assessment of Social Safeguards

Discussions were held with the stakeholders involved in each project—the government, the project management units, the project implementation units, the contractor-supervising consultants (CSCs), the contractors, the design consultants, NGOs, and the affected people and communities. Discussions aimed to assess legislation and policies in use of social safeguards, procedural practices, implementation capacity of the project, and implementation issues, including monitoring. The focus was on the areas where capacity development is needed for better compliance with and implementation of social safeguards.

The overall approach was to cover a range of topics through discussion with the various stakeholders. Topics of discussion included

- selection of subproject sites, minimizing encumbrances;
- challenges faced in land acquisition and how they are being dealt with;
- incidence of court cases;
- how the project-affected people are being relocated;
- what income-generation and livelihood restoration programs are being implemented;
- how the project is monitored and how problems raised are addressed or facilitated;
- whether there have been any cases of noncompliance with any of the social safeguard requirements;
- the institutional setup for implementation;
- mobilization of NGOs;
- delays in land acquisition, if any, and the reasons;
- how relocation is tackled;
- how the project ensures livelihood restoration, and what follow-up there is, if any;
- whether the grievance redress mechanism is working and what the issues faced in mitigating the grievances are, if any;
- how monitoring is being done and how the issues raised in monitoring reports are being tackled;
- how coordination of reporting is done at various levels;
- how disclosure is done;
- any good practices of the project that can be implemented in other projects;
- needs for further support from ADB to streamline the social safeguard implementation process; and
- whether social safeguard training has been imparted to the stakeholders at various levels and what kinds of additional training is required.

Site visits were made to selected project sites to see how resettlement plan implementation is being carried out. These provided firsthand information on the challenges faced during implementation. Site visits were documented with pictures and minutes of the meetings held with the different stakeholders. Discussions were also held with affected people and community groups to assess the challenges they faced due to the project.

Discussions with the affected people also revealed the level of NGO participation in implementation and how successfully resettlement and rehabilitation (R&R) is being tackled. Meetings were also held with the ADB resident missions in India and Nepal and with the Government of Bhutan to understand how the social safeguard portfolio is being managed.

Project documents were referred to, including resettlement frameworks, resettlement plans, due diligence reports, and monitoring reports. In some cases, one document covered both the environmental and social safeguards. Country policies and legislation relevant to social safeguards were also referred to.

II. The Situation: Assessment of Current Safeguard Implementation in South Asia

A. Reconciling Country Safeguard Systems and ADB Expectations: National Policies versus the ADB Safeguard Policy Statement

The main platform for safeguard implementation at the national level is national and subnational legislation and the associated safeguard systems. While there is a desire to be fully compliant with ADB safeguard requirements—and project loan approvals depend on this—it is also evident that there is tension between what is considered national jurisdiction and what is sometimes considered to be a system imposed from outside (the ADB safeguard requirements). To some extent, this reflects national perceptions of the comprehensiveness of their safeguard policies and legislation, various degrees of pride, and a sense of self-sufficiency. The three countries examined differ in this regard; some have a more humble view of their systems and easily defer to the ADB requirements. There is also variation between projects within a country, depending on the age and maturity of the institutions seeking the project loans. This section examines the country safeguard policies, regulations, and systems, and ADB's expectations for safeguard implementation.

1. Environmental Safeguards

On paper, Bhutan, India, and Nepal, have adequate guidance for the development of environmental impact assessments (EIAs) and environmental management plans (EMPs), as well as environmental quality standards (which are not reviewed here). The challenge is to implement safeguard plans in a manner that is consistent with all relevant legislation and regulations, given that many government agencies are understaffed and underresourced and cannot always ensure that all projects are consistent with all regulations. In practice, individual project compliance with required regulations and standards cannot always be obtained, and there may occasionally be quiet acceptance of inadequate EIAs and EMPs and lack of diligence in monitoring and follow-up, and a general recognition of the challenges that both the implementers and the regulators face.

In general, compared to national guidance, ADB safeguard policies set a higher standard for environmental planning, public consultation, monitoring, documentation (accountability), and follow-up. A key feature of the ADB approach is that the environmental management guidance is project-specific, comprehensive, self-contained, and easily understood. In contrast, national and state regulations, guidelines, and standards are not so easily cataloged and understood. To help understand these disparities, individual country legislative summaries are provided below, followed by a comparative summary of country legislation and guidance reconciled to the environmental management principles in the Safeguard Policy Statement (SPS).

a. Bhutan

Bhutan has quite comprehensive environmental management legislation, partly reflecting the importance given to the environment in the Constitution, the inclusion of environmental sustainability in the gross national happiness index, and the relatively newness of environmental legislation. Every Bhutanese is expected to act as a trustee of the kingdom's natural resources and environment for the benefit of present and future generations. It is the fundamental duty of every citizen to contribute to the protection of the natural environment, conservation of the rich biodiversity of Bhutan, and

prevention of all forms of ecological degradation—including noise and visual and physical pollution—through the adoption and support of environment-friendly practices and policies. The government is obliged to protect, conserve, and improve the pristine environment; safeguard the biodiversity of the country; prevent pollution and ecological degradation; secure ecologically balanced sustainable development while promoting justifiable economic and social development; and ensure a safe and healthy environment.

The key legislation is the National Environment Protection Act, 2007. The act provides for the establishment of an effective system to conserve and protect the environment through the National Environment Commission (NEC) Secretariat or its successors, designation of competent authorities, and constitution of other advisory committees, so as to independently regulate and promote sustainable development in an equitable manner. It is guided by environmental principles, which state that the people and the government in succession shall perpetually strive to consider and adopt its development policies, plans, and programs in harmony with the environmental principles. These include the fundamental right to a safe and healthy environment with equal and corresponding duty to protect and promote the environmental well-being of the country; intergenerational equity to ensure that the health, diversity, and productivity of the environment is maintained or enhanced for the benefit of future generations; the middle-path strategy for development; and the precautionary principle—where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation. With these key principles, a development activity shall be strategically planned and executed in harmony with the carrying capacity of the country's sensitive ecological settings and terrain. This includes the principle of waste minimization: the "polluter pays principle" for the costs of containment, avoidance, abatement, medical compensation, mitigation, remediation, and restoration; and the right to seek legal redress, if needed. Environmental assessment processes and the public right to information are key features of the act.

The Environmental Assessment Act, 2000 and 2010 (now being updated) establishes procedures for the assessment of potential effects of strategic plans, policies, programs, and projects on the environment, and for the determination of policies and measures to reduce potential adverse effects and to promote environmental benefits. It makes environmental clearance mandatory for any project or activity that may have adverse impacts on the environment. Based on the review of environmental information submitted by the project applicant, the NEC Secretariat or the competent authority may issue or deny an environmental clearance or determine the need for a full environmental assessment. Where a full environmental assessment is deemed necessary, the applicant will be asked to prepare environmental assessment documents according to the terms of reference approved by the NEC Secretariat. The NEC Secretariat will review the environmental assessment report and accordingly issue or deny the environmental clearance.

The NEC Secretariat or competent authority may issue the environmental clearance if (i) the effects of the project on the environment are foreseeable and acceptable; (ii) the applicant is capable of carrying out the terms of the environmental clearance; (iii) the project, alone or in connection with other programs or activities, contributes to the sustainable development of the kingdom and the conservation of its natural and cultural heritage; (iv) adequate attention has been paid to the interests of the concerned people; and (v) the project is consistent with the environmental commitments of the kingdom. As per Article 16 of the act, public consultation is mandatory and must be documented. The environmental clearance for a project shall be reviewed and may be revised and renewed at least every 5 years, unless a shorter period is stated. The NEC Secretariat or competent authority may review and modify the terms whenever (i) there are unacceptable risks to the environment resulting from the project that were not known at the time the clearance was issued, (ii) improved and cleaner technology becomes available, and (iii) the project needs to be brought into compliance with changes to the laws of the country. Noncompliance with environmental terms specified in the issuance of environmental clearance makes the offender liable to penalties that may include compensation for environmental damage, fines, sanctions, and suspension or revocation of environmental clearance in part or in full.

The applicable time limits to obtain environmental clearance (Regulation for Environmental Clearance of Projects, 2002) can push the total time to 270 days,

and must include (i) a response by the NEC Secretariat on receipt of the application; (ii) review by the NEC Secretariat to assess the adequacy of the application as per government rules and guidelines; (iii) a decision on the environmental clearance, based on the findings of the environmental assessment report; (iv) public notification on the decision by the NEC Secretariat or competent authority; (v) appeal on the decision by the public; and (vi) on approval of the clearance, a legal undertaking with the proponent of new projects to comply with the Environmental Assessment Act, 2000. No-objection certificates must also be obtained from a wide range of agencies and entities, depending on the nature of the project. Environmental guidelines have been produced for road and hydropower projects in Bhutan to assist with the project design and environmental assessment process.

Various other acts and regulations support the main environmental sustainability principles in Bhutan. These include the Waste Prevention and Management Act, 2009 and Regulation, 2012; the Rules and Regulations on Occupational Health and Safety, 2006; the Forest and Nature Conservation Act, 1995 and Rules, 2006; the Biodiversity Act, 2003; the Rules on Biological Corridors, 2007; the Land Act, 2007; Mines and Minerals Act, 1995; the Rules and Regulation on Explosives, 1989; the Road Act, 2004; and the Local Government Act of Bhutan, 2009. In addition, emissions are controlled by the Environmental Discharge Standard, 2004, which sets upper limits on the concentration of air pollutants. Standards still need to be developed for water.

Generally, the environmental assessment process is very consultative in the design phase and the NEC feels that environmental issues are properly flagged. Local area plans, where they exist, tend to guide infrastructure development projects. While the NEC feels that ADB environmental guidelines are very stringent, it also feels that the Bhutanese standards are high and consistent with the ADB safeguard policies. (A recent detailed analysis of the NEC and ADB safeguard requirements for a proposed hydropower project found this to be the case.) The NEC is an autonomous commission, so it can remain at arm's length from government agencies, which helps with the environmental assessment and approval process. The environmental assessment process requires the NEC to visit sites; however, only eight people at NEC in Thimphu and in the districts handle environmental clearances. The NEC also tries to provide capacity building to the various implementing agencies, but there is concern about the sustainability of lessons and skills in the sector agencies. Training of trainers and ongoing capacity-building is required. In general, the Department of Roads has the most environmental management capacity, because of their extensive project experience throughout the country. The district officers of the NEC need more practical training (they received 3 weeks' training in road construction environmental issues). However, the NEC still believes that they often do not know what environmental mitigation measures to propose. The NEC is clear that project contracts need to include environmental covenants, but these need a specific budget for environmental safeguard implementation. If this is not explicit in the overall project budget, environmental management tasks tend to lapse or are neglected.

b. India

Environmental management in India is governed by the Environment (Protection) Act (EPA), 1986. This act is umbrella legislation established under the Water (Prevention and Control) Act, 1974 and the Air (Prevention and Control) Act, 1981 and is designed to provide a framework for the coordination of central and state authorities. Under the EPA, the central government is empowered to take measures necessary to protect and improve the quality of the environment by setting standards for emissions and discharges, regulating the location of industries, managing hazardous wastes, and protecting public health and welfare.

Notifications and guidelines, such as the Environmental Impact Assessment of Development Projects Notification, 1994, amended in 1997, provide further guidance. This notification specifies that all projects listed under Schedule I require environmental clearance from the Ministry of Environment and Forests (MoEF). Projects under the delicensed category of the New Industrial Policy also require MoEF clearance. All development projects in fragile regions must obtain MoEF clearance whether or not they fall under the Schedule I. Industrial projects with investments in excess of Rs500 million must obtain MoEF clearance and are further required to obtain a letter of intent from the Ministry of Industry, and a no-objection certificate from the State Pollution Country Board and the State Forest Department if the

location involves forestland. Once the no-objection certificate is obtained, the letter of intent is converted into an industrial license by the state authority. Finally, the notification also stipulated the procedural requirements for the establishment and operation of new power plants. As per this notification, two-stage clearance for site-specific projects, such as pithead thermal power plants and valley projects, is required. Site clearance is given in the first stage and final environmental clearance in the second.

A public hearing has been made mandatory for projects covered by this notification (the 1997 amendment). This is an important step in providing transparency and a greater role to local communities. Although not part of the approval process, project-affected people are given an opportunity to comment on the draft EIA report to incorporate public concerns prior to its completion. Minutes of public hearings are produced, and the final EIA report and the full environmental clearance must be made available to the public.

There are requirements and procedures for seeking environmental clearance of projects. First, any person who wishes to undertake a project in any part of India or to expand or modernize any existing industry or project listed in the schedule must submit an application to the Secretary of the MoEF in New Delhi.[3] The application is pro forma, as specified in Schedule II, and is to be accompanied by a detailed project report, which must include an EIA report and an EMP, prepared in accordance with the guidelines issued by the MoEF. A case can be rejected if the submission is insufficient or the data inadequate. Submission of incomplete data a second time would itself be a sufficient reason for the Impact Assessment Agency (IAA) in the central government to reject the case summarily.

The summary feasibility report submitted with the application is evaluated and assessed by the IAA, in consultation with a committee of experts.[4] The composition of the committee is specified in Schedule III of the notification. The committee of experts has the full right of entry and inspection of a site or factory premises at any time before, during, or after project operations begin.

The IAA prepares recommendations based on technical assessment of the documents and data from the project authorities, supplemented by data collected during visits to sites or factories and interaction with affected populations and environmental groups. Summary feasibility reports, along with the detailed EMPs, and the IAA's recommendations are made available to the concerned parties or environmental groups on request. Depending on the nature of the project, and if recommended by the IAA, the public may be asked to comment within 30 days of receipt of the development proposal. This can occur in public hearings arranged for the purpose after giving 1 month's notice of such hearings in at least two newspapers. The public is provided access to the summary of the project reports and the EMPs at the headquarters of the IAA.

The IAA's assessment is to be completed within 3 months on receipt of the requisite documents and data from the project authorities and completion of the public hearing, and a decision must be conveyed within 30 days thereafter. No work, preliminary or otherwise, relating to the setting up of the project may be done until the environmental site clearance is obtained. To enable the IAA to effectively monitor the implementation of the recommendations and conditions of the environmental clearance, the project authorities concerned shall submit a half-yearly report to the IAA. The IAA then makes compliance reports available publicly. If no comments are received from the IAA within the time limit, the project is deemed to have been approved as proposed by project authorities. The guidelines of the MoEF specify that the EIA report must include the baseline and impact assessment, as well as the EMP, details of the environmental management cell, and air and water quality monitoring stations to be set up for the project.

The basic requirements of the EPA and related notifications are consistent with the direction in the ADB SPS. However, the enforcement of the laws has been a matter of concern. It has been suggested

[3] The Supreme Court ruled that by 31 March 2014 the central government will need to set up a national environmental appraisal and monitoring authority in all states of India to oversee the approval and implementation of EIAs. The effectiveness of this measure has not yet been examined.

[4] Members are not part of the IAA; they usually include respected scientists and can include members of nongovernment organizations. Only one member of the IAA is on the committee, as member-secretary.

that the prevailing command and control nature of the environmental regime in India is a factor. This is compounded by the perception that the law is set up as "all-or-nothing"; the extent of violations does not seem to figure in decisions. For example, fines are levied on a flat basis and there are no incentives to lower pollution discharges below prescribed levels. Various economic instruments have been investigated to encourage the shift from curative to preventive measures to internalize the costs of pollution and to conserve resources, particularly water. These should encourage the design and implementation of appropriate mitigation measures presented in the EIAs and EMPs, whose job it is to preempt any environmental impacts associated with construction and operation of projects. However, as noted previously, lax enforcement, government understaffing and underresourcing, and perhaps some confusion between national and state jurisdiction in EIA and related follow-up actions are factors that sometimes reduce the intent and effectiveness of the EPA and various notifications. This is explored further in the case studies in Section II.B.1 (pp. 31-81).

c. Nepal

Nepal's environmental legislation is multisector in nature and enables the Ministry of Science, Technology and Environment (MoSTE) to specify the mitigation of all potential sources of air, land, and water degradation that may adversely affect natural and social environments. In this capacity, the MoSTE is responsible for updating and revising national legislation relating to environmental impact.

The Environment Protection Act 1997 (EPA) is a comprehensive, umbrella-type environmental act that is expected to be enforced through appropriate regulatory measures. It provides a legal basis for authorities to regulate an environmental impact assessment (EIA) and/or initial environmental examination (IEE). Section 3 of the EPA requires the project proponent to conduct an EIA or IEE for the prescribed proposal. Section 6 (1) of the EPA empowers the relevant agency to grant approval of an EIA report, only if it finds that the implementation of the proposal will have no significant adverse effects on the environment. The Environment Protection Rules 1997 provide a legal basis for concerned authorities to regulate an EIA and/or an IEE. The Act and Rules are administered by the MoSTE, emphasizing environmental conservation and management through internalization of the environmental assessment system, pollution control and prevention, conservation of natural heritage sites, compensation for environmental damages, etc. Specific EIA guidelines have been prepared for the water resources sector and forestry.

All activities carried out as part of project construction and operation must comply with the relevant provisions of all acts and regulations, including the EPA; the Aquatic Animals Protection Act 2017, 1960, and Amendment 2055, 1999; the District Development Committee (Working Agreements) Regulations 2050, 1993; the Electricity Act 2049, 1992 and Electricity Regulation 2050, 1993; the Explosives Substances Act 2018, 1961; the Forest Act 2049, 1993 and 1995 amendments, and Forest Regulation 2052, 1995; the Hydropower Development Policy 2056, 2001; the Labor Act 2048, 1992; the Administration Act 2024, 1967; the Land Acquisition Act 2034, 1977 and Land Acquisition Guidelines 2049, 1993; the Local Self Governance Act 2056, 1999 and Local Self Governance Regulation 2057, 2000; the National Parks and Wildlife Conservation Act 2029, 1973 and National Parks and Wildlife Conservation Regulation 2030, 1974; the Public Roads Act 2030, 1974; the Soil and Watershed Conservation Act 2039, 1982; the Solid Waste (Management and Resource Mobilization) Act 2044, 1987 repealed 2067, 2010; the Village Development Committee (Working Procedures) Rules 2050, 1994; and the Water Resources Act 2049, 1992 and Water Resources Regulation 2049, 1993.

Most projects require permits from various approval authorities. For example, permission to occupy forest land must be sought from the Cabinet through the Ministry of Forests and Soil Conservation; a permit to fell trees on public land must be obtained from the District Forest Office; permission to fell trees in community forests must be obtained from the forest user group; a permit to upgrade roads, bridges, and culverts comes from the Department of Roads; permission to relocate archaeological, religious, and cultural sites is sought from the village development committee; the district development committee issues permits to extract material; written permission from a private landowner must be obtained for temporary use of leased land; permission to relocate or disturb community infrastructure comes from user committees and the

village development committee and ward office. There are very few environmental standards at present, except vehicular emissions standards and tolerance limits for inland effluent discharge. Other environmental pollution standards are being formulated.

The government ministries and agencies that are involved with infrastructure development have their own environmental sections or units. However, interagency coordination and enforcement is weak, and there is a notion that the EPA and Environmental Protection Rules have become outdated. Therefore, the government is interested in critically reviewing and amending the environmental policy, act, and rules to bring them into line with international best practices. In particular, the MoSTE is looking at environmental policies and guidelines for roads, energy, irrigation, and housing. In addition, there is a plan to redesign the environment training module of the Nepal Administrative Staff College and organize more comprehensive capacity development for government and private sector organizations.

d. Comparative Summary of National Environmental Legislation and the ADB Safeguard Policy Statement

Table 1 provides a comparative summary of national legislation and environmental management guidance indicating the degree of compliance with the environmental policy principles in the ADB SPS.

Table 1: Comparative Summary of National Environmental Legislation and Guidance and the Environmental Policy Principles in the ADB Safeguard Policy Statement

Principles in the ADB SPS	Bhutan	India	Nepal
1. A screening process to determine the extent and type of required environmental assessment	Provision is made for developing the ToR for the EIA on the basis of the type of project and its environmental and social context.	Screening and scoping are undertaken to define the ToR for the EIA, on the basis of a defined project list and thresholds for the size of projects (the size of the project determines whether state or central approval is required).	Screening and scoping are required to develop the ToR for the EIA.
2. A comprehensive environmental assessment process, including all types of environmental impacts, and addressing socioeconomic impacts, as well as climate change considerations	All possible environmental and socioeconomic impacts must be addressed; there is no explicit requirement for climate change considerations, but analysis of greenhouse gas emissions due to the project is required (i.e., the impact of the project on the climate).	It is implicit that the process addresses these, as the environment legally includes the biophysical environment and human beings and property. Cumulative impacts are to be considered. Consideration of climate change is not an obvious requirement. Landscape and visual impact not specified.	Environmental and socioeconomic impacts must be addressed; but the guidance is not explicit on cumulative impacts or climate change considerations.
3. Examination of project alternatives	Required as per legislation	Yes, included in the process	Not explicit in legislation
4. Avoid, minimize, mitigate, or offset adverse impacts (EMP including mitigation and monitoring)	Mitigation and monitoring requirements are fully articulated (comprehensive).	Mitigation requirements are explicit and must be in the EMP. An environmental management cell must be set up for the proposed project.	Mitigation and monitoring are explicitly addressed. An EMP is required.
5. Meaningful consultation with affected people (including provision for a grievance-redress mechanism)	This is very clear in the legislation. Public approvals required.	It is specified, but there is some discretion about the degree of engagement of the public. It tends to be used for informing the EIA report and accountability for responses to public concerns is not explicit (although minutes of public hearings must be included).	This is addressed in the legislation and applies to all prescribed projects. The public is informed before scoping. There is an opportunity to provide comments early in the process. There is a public hearing before finalization of the EIA report (proof of hearing is required and comments are to be appended).

continued on next page

Table 1 *continued*

Principles in the ADB SPS	Bhutan	India	Nepal
6. Appropriate public disclosure of EIA and EMP	This is required. All documentation is to be made available to the concerned public in the local language.	This is required, but sometimes reports are in English. In this case, the executive summary will be translated into the local language.	Provision is made for public disclosure and the opportunity is given to provide comments on the EIA report.
7. EMP implementation and monitoring (with corrective action)	This is explicit in the legislation.	This is specified. Environmental protection rules specify emissions standards. Monitoring requirements are clear.	This is explicitly addressed in the legislation. Environmental audit is also included, as well as compliance monitoring and reporting.
8. Avoidance of critical habitats	This is addressed by various regulatory requirements (specific clearances required for parks and biological corridors).	The Biological Diversity Act provides for conservation of biological diversity; compliance is implicit in the EIA process. The Wildlife Protection Act and Rules (1973) and the Forest (Conservation) Act and Rules 1981) also provide for it. Endemic and endangered species must be addressed.	The Forest Rules, National Park Rules, and Conservation Area Management Rules all provide regulatory measures to minimize environmental impacts within forests, national parks, wildlife reserves, and conservation areas. The Convention on Biological Diversity is mentioned as a specific instrument to be considered in the EIA.
9. Use of appropriate pollution prevention and control technologies	There is a good level of detail on waste reduction and other sound pollution prevention measures.	This is clear in the legislation, which has a strong focus on pollution control (projects must meet various emission standards).	This is implicit in compliance with existing pollution and/or emission standards.
10. Safe worker conditions	It is not explicit in EMP requirements, but is still governed by Bhutan labor standards.	Occupational health requirements are explicit; projects are required to meet standards.	This is not documented as such.
11. Conservation of physical cultural resources	This is addressed in legislation.	This is addressed specifically.	Cultural resources are explicitly addressed.

ADB = Asian Development Bank, EIA = environmental impact assessment, EMP = environmental management plan, SPS = Safeguard Policy Statement, ToR = terms of reference.

Source: Authors.

e. Current ADB Approach to Environmental Safeguard Implementation in South Asia

As of March 2015, ADB had a large portfolio of projects in Bhutan, India, and Nepal as follows:

- Bhutan: 29 approved, 5 proposed
- India: 251 approved, 36 proposed
- Nepal: 80 approved, 3 proposed

There are ADB resident missions in India and Nepal. Bhutan resident mission has been recently established in 2014. Oversight for environmental and social safeguard design and implementation, therefore, is divided between staff in Manila and in the resident missions, with officers in Manila primarily handling the project loan proposal process up to approval, and resident mission staff handling country safeguard oversight for the construction and operation phases of delegated projects. Increasing attention to safeguard requirements and the growing loan portfolio have resulted in very full workloads for ADB staff, in both headquarters and the resident missions. The environmental and social safeguard staff structure (for ADB's operations in South Asia as of March 2015) is as follows:

ADB headquarters, South Asia Department:

- one environment specialist in the Energy Division;
- one principal safeguards specialist (safeguards) and one environment specialist in the Environment, Natural Resources and Agriculture Division;
- two social development specialists and one environment specialist in the Transport and Communications Division;

- one safeguards specialist and one environment specialist in the Urban Development and Water Division; and,
- one senior safeguards specialist and one safeguards analyst in the quality control unit of the Director General's Office.

Resident missions:

- Bangladesh Resident Mission: one safeguards officer (resettlement) and one environment officer;
- India Resident Mission: one senior safeguards specialist, one senior environment officer, and one senior safeguards officer;
- Nepal Resident Mission: one senior environment officer and one social development officer (safeguards); and,
- Sri Lanka Resident Mission: one senior project officer (environment) and one safeguards officer.

Ideally, the design of appropriate and effective environmental safeguards should be adequately addressed in the development of the loan approval documents, including the EIA and EMPs. Incorporating environmental safeguards into the design of loan approval documents is a critical step during the processing stage. The ADB staff in Manila hold the bulk of responsibility for this, working with the government and project staff and consultants. Once the loan is approved and the necessary covenants are in place, the monitoring of safeguard compliance is done by headquarters staff for the initial period of implementation before it is delegated to a member of the resident mission staff. However, in some cases, depending on the work load, the project may be immediately delegated to the resident mission.

Monitoring of safeguard application includes review of semiannual or quarterly progress reports and occasional safeguard compliance site visits. It has been noted that there are still challenges transferring the monitoring and oversight function from Manila to the resident missions and maintaining an up-to-date common understanding (among government, project staff, resident mission staff, and Manila-based staff) of the safeguard status of all approved delegated projects. This requires timely input of project status with regard to safeguards, accurate communication of this, and the required follow-up to check for compliance and the effectiveness of any measures to resolve problems. In ensuring that all the steps are followed, there can sometimes be a focus on the administrative status of safeguard reporting (i.e., whether reports have been filed and disclosed) driven by corporate goals, rather than the technical aspects of safeguards and site-specific issues (i.e., whether the safeguards are effective; this is explored further in Section 2.2).

Efforts have been made to improve the communication and coordination of environmental safeguard implementation oversight. These have focused on safeguard tracking systems in the resident missions. In India, the safeguards officers have developed their own customized tracking systems to capture information on the status of documents through the loan approval process and the safeguard compliance monitoring during construction and operation. In Nepal, a fully computerized safeguard tracking system has been developed and is being piloted. The system serves as a consistent catalogue of all projects and all safeguard requirements, which allows comparative scoring of the safeguard status of the projects, flagging those that are at risk and noting those that are under control and have acceptable safeguard status. The inputs to the system still require accurate compliance reports from the projects and site visits by ADB staff.

There is an element of subjectiveness in fulfilling the requirements of this tracking system. If the numbers do not accurately reflect the current situation, there is a risk that the automatic performance scoring will obscure the residual issues and any developing ones. All projects are visited at least once a year by ADB staff, and sometimes the project locations are so remote that 4 days may be required for each visit.

Given the project load, and the time required for compliance monitoring, it is clear that developing proper inputs for the safeguard tracking system requires quite a lot of effort. This is compounded by the inconsistent quality of compliance monitoring reports from the projects. The reports either have to be accepted as they are, which compromises the inputs to the safeguard tracking system, or effort must be expended to interpret the information and identify areas of the report and project mitigation measures that need to be remedied.

Furthermore, the contents of the safeguard tracking system needs to be communicated in a timely manner to the executing or implementing agencies so that those involved in safeguard implementation are informed about the safeguard status, required fixes, and decisions that have been made.

2. Social Safeguards

Policies on social safeguards, including land acquisition and resettlement operations, are being updated and revised in all three countries. India has already adopted a new resettlement policy, while Nepal has begun the process. Bhutan is also amending the Land Act, 2007. Overall, there is recognition in the region of the need to restructure land acquisition and social safeguard legislation. This has led toward greater equivalence between the ADB SPS and country policies. This section examines the different policies and highlights the main differences between them. The few differences have major implications for each country.

Given the diversity of governance and legal frameworks in the three countries, there are obvious differences in the country safeguard systems. In all three countries, the land acquisition acts provide the legal system for social safeguards. It has only been in the last 2 decades that attention has been given to involuntary resettlement and impacts on indigenous peoples caused by land acquisition. ADB's social safeguard policies are operational policies that seek to avoid, minimize, or mitigate adverse social impacts, including protecting the rights of those likely to be affected or marginalized by the development process.

ADB's safeguard policy framework for social safeguards contains policies on involuntary resettlement and indigenous peoples. This section presents equivalences and differences between national policies and the SPS in the areas of involuntary resettlement and indigenous peoples.

a. Safeguard Policy Statement Involuntary Resettlement Requirements

The objectives of the involuntary resettlement requirements of the SPS are to (i) avoid involuntary resettlement wherever possible; (ii) minimize involuntary resettlement by exploring project and design alternatives; (iii) enhance, or at least restore, the livelihoods of all displaced people in real terms relative to preproject levels; and (iv) improve the standards of living of the displaced poor and other vulnerable groups.

The involuntary resettlement safeguards cover physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas. These losses and involuntary restrictions are covered whether they are full or partial, permanent or temporary.

The key indicators identified will determine the gaps and similarities between country policies and ADB policies on governing land acquisition and involuntary resettlement.

Bhutan

The Bhutan Land Act, 2007. The Bhutan Land Act, 2007 provides regulations to manage, regulate, and administer the ownership and use of land for socioeconomic development and environmental well-being of the country. The act came into force on 1 January 2008. Its salient feature is the establishment of the autonomous National Land Commission, which took over land administration from the Ministry of Agriculture. The function of the commission is to lay down policies, programs, regulations, and guidelines in accordance with the act. The commission is empowered to issue a *lag thram* (ownership certificate) and has the authority to register land or amend change in the *thram*. The National Land Commission is empowered to acquire land, allot substitute land, and approve compensation. Under the act, any land transaction taking place within a municipality will be approved by the National Land Commission Secretariat. Landowners need not go to court to transfer the *thram*. It can now be done at the local *(dzongkhag, gewog,* or *thromde)* level.

The number of land categories has been reduced from more than 20 in the Land Act, 1979 to 7 in the 2007 act. The categories in the 2007 act, are *chhuzhing* (wetland), *kamzhing* (dryland) including orchards, *khimsa* (residential land), industrial land, commercial land, recreational land, and institutional land. Power over land management has also been streamlined and

decentralized to local authorities. The local bodies are empowered to resolve land disputes, and endorse land transactions and conversion of land categories.

The act empowers the government to acquire a registered land for public interest, but the government would have to provide substitute land and/or cash payment as compensation. Landowners would have the option to choose land or cash compensation in the rural areas.

In the *thromdes*, landowners would receive cash compensation calculated by the Property Assessment and Valuation Agency (PAVA) established by the 2007 act under the Ministry of Finance for any land and property acquired. The PAVA shall revise the compensation rate every 3 years. However, if the plot acquired is the only land for the landowner, the government could consider providing substitute land.

The Thromde Act, 2007. The 87th session of the National Assembly of Bhutan enacted the Thromde Act of the Kingdom of Bhutan, 2007, which allows the Government of Bhutan to establish a certain geographical, administrative or economic area of the country as a *thromde* or *throm* (urban area). In passing this act, Bhutan has taken a proactive role in encouraging urban development investments by introducing policy reforms on land administration and local governance.

The *thromde* or *throm* is a local government unit. The population size and density, land area, revenue, and type of economic activity will be used as the basis for establishing a *thromde* or *throm*. *Thromdes* or *throms* are responsible for providing urban infrastructure, services, and land use development plans. The act also allows the *thromde* to engage in subsovereign financial activities, such as borrowing funds, with prior approval of the government, and to carry out capital works in accordance with laws and regulations. The act was made operational in February 2008 by repealing the Bhutan Municipal Act, 1999.

As defined in the Thromde Act, 2007, land pooling "is a planning technique to redefine ownership of land in such a way that: (1) the shape and configuration of plots is more appropriate for urban structures and uses; and, (2) the size of all plots is reduced by an agreed proportion to create sufficient public and planned provision of roads, infrastructure, social facilities, open space and reserve plots." In land pooling, owners pool their land to create a single large plot. The act has provisions on land pooling and guided land development to carry out planned development in line with its goal of ensuring the timely and sustainable provision of urban services. Land registration, prohibited land transactions, and land use conversions are defined in the act.

The Land Pooling Rules in the Kingdom of Bhutan, 2009. The rules and regulations on land pooling in Bhutan were an offshoot of the Bhutan Land Act, 2007 and the Thromde Act, 2007. While both pieces of legislation emphasized the need for land pooling (Section 112 of the Bhutan Land Act and Section 118 of the Thromde Act), they did not provide the guidelines or procedures for the implementation of the unified servicing and subdivision of separate landholdings for planned urban development. On 12 August 2009, the Ministry of Works and Human Settlement (MoWHS) issued a circular that promulgated the adoption of the Land Pooling Rules and Regulations, which were approved by the government. These serve as the implementing rules and regulations in land acquisition for local area planning. Land pooling was required because (i) by 2020, 51% of Bhutan's population will be living in urban areas; (ii) owing to the country's hilly terrain, the development of towns is resource-intensive, and mobilization of land for urban areas is extremely expensive and difficult; and (iii) land acquisition is unpopular and brings a series of complications, owing to irregular shapes of land plots held by landowners. In land pooling, all landowners contribute up to 25%, but not more than 30%, of their landholdings to provide the area required for infrastructure and amenities, and retain the balance of the area. This approach is a win–win arrangement for the government and the landowners, since the government saves the resources required for land acquisition and the landowners retain the lands in which values are enhanced.

The Land Pooling Rules and Regulations, 2009 have the elements required for planning preparation and implementation, including public disclosure, public consultation, compensation for or replacement of loss of land and properties based on fair market value, and a grievance redress mechanism.

The landowners who do not agree will be ineligible to receive benefits from land pooling. The government will acquire the land, and the landowners will be provided with (i) alternative land with equivalent characteristics if the affected land is the only land of the displaced person; or (ii) compensation at market rates in accordance with PAVA rates (subject to an equivalency test to assess if the rate applied under PAVA is fair replacement value, as stipulated by SPS 2009). The displaced person will also be compensated at replacement value for all assets on the land acquired.

Landowners in the subproject areas that live elsewhere shall be considered absentee landowners. If, regardless of all efforts, owners cannot be reached, their lands and immovable assets thereon will be acquired. Compensation for affected properties will be valued in the same manner as that of the nonagreeing landowners, and will be deposited in escrow accounts.

There is some inconsistency between the Thromde Act, 2007 and the Land Act, 2007. Further, a more detailed and comprehensive set of secondary legislation (rules and regulations) is needed to give effect to the provisions of the Thromde Act The government is reviewing and analyzing both acts, as well as the land pooling legislation, with a view to identifying and filling the gaps and inconsistencies.

India

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 covers land acquisition and resettlement. This act has recognized the need for resettlement and rehabilitation (R&R), and replaces the Land Acquisition Act, 1894. The act aims to establish the law on land acquisition, as well as the rehabilitation and resettlement of those directly affected by land acquisition in India. The scope of the act includes all land acquisition.

The 2013 act is expected to benefit rural families who derive their primary livelihood from farming. It will also benefit urban households whose land or property is acquired. It provides compensation for rural households—both landowners and livelihood losers. The act goes beyond compensation; it mandates assistance and entitlements to those affected by land acquisition and income loss due to projects. It covers all titleholders and tenants, including families whose livelihoods are primarily dependent on the land acquired. However, it does not include squatters or encroachers.

The effects of the act, in certain cases, will apply retroactively to pending and incomplete projects. However, it exempts land acquisition for all linear projects such as highways, irrigation canals, railways, and ports. Section 25 (b) of the act mentions that if an award has been passed under Section 11 for these projects under the Land Acquisition Act, 1894, then the Land Acquisition Act will persist. If no award has been made, then for all the abovementioned projects, the Land Acquisition Act, 1894 shall be deemed to have lapsed, based on the criteria given in Section 25 of the 2013 act. Implementation of the 2013 act is taking place slowly, as the states have to understand it, and there is a lot of ambiguity in interpretation. It came into force on 1 January 2014. Some of the key features are as follows:

Acquisition for public purpose. The Land Acquisition Act, 1894 helped the government acquire private land for use for public purposes, or acquire land for companies proposing to use the land for a public purpose. The 2013 act defines public purpose more specifically, thereby reducing scope for misinterpretation. It also disallows any change in purpose after acquisition.

Social impact assessment mandatory. Under the 2013 act, social impact assessment (SIA) is mandatory. It prescribes the need for an SIA by the *gram sabha* or an equivalent body in urban areas as part of the preliminary investigations for the land acquisition. The SIA will assess public purpose; the minimum extent of the land required; and displacement and social impact on affected people, including costs. The SIA will be appraised by an expert group, and no land acquisition is allowed to be initiated unless the expert group has approved the SIA.

Specific time lines. The 2013 act provides time lines for implementation. The time line will lapse if no land acquisition notification is issued within 12 months of the expert group report. However, the time line is extendable by the appropriate level of government by a further 12 months if it is deemed necessary.

Retroactive clause. In cases where land acquisition proceedings have been initiated under the Land Acquisition Act, 1894, then (i) where no award under Section 11 of the act has been made, all provisions of the 2013 act relating to the determination of compensation, rehabilitation, and resettlement shall apply; or (ii) where an award under Section 11 has been made, such proceedings shall continue under the provisions of the Land Acquisition Act, 1894 as if the act has not been repealed.

In cases where land acquisition proceedings have been initiated under the Land Acquisition Act, 1894 and where an award under Section 11 has been made 5 years or more before the commencement of the 2013 act, but the physical possession of the land has not been taken or the compensation has not been paid, the proceedings shall be deemed to have lapsed and the appropriate government, if it so chooses, shall initiate the proceedings of such land acquisition afresh in accordance with the provisions of the 2013 act.

Furthermore, where an award has been made and compensation in respect of a majority of landholdings has not been accepted, then all beneficiaries specified in the notification for acquisition under Section 4 of the Land Acquisition Act, 1894 shall be entitled to compensation in accordance with the provisions of the 2013 act.

The benefit of the retroactive clause will ensure that projects are implemented with minimum delays.

Consent of affected persons. The 2013 act stipulates that private entities and public–private partnerships carrying out public purpose projects may approach the government to acquire land on their behalf after receiving the consent of 80% of the landowners for public projects and 75% for public–private projects.

Calculation of market value. Under the 2013 act, the entitlements and compensation calculation procedure will ensure that compensation for land will be based on the calculation of market value. The highest of the following three calculations will be adopted: (i) the market value, if any, specified in the Indian Stamp Act, 1899 for the registration of sale deeds or agreements to sell, as the case may be, in the area, where the land is situated; (ii) the average sale price for similar type of land situated in the nearest village or within the vicinity; or (iii) consented amount of compensation as agreed upon in case of acquisition of lands for private companies or for public-private partnership projects. The date for determination of the market value shall be the date on which the notification will have been issued as prescribed under Section 11 of the 2013 act. The market value should then be upped to two times for land acquired in rural areas and at least one time for land acquired in urban areas.

Payment of solatium. The 2013 act stipulates that a solatium equal to 100% of the market value of the property, including the value of assets, should also be paid.

Payment of resettlement and rehabilitation assistance. The 2013 act provides resettlement assistance for all affected people who are losing livelihood due to land acquisition. Section 100 of the act proposes the given resettlement entitlements as a minimum. The state governments or private companies may choose to set and implement a policy that pays more than what is proposed in the 2013 act.

Restrictions on acquisition of irrigated multicropped land. To safeguard food security, the 2013 act restricts any acquisition of irrigated multicropped land, except for exceptional circumstances. An equivalent area of cultivable wasteland or land value has to be deposited with government in the case of such an acquisition.

Formal and transparent mechanism for resettlement and rehabilitation implementation prescribed. The 2013 act outlines a structured institutional framework at the central, state, and project levels to carry out the acquisition and R&R.

Overall, the 2013 act provides a framework in which the interests of the person losing the land are protected. The act also empowers the government, to some extent and for defined purposes, to support infrastructure development and industrialization. The act also increases the overall cost and time required for land acquisition, thereby compelling project owners to use land more efficiently.

Nepal

Land acquisition and resettlement are covered under the Land Acquisition Act 2034, 1977 and the Land Reform Act 2021, 1964.

The Land Acquisition Act 2034, 1977. This is the core legal document to guide the process related to land acquisition and relocation in Nepal. Clause 3 of the act states that land can be acquired for a public purpose, subject to the award of compensation. According to Clause 4 of the act, institutions seeking land acquisition may also request the government to acquire land subject to the payment of compensation by such institutions. Clause 27 of the act provides for land acquisition through mutual agreement between a plot owner and a government department or agency where the process of involuntary land acquisition outlined in the act does not apply. The act grants the project proponent the right to choose between a mutual agreement process and the formal process for land acquisition.

Where Clause 27 is applied and the plot owner is not satisfied with the compensation offered by the state, under the agreement, the owner could file a complaint with the Ministry of Home (Clause 18, subclause 2) for redress. As per the regulatory provision, before acquiring private land for a public purpose, the government forms a compensation determination committee (CDC) chaired by the chief district officer. The chief of the land revenue office and a representative from the district development committee and the environmental assessment representative are the other members. A village development committee (VDC) representative and a representative of affected people are also usually invited to participate in the CDC discussions. The environmental assessment representative functions as the member secretary of the CDC. The CDC determines the amount of compensation, considering the current price of land, value of standing crops, houses, walls, sheds or other structures, and loss incurred as a result of shifting residence or place of business. The CDC also takes into consideration the relevant acts and guidelines of the government.

Clause 6 stipulates that if the land has to be acquired for institutions other than the local government bodies and government institutions, the CDC must consider the following in determining compensation: (i) price of land prevailing at the time of notification of land acquisition; (ii) price of standing crops and structures; and (iii) loss incurred by the affected person by being compelled to shift his or her residence or place of business as a consequence of the acquisition of land. As stated in Clause 9 (subsection 3) of the act, the duration of compensation payment days will be determined by the CDC. Clause 37 of the act indicates that the CDC may extend the period by an additional 3 months if compensation is not collected by those entitled. After the 3-month extension, the amount will be deposited in the government's account. The compensation for acquired land is generally paid in cash at current market value. However, there is also a provision under Clause 14 to compensate land-for-land, provided government land is available. The act also provides for the possibility of paying two separate rates of compensation, distinguishing between households that lose all their land and those that lose only part of it.

In Clause 10, affected people can take the crops, trees, plants, and salvageable materials from acquired land. Clause 39 states that an affected household can take all salvageable assets and the value of such assets will not be deducted from the compensation. Any grievance and objection regarding the above will be referred to the grievance redress committee (GRC) as per Clause 11. The act assigns the chief district officer the sole responsibility of overseeing the land acquisition process and activities and to deal with the grievances related to land acquisition and compensation. Clause 20 of the act entitles the legal tenant to 100% compensation for the structures built by him or her on the land with the permission of the landowner. Clause 68 (1) of the Forest Act 2049, 1993 states that the government may permit the use of forestland for a project of national priority. According to Clause 68 (2), if any loss to affected people or their community is involved while permitting use of such land, it is required to compensate the loss.

The Land Reform Act 2021, 1964. This act establishes the tiller's right to the land they are tilling. It also specifies the compensation entitlements of registered tenants on land sold by the owner or acquired for development purposes. The most recent amendment, in 2001, established a rule that when the state acquires land under tenancy, the tenant and the landlord will each be entitled to 50% of the total compensation amount. Tenants are verified through a record of tenancy at the land revenue office.

Based on the acts and policies described, the following few major gaps have been identified when compared with the ADB SPS 2009 requirements:

Recognizing nontitleholders. The ADB SPS mandates that any person, regardless of their title to land, will be eligible to assistance if impacted by a project. All three countries lack any clear-cut policy in recognizing nontitleholders, especially squatters and encroachers. Nontitleholders are most problematic in India, followed by Nepal and Bhutan. The governments agree that recognizing people without legal title and providing benefits to them will encourage nontitleholders to see this as an opportunity to squat and avail of project benefits, which will encourage further such cases. In many instances, there are non-ADB projects in the same sector where the nontitleholders affected by the project do not receive any benefits. This causes implementation issues in the non-ADB projects.

In India, for example, the state governments are reluctant to recognize nontitleholders, and only address them under internationally funded projects where it is mandatory to do so. Also, under the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 nontitleholders, such as sharecroppers, tenants, and agricultural laborers, are recognized, but squatters and encroachers are not. Nepal also does not have any policy that recognizes nontitleholders. However, under the Land Reform Act 2021, 1964, the person tilling the land is also entitled to 50% of compensation awarded to the owner of the land. Bhutan provides for alternate land to those who become landless. However, in the Road Network Project II, during the site visit, it was seen that the project did not disturb roadside squatters. The issue of recognizing nontitleholders is debatable. The government is expected to keep its land free of encroachers. Due to lack of resources, the different agencies, especially in urban areas and in the road sector, are unable to monitor and check encroachments on a regular basis.

The issue of nontitleholders is a major gap between country legislation and the ADB SPS. The countries recognize the issue, but can sometimes be put off by the scale of the problem. All three countries, but especially India and Nepal, must first deal with the issue of poverty,[5] which can be the trigger for encroachment and squatting on available government land.

Compensation at replacement cost. This cost is referred to in the land acquisition acts of all three countries. However, interpretation varies. ADB's requirement states that compensation must be paid at replacement cost. The replacement cost of the acquired assets and property is the amount required for the affected person to replace or reconstruct the lost assets through purchase in the open market.

The provisions for replacement cost in the Land Act, 2007 of Bhutan and the Right to Fair Compensation and Transparency in Land Acquisition and Resettlement and Rehabilitation Act, 2013 of India are in line with the ADB SPS. Bhutan provides the landowner with replacement land commensurate to the value of the land acquired. The land under acquisition will be taken over only after registering the replacement land in the name of the affected landowner or after the cash compensation in replacement cost has been made to the landowners (clause 158, Land Act of Bhutan, 2007).

The difference between the compensation determined by the *dzongkhag* and the replacement cost determined by the block development committees will be paid as a productive asset grant in kind (as seen in the Road Network Project II). Under the Land Pooling Act, the government allows land for land or land commensurate with the value of land lost; this is in line with the principle of replacement cost of the SPS. Families who become landless as a result of land acquisition are allotted land as per provisions of the Land Act, 2007. The location of replacement land is allotted in the order of preference of the same village, *gewog*, and *dzongkhag* (clause 155, Land Act of Bhutan, 2007).

In India, the option of land for land is difficult due to the unavailability of government land.

[5] The Third Nepal Living Standards survey, carried out in 2010–2011, puts 25.2% of Nepalis below the poverty line. For India, the figure is 21.9%, based on Planning Commission data for 2011–2012. In Bhutan, according to the National Statistics bureau, the multidimensional poverty rate for 2012 is 12.7% of the population.

In Nepal, compensation for the acquired land or property is determined by a compensation fixation committee comprising the chief district officer, the land revenue officer, the project manager, and representatives of the district development committee. This is the market value of the property as per the rules and regulations. The compensation is paid in cash and separate compensation rates are fixed for the partially affected land or completely affected land (Clause 13). According to the Land Act, the market value of land is given. Whether or not this is equivalent to the replacement cost within the SPS context will depend on the rates fixed by the compensation fixation committee. In the case of Nepal, there is ambiguity about whether the fixed rates translate into replacement cost as required in the SPS.

In India, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 provides the market value with a detailed calculation of market value that includes (i) the value of land to be determined as provided under Section 26; (ii) the factor by which the land value based on the calculation under Section 26 is to be multiplied (in the case of rural areas, this is 1–2 times, based on the distance of the project from urban areas, as may be notified by the appropriate government, and a factor of 1 for urban areas); (iii) the value of assets attached to land or buildings under Section 31; and (iv) solatium equivalent to 100% of the market value of land, multiplied by the factor specified for urban and rural areas. The market value of land is calculated in a manner that is in line with the principle of replacement cost, as given in the SPS.

Restoration or enhancement of livelihood. The SPS requires that any impact on livelihood should be compensated. The resettlement frameworks and entitlement matrixes of ADB-funded projects contain suggested options for income restoration or enhancement. These include providing affected people with income-generating assets and/or training in income-generating options, based on the skills and requirements of the person, such as tailoring, animal husbandry, beekeeping, and computer skills. In Bhutan, the Land Act does not mention any livelihood restoration due to loss of land. However, it does mention that *kidu* (rehabilitation land) can be granted by the *Druk Gyalpo* (King of Bhutan). In Nepal, there is no specific undertaking to restore loss of livelihood, other than compensation for land and assets acquired. However, in India, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 outlines livelihood restoration measures, including employment opportunities in the project and payment for loss of business.

This principle of income restoration in urban areas has to be applied on a project-by-project basis. For example, the standard principle given in most resettlement frameworks in these countries is that the project will make good any impact to business. This is difficult to apply in dense commercial locations where, for example, a water pipeline is being located. There will be temporary disruptions, and access to commercial establishment will be disturbed. However, it is difficult to compute the income lost due to the reduction in the number of customers potentially caused by a project and expect the executing agency to provide compensation for the loss.

The main differences between borrower governments' policies and legislation and the ADB SPS which need to be addressed fall into the categories of compensation at replacement cost and restoration or enhancement of livelihood. In some cases, the differences reflect borrower governments' reluctance to comply because of the implications of the requirement for other non-ADB-funded projects.

All three countries are already or have been taking steps to restructure their policies and legislation accordingly. Whether or not these steps meet the ADB SPS requirements, they are moves in the right direction, where involvement of the affected people and their rehabilitation and resettlement are receiving due consideration.

Among the three countries, India's Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 aligns more closely, although not completely, with the social safeguard principles of ADB and the World Bank. It considers families whose livelihoods are primarily dependent on land acquired, including sharecroppers and agricultural laborers, but does not include other nontitleholders such as squatters and encroachers. It stipulates the minimum requirements for safeguards, but allows, in Clause

100, individual projects to provide benefits beyond those stipulated.

Bhutan has different policies governing land acquisition and resettlement. Both acts are under review with a view to identifying and filling gaps and inconsistencies. Neither act recognizes nontitleholders.

In Nepal, to establish an efficient land market and address the challenges of limited options for relocation of project-affected people and the widening scope of safeguard policies, the National Planning Commission recently approved the Land Acquisition, Compensation and Resettlement Policy with ADB technical assistance to develop a national resettlement policy framework for implementation of development projects in a socially responsible manner. The draft policy approximates the requirements of the SPS. Drafted in 2006 with additional ADB support[6] and updated with advisory support in 2010, the policy has received Cabinet approval as of 28 February 2015. The implementation of the policy is, however, constrained by weak institutional capacity, lack of resources, lack of awareness on regulatory provisions, limited skilled human resources, and the general pressure to fast-track development work with little regard for resettlement issues. Major highlights of the draft policy are avoidance of involuntary resettlement, priority on negotiated acquisition, acceptance of the principle of replacement cost, provision of SIA, emphasis on consultation and participation during the project cycle, and a strong grievance redress and monitoring mechanism. In essence, the policy recommends amendment of the existing act, development of sector technical guidelines, and enhancement of the institutional framework and capacity for the improvement of the involuntary resettlement safeguard system in Nepal.

b. ADB's Policy on Indigenous Peoples

With regard to indigenous peoples, the SPS states that borrowers and/or clients are required to safeguard any indigenous peoples affected by ADB-supported projects. It discusses the objectives and scope of application, and underscores the requirements pertaining to (i) undertaking the SIA and planning process; (ii) preparing SIA reports and planning documents; (iii) disclosing information and undertaking consultation, including obtaining the consent of affected indigenous people community to selected project activities; (iv) establishing a grievance redress mechanism; and (v) monitoring and reporting. This set of policy requirements will safeguard indigenous people's rights to maintain, sustain, and preserve their cultural identities, practices, and habitats and to ensure that projects affecting them will take the necessary measures to protect these rights.

The indigenous people safeguards are triggered if a project directly or indirectly affects the dignity, human rights, livelihood systems, or culture of indigenous peoples or affects the territories or natural and cultural resources that indigenous peoples own, use, occupy, or claim as their ancestral domain. The following paragraphs describe the policies and legislation of the three selected South Asian countries that safeguard the interests of indigenous peoples:

Bhutan

In Bhutan, there is no specific policy addressing indigenous peoples.

India

A number of central-level laws address the rights of Scheduled Castes and Scheduled Tribes. The first legal notification specifically for the protection of Scheduled Tribes was issued in 1950. The Constitution, through several articles, has provided for the socioeconomic development and empowerment of Scheduled Tribes. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 also protects the Scheduled Tribes and has separate provisions for them. Some of the laws are as follows:

The Fifth Schedule. Article 244 (1) of the Constitution states that the distinct identity and the rights of the tribal people of the Scheduled Areas need to be protected. Special provisions were therefore laid down in the Fifth Schedule to the Constitution. The Fifth Schedule is the constitutional provision with reference to the administration and development of the Scheduled

[6] ADB. 2011. *Technical Assistance for Strengthening and Use of Country Safeguard Systems*. Manila (Subproject: Strengthening Involuntary Resettlement Safeguard Systems in Nepal).

Areas and Scheduled Tribes in India. It has been framed to protect the rights of the Adivasi to their land, forest, and water as their natural rights. The Fifth Schedule is incorporated in the Constitution of India to allow the character and life of tribal peoples to exist side by side with the general population.

Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996. The Parliament of India passed the Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996 to extend the provisions of the 73rd Constitutional Amendment to the Fifth Schedule areas of the country. This act accords statutory status to the *gram sabhas* in Fifth Schedule areas with wide-ranging powers and authority. This aspect was missing from the provisions of the 73rd Constitutional Amendment. The act has recognized the prevailing traditional practices and customary laws as well as placing of the management and control of all the natural resources—land, water and forest—in the hands of people living in the Scheduled Areas. The act empowers people in the tribal areas through self-governance.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. This act recognizes and vests the forest rights and occupation in forest land to Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations, but whose rights are not recorded. Notwithstanding any other law in force, and subject to the provisions of the act, the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 extends to almost the whole of India. The act is for members or communities of the Scheduled Tribes who primarily reside in forests or forest lands for their livelihood, including Scheduled Tribe pastoralist communities (who must have been residing in the forest more than 75 years).

The central government recognizes and vests forest rights with forest-dwelling people where they are declared as Scheduled Tribes and other traditional forest dwellers. The act provides a detailed list of the rights of Scheduled Tribes and forest dwellers.

Draft National Tribal Policy. The Ministry of Tribal Affairs has prepared a draft of the National Tribal Policy (which has yet to go to the Cabinet for approval). This is the first time the government has produced a policy that considers the issue of development of Scheduled Tribes in an integrated and holistic manner. The policy aims to bring Scheduled Tribes up to the same level as the rest of the population in terms of their human development index, socioeconomic conditions, and basic infrastructure facilities. The policy provides for regulatory protection, socioeconomic and political empowerment, development of infrastructure, increased livelihood opportunities, improved governance and administration, preservation of cultural and traditional rights and traditional knowledge, protection of traditional knowledge in the intellectual property rights regime, and access to privileges.

The Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989. The act deals with atrocities against members of Scheduled Castes and Scheduled Tribes.

Nepal

Indigenous and/or tribal communities are popularly known as Adivasi and Janajati. Of 100 ethnic and caste groups listed by the Central Bureau of Statistics, Nepal in the 2001 census, 59 are Janajati. Of this group, 18 are in mountain areas, 23 in hill areas, 7 in the inner Terai region, and 11 in the Terai region. Acknowledging the diversity in livelihood patterns, income sources, and socioeconomic development status among Janajati groups, the National Foundation for Development of Indigenous Nationalities (2005) has classified them into five broad categories based on the level of their socioeconomic development status or the degree of marginalization. The Interim Constitution of 2007 recognizes the rights of Adivasi and Janajati to "participate in state structures on the basis of principles of proportional inclusion" (article 21), and authorizes the state to implement special measures "for the protection, empowerment and advancement of indigenous nationalities" (article 13).

The specific policy initiatives for the advancement of Adivasi, Janajati, and other communities started in 1997. The National Committee for Development of Indigenous Nationalities was set up in 2002 to ensure the welfare of Adivasi and Janajati. In 2002, Parliament passed a bill enabling the establishment

of the National Foundation for Development of Indigenous Nationalities. The National Foundation for Development of Indigenous Nationalities Act, 2002 established the first comprehensive policy and institutional framework pertaining to Adivasi and Janajati. The foundation is a semiautonomous body that acts as the state's focal point for indigenous policy, with a mandate to recommend measures to promote the welfare of indigenous groups, paying attention to their social, economic, and cultural rights and requirements. The National Federation of Indigenous Nationalities Act, 2002; the National Human Rights Action Plan, 2005; the Environmental Act, 1997; and the Forest Act, 1993 have also provided for the protection and promotion of Janajati's traditional knowledge and cultural heritage. The Local Self-Governance Act, 1999 gave more power to local political bodies to promote, preserve, and protect Janajati's language, religion, culture, and welfare. A technical committee, established in 2010 by the Government of Nepal, updated the number of Janajati groups to 81.

Based on the observations of ADB-supported projects in India, projects with impacts on indigenous groups are generally avoided. If the project location cannot be changed and impacts are unavoidable, then alternative designs are worked out to minimize impacts. Fewer indigenous people development plans are prepared than resettlement plans, indicating that most projects avoid areas where indigenous peoples are present. Should these areas be affected, the projects minimize the negative impacts, thus avoiding a separate plan, or, depending on the impacts, incorporate the mitigation measures within the resettlement plan adhering to SPS requirements.

The main gap between ADB requirements and country policies in preparing an indigenous people development plan are (i) the sense that it is an additional task for the executing agencies who, in most cases, want to reduce the quantity of safeguard documentation and clearances required; the scenario is different in Bhutan, however, where there are no country laws covering impacts on Scheduled Tribes; (ii) most executing agencies have limited capacity and human resources and therefore find it challenging to deal with involuntary resettlement issues and implementation of the resettlement plan, such as setting up GRCs, so adding another task related to implementing indigenous people development plans is clearly undesirable; and (iii) if the project has a positive overall impact on the community, including indigenous peoples, the preparation of an indigenous people development plan is more for documentation than to benefit the people. For example, in the case of land donation for roads, if everyone in the community will benefit from it, including indigenous peoples, then the need to make a separate plan for indigenous peoples is debatable.

c. Current ADB Approach to Social Safeguard Implementation in South Asia

Efforts are being made to track social safeguard compliance through piloting of various systems in the India and Nepal resident missions, and the South Asia Department at ADB headquarters. These aim to create a unified system. Another area that needs to be looked into is the delegation projects from headquarters to the resident missions. There is generally a time lag at hand-over during which no missions are fielded to the project site. This makes it difficult to keep to time lines. A lack of clear communication at handover about decisions that have been taken can lead to further delays. It is suggested that a checklist be prepared before handing over, highlighting all the potential issues and noting the delivery time lines.

B. Project Case Studies in Bhutan, India, and Nepal

The core activity of the capacity development technical assistance (CDTA) was an examination of representative projects in Bhutan, India, and Nepal to calibrate ADB observations on safeguard implementation and uncover safeguard implementation issues that might be common to most projects, as well as those that might be specific to certain types of projects and locations. This reality check was then used to define appropriate measures to optimize safeguard implementation in South Asia. The Appendix provides the basic details of the 10 case study projects, including their safeguard categories. The following paragraphs summarize the basic technical details of each project. Most of the projects were located in challenging locations in the hills and mountains along the southern flank of the Himalayas, which tested safeguard design and implementation capability.

Bhutan

The **Dagachhu Hydropower Development Subproject** is part of the Green Power Development Project.[7] The Green Power Development Project has two components: regional clean power trade and renewable energy access for the poor. Under the first component, the Dagachhu hydropower development (a 126-megawatt [MW] run-of-river type) aims to export power from Bhutan through the existing grid to India. The rural electrification component will provide access to electricity sourced from hydropower to 8,767 households and facilities with grid extensions, and electricity sourced from solar energy to 119 remote public facilities (schools, health clinics, and other community facilities) on an off-grid basis. The Dagachhu hydropower development will be promoted by a joint venture company between Druk Green Power Corporation in Bhutan and Tata Power in India through a public–private partnership (PPP). The rural electrification component will be served mainly by the Bhutan Power Corporation, a public utility service company. The safeguard categories are Environment: B, Involuntary Resettlement: B, and Indigenous Peoples: C.

The **Urban Infrastructure Project** will support the Government of Bhutan's efforts toward sustainable urban development in its two largest municipalities (Phuentsholing and Thimphu) and two emerging urban centers (Samdrup Jongkhar Municipality and Nganglam Town).[8] It will have four outputs: (i) water supply and sanitation infrastructure rehabilitation and expansion, (ii) mobility improvement, (iii) urban management strengthening, and (iv) project management and capacity development. This will lead to sustainable access to urban services in Chukha, Pemagatshel, Samdrup Jongkhar Municipality, and Thimphu *dzongkhags* (districts). The safeguard categories are Environment: B, Involuntary Resettlement: C, and Indigenous Peoples: C.

The **Road Network Project II** will upgrade or construct five critical sections (about 180 km) of the southern east–west highway: Manitar–Raidak, Raidak–Lhamoizingkha, Pangbang–Amshingwoong (Nganglam), Tsebar–Mikuri–Durung Ri, and Samdrupcholing–Samrang.[9] These proposed road sections provide access to the border crossings and have significant regional implications. Road improvement and construction works under the project include construction of roadways, including longitudinal drainage structures; installation of culverts and bridges; and construction of new bridges and cross-drainage structures, and structures for resettlement and rehabilitation. The project will also enhance overall sector management capacity by providing (i) equipment necessary for the Royal Government of Bhutan to enhance sector capacity, (ii) on-the-job training for social and environmental requirements through detailed design and construction supervision consultants, and (iii) technical assistance to support the capacity building of the Department of Roads. Expanded road transport capacity in the southern region will facilitate efficient and safe transport in the southern region of the country and with India and through India to Bangladesh and Nepal. This will promote industrial development in the southern economic hubs and increased regional trade. The safeguard categories are Environment: A, Involuntary Resettlement: B, and Indigenous Peoples: C.

India

The Bangalore Metro Rail Corporation (BMRC) **Bangalore Metro Rail Transit System Project** will implement a metro rail project in Bangalore.[10] The scope of the project includes the development of 42.3 kilometers (km) of metro rail, 40 stations, 2 station depots, signaling, the electro-mechanical system, and all ancillary facilities and rolling stock. The metro alignment for the city would follow two main transit corridors: (i) an east–west corridor of 18.1 km, starting at Byappanahalli and terminating at the Mysore Road terminal; and (ii) a north–south corridor of 24.2 km, starting at Nagasandra and terminating at Puttenahalli.

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7 ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loans, Asian Development Fund Grant, Technical Assistance Grant, and Administration of Grant for the Green Power Development Project in Bhutan.* Manila (37399-013, approved 29 October).

8 ADB. 2011. *Report and Recommendations of the President to the Board of Directors: Proposed Loan to the Kingdom of Bhutan for the Urban Infrastructure Project.* Manila (44240-013, approved 29 November).

9 ADB. 2009. *Report and Recommendations of the President to the Board of Directors: Proposed Asian Development Fund Grant to the Kingdom of Bhutan for the Road Network Project II*. Manila (39225-022, approved 10 November).

10 ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for the Bangalore Metro Rail Transit System Project in India.* Manila (43912-014, approved 31 March).

Of the planned length, 8.82 km near City Railway Station, Vidhana Soudha, Majestic, and City Market will be underground sections, and the rest will be elevated. The safeguard categories are Environment: B, Involuntary Resettlement: C, and Indigenous Peoples: C.

The Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC) **North Karnataka Urban Sector Investment Program** Tranche 3 aims to upgrade urban infrastructure, strengthen municipal management and project implementation capacity, leading to improved access to better urban services in eight urban local bodies (ULBs).[11] This will eventually lead to improved quality of life in program ULBs and increased economic growth relative to the whole state. The safeguard categories are Environment: B, Involuntary Resettlement: B, and Indigenous Peoples: C.

The **Assam Urban Infrastructure Investment Program** (AUIIP) Tranche 1 is part of a multitranche financing facility (MFF).[12] The MFF adopts a strategic and integrated approach to sustainable urban environmental improvement in Guwahati and Dibrugarh, Assam, including water supply, wastewater treatment, solid waste management, drainage, and a bus rapid transit corridor. Tranche 1 will support MFF management and implementation, including equipment, logistics, and the consultants to assist the program management unit (PMU) in detailed design, construction supervision, and related training and capacity building. The project will provide improved and sustainable urban services at the standards set by the government in the three cities by delivering improved and increased water supply, solid waste management, and drainage infrastructure for flood reduction. The safeguard categories are Environment: B, Involuntary Resettlement: B, and Indigenous Peoples: C.

The Bihar State Road Development Corporation **Bihar State Highways II Project** will expand the original Bihar State Highways Project output by rehabilitating and upgrading about 254 km of state highways in Bihar identified under the Bihar State Highways Development Program.[13] These severely deteriorated highway sections are located in the very poor northern and southern parts of the state. The project will involve upgrading existing roads to two lanes; strengthening existing pavement, culverts, and bridges; and constructing new bridges and cross-drainage structures. Consulting services will be provided to supervise the implementation of civil works. The project will support a more efficient and safe state road transport system that enables sustainable economic growth in Bihar State. The safeguard categories are Environment: B, Involuntary Resettlement: A, and Indigenous Peoples: C.

Nepal

The Nepal Electricity Authority **Electricity Transmission Expansion and Supply Improvement Project** will improve the reliability of energy supply in Nepal and strengthen the transmission infrastructure needed to expand Nepal's capacity for cross-border energy trade.[14] It will support three critical areas of the electricity supply industry that have experienced severe underinvestment: (i) expansion of electricity transmission capacity, (ii) strengthening of distribution systems including those along the Tamakoshi (Khimti)–Kathmandu transmission line, and (iii) rehabilitation of selected small hydropower plants. The safeguard categories are Environment: B, Involuntary Resettlement: B, and Indigenous Peoples: C.

The **Second Small Towns Water Supply and Sanitation Sector Project** has three components.[15] Component 1 will develop an efficient, effective, and accountable urban water supply and sanitation sector by establishing and implementing policies, establishing service standards, and enhancing sector coordination. Component 2 will develop safe, accessible, and adequate water supply and sanitation facilities in about 20 small towns (about

11 ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility for the North Karnataka Urban Sector Investment Program Tranche III in India.* Manila (38254-053, approved 22 August).

12 ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility for the Assam Urban Infrastructure Investment Program in India.* Manila (42265-023, approved 18 November).

13 ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for Additional Financing and Technical Assistance Grant for the Bihar State Highways II Project in India.* Manila (44425-013, approved 20 September).

14 ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan for Electricity Transmission Expansion and Supply Improvement Project in Nepal.* Manila (41155-013, approved 15 November).

15 ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Asian Development Fund Grant Nepal: Second Small Towns Water Supply and Sanitation Sector Project*. Manila (41022-022, approved 17 September).

240,000 people). Component 3 will strengthen governance and capacity for project management and operation. The project is expected to lead to improved health and economic and environmental living conditions of people in small towns in Nepal through improved, affordable, and sustainable water supply and sanitation services that are governed and managed by locally accountable representative bodies. The safeguard categories are Environment: B, Involuntary Resettlement: B, and Indigenous Peoples: B.

The **Rural Reconstruction and Rehabilitation Sector Development Program**[16] will improve rural roads, develop and improve community-based supplementary rural infrastructure; enhance equity, employment, and income opportunities for the poor and disadvantaged; strengthen institutional capacity of the Ministry of Local Development, Department of Local Infrastructure Development and Agricultural Roads, district development committees, and communities; improve project management; improve connectivity; enhance economic and employment opportunities; and increase access to market and social services of rural communities to help reduce rural poverty in hill, mountain, and Terai districts, and other isolated areas. The safeguard categories are Environment: B, Involuntary Resettlement: B, and Indigenous Peoples: B.

The implementation of environmental safeguards is examined for each of the 10 projects, followed by the social safeguards in 9 of the projects.

1. Examination of Environmental Safeguard Implementation

a. Dagachhu Hydropower Development Project, Bhutan

The Dagachhu Hydropower Development Project is a 126-megawatt run-of-river power scheme. The project was approved in October 2008, and as of May 2013, construction was 90% complete. Additional financing will be required to cover construction cost overruns incurred mainly because of unexpected geological conditions in the underground excavation works. The project is located in Dagana, in southwestern Bhutan, about 50 km from the border with India. The power component includes the weir, headrace tunnel, powerhouse, and tailrace, as well as the permanent colony for the project near the powerhouse. The remaining work includes completion of the headworks, including the fish ladder; a small amount of tunneling; finishing work on the powerhouse and tailrace; and site rehabilitation and final landscaping (Figure 2). The implementation of the EMP for the Dagachhu project and the environmental status of the project sites were examined to clarify the compliance of the project with the environmental safeguards.

The meetings and site visits were intended to determine the status of the Dagachhu project, the site conditions, and ongoing environmental management measures and compliance reporting. All project elements were examined. In addition, all the quarterly environmental safeguard reports since the inception of the project were reviewed, and key activities and observations were logged. The original environmental assessment and the report and recommendation of the President for the project were also reviewed, along with a May 2013 information report on environmental and social safeguards, which provided empirical environmental data.[17] The institutional setup for environmental management was also examined. The Dagachhu project has its own environmental safeguard staff: a chief environment officer and an assistant environment officer, and ground staff, all on site.

In the original ADB assessment and approval, the Dagachhu project was categorized as Environment: B. The National Environment Commission (NEC) approved the project in 2007 and ADB approved the loan in 2008. The NEC continued to provide all environmental clearances to the end of December 2013. Five covenants in the loan agreement relate to environmental safeguards. These are listed in Table 2, along with status of compliance. In addition, quarterly safeguard progress reports are required during construction, all of which have been submitted to date, and annual environmental safeguard compliance reports will be required during operation.

[16] ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Asian Development Fund Grants for the Rural Reconstruction and Rehabilitation Sector Development Program in Nepal.* Manila (40554-022, approved 4 December).

[17] This covered air and water quality monitoring results, as well as the discharge data for 2010 and 2011 for the above- and below-weir stretches of the river, to allow calculation of minimum environmental flow based on recent historical data for the Dagachhu River.

Figure 2: The Dagachhu Dam Site and Flow Diversion

L-R, top-bottom: (a) Downstream of dam; (b) beginning of headrace tunnel; (c) gates and intake; (d) upstream of cofferdam; (e) diversion flow tunnel; (f) inflow to flow diversion; (g) excellent water quality near diversion tunnel.

Table 2: Environmental Covenants in the Dagachhu Loan Agreement

Covenants	Reference	Responsible Agencies	Compliance Status
The borrower, DGPC, and DHPC shall each ensure that the project is implemented in accordance with all environmental safeguard measures. DGPC and DHPC shall adequately supervise the construction works carried out by private contractors to ensure compliance with these environmental safeguard measures.	(LA, Sch 5, para 16)	DGPC/DHPC	Being complied with.
The borrower, DGPC, and DHPC shall each ensure that the project is undertaken and all facilities and associated equipment are assessed, operated, and maintained in accordance with applicable laws of the government, ADB, and internal environmental policies and safeguard operational rules of DGPC and DHPC.	(LA, Sch 5, para 17)	DGPC/DHPC	Being complied with.
The borrower, DGPC, and DHPC shall each ensure that the outcomes of the EIA, SIEE, and IEEs, and mitigation measures identified in the EMP and relevant government agencies are complied with during design, construction, and operation of the project. The borrower shall cause DGPC and DHPC to monitor and audit the implementation of EMP and provide reports to ADB twice a year on the implementation of EMP.	(LA, Sch 5, para 18)	DGPC/DHPC	Being complied with. Based on the fish assessment and advice of NEC, a fish ladder was adopted and is being constructed.
The borrower, DGPC, and DHPC shall each ensure that construction (a) does not take place within national parks, wild and planted forests, and wildlife sanctuaries without prior environmental clearances obtained from all relevant government agencies; and (b) avoids monuments of cultural or historical importance.	(LA, Sch 5, para 19)	DGPC/DHPC	Has been complied with.
The borrower shall cause DGPC and DHPC to (a) monitor the air, soil, and water quality baseline and the minimum ecological water flow for a minimum of 2 years, and (b) update the EMP and revise and update EMP if any unanticipated environmental impacts arise.	(LA, Sch 5, para 20)	DGPC/DHPC	Has been complied with.

ADB = Asian Development Bank, DGPC = Druk Green Power Corporation, DHPC = Dagachhu Hydro Power Corporation, EIA = environmental impact assessment, EMP = environmental management plan, IEE = initial environmental examination, LA = loan agreement, NEC = National Environment Commission.

Source: J. Carter. 2013. *Environmental Compliance Report for the Dagachhu Hydropower Project*. Manila: ADB.

At all locations, site rehabilitation, slope stabilization, and tree planting were in evidence, and dust management was under way, reflecting the requirements in the EMP (Figure 3). Vegetation was well established adjacent to all work sites, and wildlife was seen in abundance, especially at the headworks site, where many white langurs were observed on the right bank. Water quality above and below the headworks was observed to be very good at the time of the field visit (May 2013). The discharge rate and velocity were good, keeping the river clear. Fish could be seen in pools above the cofferdam, indicating that the flow diversion tunnel is providing easy access for them. At least two species were seen, and this year's fingerlings of an unidentified species were evident throughout all the shallow areas above the cofferdam. The tributary immediately below the cofferdam was in flow in the second-leanest discharge month in the year, and appears to be permanent, which will help maintain a minimum environmental flow.

There are only 5 species of fish in the Dagachhu River, although the Punatsangchhu River into which it flows has 10. The fish in the Dagachhu River are neither rare nor endangered; only one—*Garra* sp., which is very common in the region—is a seasonal migrant, moving upstream in March–April and downstream in September. Because of its presence, the NEC has recommended a fish ladder. Most of the river flow in the Dagachhu below the weir will go through the fish ladder, maintaining a minimum of 1.4 cubic meters per second at all times, and more in the monsoon. It will be approximately 440 meters long, on the left bank of the river, alternatively open and closed, with 11 direction changes, managing a water elevation difference of 24.3 meters. This will provide a grade of only

Figure 3: Slope Stabilization at the Dagachhu Dam Site, Dam Site Colony, and Tributary

L–R, top-bottom: (a) Slope stabilization at de-silter area before second section of headrace tunnel; (b) slope stabilization along the river; (c) and (d) permanent Dagachhu colony (near powerhouse) and dam site colony; (e) and (f) permanent tributary immediately below the Dagachhu weir.

5%, which is very conservative, in favor of effective fish migration. The proposed fish ladder will have 29 resting pools, which is another good design feature. Based on a review of the literature, the proposed fish ladder should be effective for any fish migration in the Dagachhu River.

The field observations and review of all the environmental safeguard progress reports to date indicate that the EMP requirements and covenants in the loan agreement have been considered seriously and implemented effectively. There are no major environmental issues at any of the work sites, the proposed design features for the fish ladder appear to be appropriate for the local conditions, and active site stabilization and rehabilitation are underway. The Environmental Unit of Dagachhu Hydro Power Corporation is staffed, environmental monitoring proceeds routinely, and all environmental safeguard progress reports have been submitted. Table 3 shows the progression of EMP activities and key activities and results, as documented in the safeguard progress reports.

All activities appear to be in compliance with the applicable national and local environmental laws and regulations. NEC monitoring to date indicates compliance with national environmental standards, which has led to the extension of the environmental clearances to ensure proper completion of the construction works.

In conclusion, the field observations and review of the environmental safeguard progress reports, as well as review of the Dagachhu discharge data and the technical specifications of the fish ladder indicate that there are no existing or developing environmental issues related to this project, and that the required environmental safeguards have been effectively implemented. The current EMP practices appear to be appropriate and adequate to contain the temporary environmental impacts that have been expected and encountered during the construction phase. The NEC has been actively involved in providing environmental oversight for the project, and has made recommendations that have been taken up by the project—e.g., the fish ladder and management of spoil. Having environmental safeguard staff on site most of the time and frequent briefings with contractor supervisors at the different work sites have been positive factors.

Environmental monitoring could be more rigorous, especially given the presence of environmental safeguard staff on site most of the time. For example, some provision is suggested for monitoring the effectiveness of the fish ladder over 2 years of operation, as well as the downstream discharge over 2 years, to confirm the effectiveness of the minimum environmental flow. This can be set up with frequent baseline monitoring now, as noted in Table 4. There is scope for more technical

Table 3: Key Activities and Results from the Environmental Safeguard Progress Reports

- Dagachhu Hydro Power Corporation (DHPC) Environment Unit in place, with chief environment officer, assistant environment officer, and three support staff.
- All required National Environment Commission environmental clearances are good to 31 December 2013 (including Gomlachhu stone quarry, stone crushing plant, batching plant, and worker colony).
- Dumping yards have gabion walls and check dams to avoid muck overflow.
- An alternative dumping yard was found when first one was filled.
- A catch drain has been installed at Dala dumping yard, and a diverting drain constructed at the surge shaft.
- Dumping yards will be graded and revegetated. The first one is already being rehabilitated.
- Wastewater from the tunnels goes through a filter tank, before being discharged back to the river.
- 9,100 ornamental trees have been planted or donated, mostly along the access roads. Tree planting started in June 2010, with mesh protection around saplings. All tree cuts were logged for compensation. There is a good survival and growth rates of saplings of about 75%.
- The Department of Forest Office and the DHPC monitor for illegal poaching and fishing. Signs are also posted to this effect.
- Wildlife and bird species are observed and logged on a regular basis.
- There is routine monitoring of air and water quality, and less frequent monitoring of soil quality. About 90% of the samples are below Bhutan standards for these media. Monitoring is undertaken by government agencies, as well as the DHPC. Noise has also been monitored and found to be within standards.
- Water sprinkling for dust management is a continuous activity. It was increased after a suggestion by the National Environment Commission. Hard topping will eliminate dust issues during project operation.
- Safety training is implemented and personal protection equipment issued.
- There is active waste management, with bathroom and kitchen wastewater going to septic tanks. There is no discharge of equipment to the river.

Source: J. Carter. 2013. *Environmental Compliance Report for the Dagachhu Hydropower Project.* Manila: ADB.

Table 4: Proposed Monitoring before and during Project Operation

Parameter	Proposed Action	Target Dates	Responsibility
Ongoing measurement of discharge from the tributaries immediately below the weir and the fish pass	Undertake two-dimensional profile and flow velocity measurements to obtain current discharge, relative to the discharge above the weir.	Monthly, through 2013 and 2014	Dagachhu project staff (assistant environment officer), with information going to ADB in regular environmental safeguard reports
Sampling of fish above and below the weir	Simple fish trap observations (24-hour traps, as discussed with Dagachhu staff), once per week, just above the cofferdam and/or weir and just below the headworks, during monsoon and during lean season.	During monsoon and lean season in 2013 and 2014	Dagachhu project staff (assistant environment officer), with information going to ADB in regular environmental safeguard reports

ADB = Asian Development Bank.

Source: J. Carter. 2013. *Environmental Compliance Report for the Dagachhu Hydropower Project.* Manila: ADB.

training of government agencies and project staff on environmental monitoring to support environmental safeguard design and implementation.

b. Urban Infrastructure Project, Bhutan

The ADB-supported Urban Infrastructure Project aims to (i) improve urban infrastructure planning; (ii) construct urban roads, drainage, and other public infrastructure; (iii) increase water treatment, supply, and sanitation coverage; (iv) enhance community awareness of proper hygiene; and (v) provide capacity building training in urban facility management to staff of the cities and towns involved and the executing agency—the Department of Urban Development and Engineering Services of the Ministry of Works and Human Settlement (MoWHS).[18] The project is in the final phases, with completion expected by 2016. There is a project management unit (PMU) within the MoWHS, consisting of a project manager supported by a team of project management consultants. The project has five components: components A–C pertain to infrastructure and services, and parts D and E address capacity building. Component A is implemented by the Thimphu City Corporation, component B by the Phuentsholing City Corporation, component C by the Dagana Dzongkhag Administration, and components D and E by the Department of Urban Development and Engineering Services. Each entity responsible for a project component has a project implementation unit (PIU), comprising municipal staff that are responsible for the day-to-day implementation of project activities in their area and preparation of monthly reports.

There is a range of infrastructure projects in the first three components, with the most substantial works addressing the road, drain, sewerage, and water supply systems in the four local area plans in Thimphu. The urban infrastructure development in Phuentsholing and Dagana involves smaller facilities and services. Many of the project works are in urban areas that are already developed or under development, which presents challenges for land cuts and construction. Meetings and field visits for this assignment focused on the water treatment plant at Megoipang and the urban development in Changbangdu, as they represented the range of components within the project. According to project staff, the project components in Thimphu are Category A for environmental impact management and all the rest are Category B. However, the compliance checklists noted that all project components are Category C.

The MoWHS is overburdened with the various project components and has only one environmental officer, in the Policy and Planning Division, who must address all environmental management aspects of the various ADB and World Bank projects. The perception is that the government is understaffed, due to the current zero-growth policy. The environmental officer is responsible for issuing MoWHS environmental clearances and undertaking follow-up field visits This officer has visited the water treatment plant at Megoipang, but not the other Thimphu sites. The officer has not had an opportunity to view the project's environmental and

[18] ADB is providing financing of $24.6 million for the project, and an additional $6.15 million is from the Government of Bhutan.

social impact assessment and does not contribute to the ADB reporting. Given this situation, two companies have been hired to act as project management consultants and design and supervision consultants. The design and supervision consultants handle the environmental management aspects, based on an environmental safeguard review checklist prepared by the project management consultant environmental engineer in December 2012 after the ADB loan review mission. No environmental safeguard training has been provided to ministry staff and consultants. As with other projects, most of the specialist environmental inputs are front-loaded, going into the drafting of the EMP and getting the required project approvals. Less effort is given to ongoing monitoring and follow-up.

With too few environmental staff and a lack of training, the ministry is trying to catch up with the environmental management tasks. The use of consultants means that the ministry does not develop its own environmental management expertise, and a lack of time to visit project sites can result in slow compliance and resolution of issues. There is a perception that the construction contractors and the municipal staff of the implementing agencies need environmental safeguard training, especially on how to implement all the requirements in the EMP. They also tend not to have any real affinity for the content and requirements of the EMP because they did not make any contributions. It is made clear, however, that all contractors must follow the NEC standards, which are explicit in the contracts.

Most of the project contractors come from India and Nepal, but have undertaken projects in Bhutan before. They seem to understand the environmental issues common to most projects, such as soil management, but there is nevertheless some variability in how the EMP requirements are implemented. The village head (in the *gewog*) is involved in project design and approvals, and must give consent. However, it appears that they are not fully informed of specific environmental management requirements, and therefore do not have much of a role in community monitoring of project activities. At Changbangdu, for example, the residents that were consulted did not see the project development plan. The local people are happy with the developments brought about by the project, consequently putting up with any environmental issues, at least over the short term.

The PMU acknowledges that the NEC is quite strict, and the required environmental clearances contain restrictive actions; these are passed on to the contractors in their contracts The issue remains as to whether or not the EMP requirements are built into the contract. Considering that the EMP is part of the bid documents, it may simply be provided as a compliance document. In the long term, actual environmental compliance becomes the responsibility of the project management or the design and supervision consultant, to whom contractors depend on heavily for guidance and compliance to environmental requirements and monitoring. The project's environmental management documents are not very organized and accessible, and a certain amount of supposition is necessary in understanding the record of environmental safeguard implementation.

Discussions and available project documentation indicate that the project EMP has been updated to reflect detailed design, and this version is included in the bidding documents. The updated EMP is also disclosed to people who might be affected by the project work sites. The two compliance checklists examined indicate that all project components are in full compliance with EMP requirements, but this is focused mostly on the paper trail, rather than site inspections. Air and water quality are not being monitored during construction, so the conclusions must be based on visual inspections. There have also been no public complaints regarding environmental issues and therefore there have never been any issues to resolve. One of the weaknesses of the environmental safeguard compliance checklist is that its format does not encourage thoughtful and critical assessment of field conditions. The November 2012 and May 2013 reports examined were therefore almost identical.

The NEC has never instituted a work stoppage due to infractions of the EMP, which either reflects full compliance of all contractors, or inability to monitor and stay on top of all infractions and required follow-up.[19] It is clear from discussions with project staff that environmental issues are mostly associated with forests and the requirement for forest clearances

[19] Comments from the environmental officer at the MoWHS and observed ongoing soil instability and gully erosion at some sites suggest that an inability to stay on top of infractions is the more likely reason.

(which are often delayed). Project staff also pointed to problems of uncontrolled development in their project areas, as private developers anticipate the new city infrastructure. Infrastructure activities in private lands have brought about different environmental impacts, i.e., sedimentation, making it more difficult to monitor and implement environmental mitigation measures, i.e., sediment control measures. The project staff indicated that the NEC is concerned with the big environmental issues, such as forest clearance. For the smaller issues, such as soil management, these fall within the domain of the municipalities. There appears to be a high tolerance of soil stability and erosion issues, judging from the various work sites visited

The municipalities have an environmental division, but it was difficult to gauge their expertise and competence from the meetings. With regard to the contractors, some feel that site environmental management measures are a waste of money, especially if they are not specifically budgeted for. Measures such as dust management, which requires a water truck, and material management on site, as well as worker camp enhanced features, are seen to take both time and money, and are resisted at some sites.

Actual site conditions reveal most about the degree of awareness of environmental issues and the effectiveness of approaches to deal with them. In general, work sequencing tended to be poor, with materials spread around the site and slope stabilization in many cases left to the end of the construction phase, rather than identified and addressed near the beginning. Soil management and erosion prevention are the most obvious issues, and reflect the steep gradients and congested nature of some sites (Figures 4–12). While there is an effort to use sediments on site to create roads or terraced work areas, there is also a tendency to fill local gullies with sediments, which then require suitable drainage works. Many of the sites that were examined had issues with loose sediments spilling off site, lack of retaining walls, and gully erosion. These problems were especially evident at Changbangdu, where there is very little space for stockpiling sediments (Figures 13–15). It has been suggested that some mechanism to handle loose soil from several work sites is needed for this and other projects. Such a mechanism would involve trading between soil suppliers and those who need it. Although MoWHS staff mentioned this as a solution to the recurring soil stability issues, it has yet to be picked up as a government or municipal initiative.

At the water treatment plant site in Chamgang, surface water needs to be collected and channeled to a perimeter drain, and slopes urgently need to be stabilized with retaining walls and vegetation; however, the work sequence has blocked access to the slopes that need attention. The worker camp on site also needs some attention. Issues at the camp include the need for better water management as the water supply tap has no valve, better solid waste management to avoid waste being dumped below the camp, and improvement of surface drainage. There have also been ongoing issues with the pit latrines filling up and not being replaced. Site fencing has been left to the end of the project. Material management at the site could be improved; waste materials have been dumped at the back of the site near the perimeter. The use of personal protection equipment by site workers was observed to be inconsistent. Finally, the site electricity supply is not fenced off.

The road, sewerage, and water development at Changbangdu (Figures 13–15) has some additional problems because the area is already inhabited. The main access road is almost impassable due to loose soil and gully erosion, and some residents have complained of construction noise. Dust has also been an issue at times.

In conclusion, the environmental management documentation for this project was patchy, making it difficult to determine the development and implementation of the EMP. Environmental safeguard compliance reporting has tended to be pro forma and does not vary much from one period to the next. The reports convey little information on site conditions, but the overall impression they give is that there are few if any environmental issues, especially in urban areas that are already quite developed, and EMP compliance is quite high, except with regard to conditions in the worker camps.

The actual situation at the work sites presents a different scenario, with the soil stability, drainage, and erosion issues evident. This reflects both a lack of prioritization for such issues and the common problem of ineffective work sequencing. This is mainly because there is an

Figure 4: Water Supply Scheme for the Babesa Area Southwest of Thimphu within the Urban Infrastructure Project

Water treatment plant under construction near source.

Figure 5: Exposed Slopes at the Water Treatment Plant Site, with Temporary Drainage Ditches in Chamgang

Figure 6: Dumping of Excavated Soils and Rocks and Fencing in Chamgang

(a) Excavated soils and rocks dumped downslope toward creek perimeter; (b) fence only just being installed 17 months after project start, precluding the work needed to stabilize the western perimeter of the site.

Figure 7: Site Drainage Issues around Structure Footings in Chamgang

Figure 8: Localized Issues with Construction Debris in Chamgang

Figure 9: Unstable Cut Slope behind Retaining Wall in Chamgang

The cut slope behind the retaining wall is failing and needs to be stabilized, but the wall and the fence preclude any site works; as a result, the slope will fail into the retaining wall and possibly overtop it.

Figure 10: Conditions at the Worker Camp in Chamgang

(a) The electrical power supply for the camp is not fenced off; (b) the camp is located on the lower end of the work site and receives most site drainage.

Figure 11: Septic Tank and Camp Water Supply in Chamgang

(a) Septic tank; (b) tap has no valve, so water is constantly running; (c) this creates a significant wet area near the camp.

Figure 12: Failure of the Road near the Water Treatment Plant Site in Chamgang

acceptance that slope instability is a given in Bhutan, and the resequencing of slope work to ensure early slope protection may be seen by contractors as time-consuming and expensive. One solution to this problem is for the PIU and the contractor to jointly troubleshoot all work site issues and clearly define the site-specific technical approaches and work sequences to ensure that all issues are properly anticipated and addressed. There will, nevertheless, be an ongoing conflict between getting the construction work done quickly and cost-efficiently and going more slowly to allow proper implementation of environmental safeguards. Whatever is decided in the way of technical approaches and work sequences, these must be clearly documented and monitored on a daily and weekly basis.

Where there is resistance to implementation of traditional environmental safeguard measures, such as using sprinkler trucks, there is scope for more innovation in work site

Figure 13: Road Infrastructure and Water Supply Work as Part of the Changbangdu Local Area Plan

Figure 14: The Main Issues Are Significant Amounts of Loose Exposed Sediments and Challenging Site Drainage on a Very Steep Slope in Changbangdu

Figure 15: Gully Erosion and Incipient Slope Failure in Some Locations in Changbangdu

management, such as reexamining soil management, dust management, and worker camp design.

More targeted training in environmental safeguard design, implementation, and monitoring is needed at all levels—government staff, consultants, contractors, municipal officials, and communities. This training needs to consider the whole sequence of EMP development, site-specific mitigation measures, roles, and more effective accountability (monitoring and related documentation). While there is some local resistance to including municipal officials in such training, the proximity of municipal

officials to the projects should be seen as an opportunity to engage them in more effective site monitoring. Various training modes were discussed, including study exchanges both in Bhutan and with other countries.

Effective implementation of environmental safeguards will require more time and funds, so it is important estimate the incremental costs of undertaking specific measures, and then budget accordingly. Simply making the EMP a condition of contract is not sufficient. Currently, contractors are resisting some measures because of the perceived cost and the time taken to implement them. This may need more study to clarify the costs and benefits.

c. Road Network Project II, Bhutan

The project is being financed by ADB and implemented by the Department of Roads within the Ministry of Works and Human Settlement (MoWHS). It involves upgrading and constructing 202 km of roads in southern Bhutan (Table 5). Because some sections are adjacent to high biodiversity areas, the project is Category A and has been subjected to an EIA and the required public consultations. The project was approved in January 2010 and construction works began in September 2011. The Manitar–Raidak road section upgrading—one of seven contractor packages—was examined during the field visit. This section is located near the project office at Gedu.

The project has a very clear organization for implementation, including environmental management responsibilities (Figure 16). Environmental safeguard responsibilities lie within the Environmental Management Unit in the Department of Roads, within the project management office,[20] and within the construction project management (the contractors), with oversight coming from NEC and the *dzongkhag* offices. The *dzongkhag* offices do not have specific budgets for these activities, and may therefore be constrained by their own small operational budgets. It was evident from discussions and the field visit that these entities have a clearer sense of their roles, a more solid understanding of the issues, and a greater awareness of the document base and paper trail for environmental safeguard implementation than the other projects examined in Bhutan.

The project has been very clear about the obligations of contractors with regard to environmental safeguards, and all possible elements—especially worker safety—are captured in the bid documents and therefore are appended as covenants in the individual contracts. Provision is made for the contractor to budget for specific

Table 5: Roadway Segments under the National Roads Project II

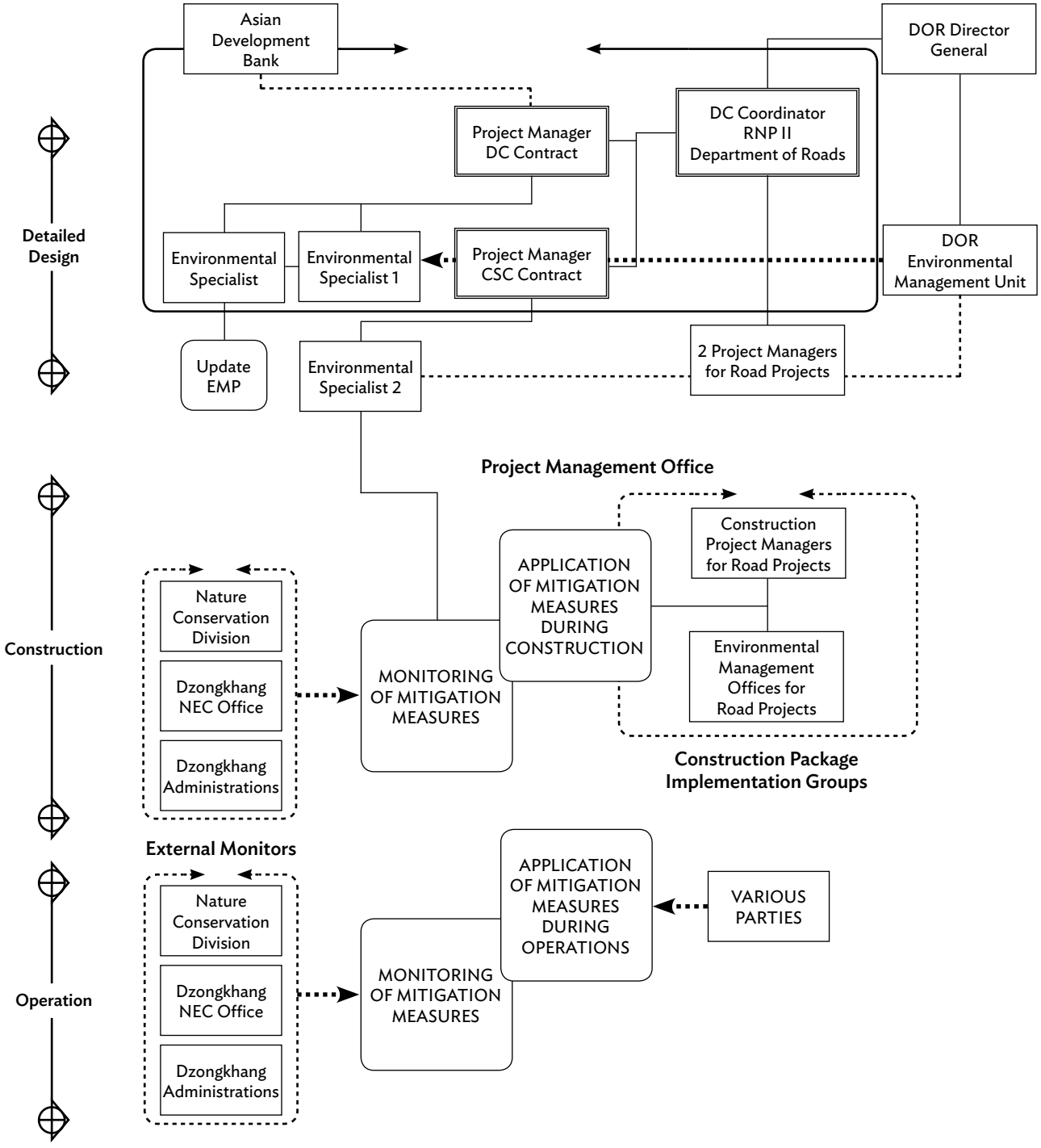
Segment Name	Length (km)	Type	Activity	Dzongkhag
Manitar–Raidak	37	National	Upgrade	Chukkha
Raidak–Lhamoizingkha	25	National	New	Dagana
Tsebar–Mikuri	62	National	New	Pemagatshel
Panbang–Nganglam	30	National	New	Zhemgang, Pemagatshel
	25	National	Upgrade	Pemagatshel
Samdrupcholing–Samrang	23	National	New	Samdrup–Jongkhar
	202	**Total**		
	140	Total National		
	62	Total Feeder		
	62	**Total Upgrade**		
	140	**Total New**		

km = kilometer.

Source: Government of Bhutan, Ministry of Works and Human Settlement. 2012. Road Network Project II. Environment Report March 2012. Thimphu.

[20] Three environment specialists are shared between the design consultant and the construction supervision consultants, with levels of effort ranging from 5 to 9 months over the construction period.

Figure 16: Organization Chart for Road Network Project II



Source: Government of Bhutan, Ministry of Works and Human Settlement. 2012. Road Network Project II. Environment Report March 2012. Thimphu.

environmental management measures, which is very positive. Furthermore, all environmental clearances, which also state the conditions of clearance, are posted at the work site project management offices. Discussions with the Department of Roads and the contractors reflected a good understanding of environmental safeguard obligations and specific technical requirements. Training has been provided to the department's staff, but only on environmentally friendly road construction. The project has some interesting innovations to address wildlife concerns; for example, building steel conduit tunnels under the highway in the southern central area to accommodate elephant crossings. These have not been installed yet, and are untested, although they have been used effectively in India.

Before the start of construction works, all contractors are asked to submit the EMP. This is updated monthly with site-specific details, based on the status of implementation. An EMP implementation sheet helps contract supervisors monitor the progress of implementation of their EMP. The updated EMPs are periodically cross-checked and verified by the environment specialist, working for the contractor-supervising consultants (CSCs) in the project management office and submitted to the project manager. These reports are intended to identify issues and lead to resolution with accountability; they also inform the reports that go to ADB twice per year. The contractor's environmental management officer is on-site all the time. The project manager from the Department of Roads visits all seven sections of the road works twice per month, so there is another level of environmental supervision, although the project manager is mainly concerned with the implementation status of the construction works.

As with other projects, the monthly contractor reports tend to repeat themselves, and there is always a risk that the box ticking discourages critical analysis of actual problems (this was evident in some of the reports examined, lacking specific details). Some reports contain photographs (which is positive), but then these are repeated in later reports, so the features and actions at specific times are not evident at all. There is also reference to an independent environmental monitoring specialist carrying out environmental monitoring and reporting (this remains obscure). Little is done in the way of actual air, noise, and water quality monitoring; the reports indicate some monitoring for air quality, but no monitoring of noise (most sites are not located near human settlements). According to the reports, there have been no public complaints about environmental issues; only some ongoing concerns about local infrastructure damage (which have now been addressed).

Although the NEC can visit at any time without notice to conduct spot checks, staff from the district office have only been to the project site once, to verify conditions to allow renewal of the annual clearance. ADB interventions have been minimal, referring only to the need for more signage for wildlife and to address water safety issues, which is lacking in project reports. The project management monitoring of the contractors indicated only a few infractions, including burning of garbage in the work zone, taking boulders from river (which persists because of the lack of a suitable quarry), improper dust management, partial use of personal protection equipment, and suboptimal conditions in worker camps. The reports suggest slow implementation of the required mitigation measures. Table 6 provides the latest summary (August 2013) for compliance with the required EMPs. Compliance rates are quite high, except for two sections. One of these—the Manitar–Raidak section—only involves road upgrading. However, the Manitar–Raidak section has only 10 compliance requirements—fewer than the other sections—four of which are partially addressed and one of which has not been addressed.

Environmentally friendly road construction methods are prominent in this project, given its focus on road construction and upgrading, and the project documents give quite a lot of detail on the proposed methodologies. They refer to various bioengineering applications, including slope benching, flow routing, flow dispersal for sheet runoff, fabric or straw mulch, seeding, planting of grass or tree seedlings, and brush barriers. Several sites along the Manitar–Raidak section had been bioengineered, with planting of at least two species (a shrub, *tatopati*; and a small tree, *asharaj* [Figure 21]). These were generally successful after 2–3 months, but there was also evidence of new slope failure near the road bed, underlining the importance of continuous monitoring and maintenance of the bioengineered sites.

Table 6: Summary of Environmental Management Plan Implementation by Road Segment

Road Segment Name	Total No. of Mitigation Measures Prescribed	Compliance Performance				% Compliance ex-Not* Applicable
		Yes	Partial	No	Not Applicable	
FR01: Tsebar–Mikuri	56	49	0	1	6	98
NH01: Manitar–Raidak	46	36	5	2	3	84
NH02: Raidak–Lhamoizingkha	21	16	1	1	3	89
NH03 and NH04: Manitar–Raidak	31	5	4	1	21	50
NH05: Samdrupcholing–Samrang	26	11	0	4	11	73
Total	**180**	**117**	**10**	**9**	**44**	86
% of Total	100	65	6	5	24	

* Mitigation measures that are not applicable to the specific road segment have been excluded from this calculation.

Source: Government of Bhutan, Ministry of Works and Human Settlement. 2012. Road Network Project II. Environment Report March 2012. Thimphu.

The site visit clarified the environmental safeguard challenges along the Manitar–Raidak section (Figures 17–24). In general, it appeared that a lot of attention had been given to cross-road drainage, slope stabilization (gabion retainer walls), and bioengineering. Most of the sites reflected good work sequencing that prevented loose sediments from going down slope and knocking over shrubs and trees. However, in several locations with almost vertical slopes above and below the road bed, nothing could be done to prevent rock slips. It was clear that there had been a concerted effort to keep loose sediments on the road bed, despite the very narrow work area for heavy construction equipment. A key challenge at most work sites is access to the low points in the adjacent forest where retaining walls need to be constructed. Most of these sites are not accessible to heavy equipment, and as a result a lot of manual labor is required. A few retaining walls in the downslope areas that were observed had loose sediments from gully erosion areas spilling over them.

The site visited is often under cloud cover, and dusty conditions are not observed frequently. Nevertheless, a water tank truck is used in the active work areas. There are three worker camps along the Manitar–Raidak section. They are reasonably sound, except for one that has an overflowing latrine, poor site drainage, and solid waste that is discarded downslope. Some of these

Figure 17: Proper Signages for Project Identification and Worker Safety in Manitar–Raidak Section

Figure 18: Cross-Road Drainage and Retaining Walls Task-Sequenced to Reduce Road and Slope Failure Risks in Manitar–Raidak Section

Figure 19: Road Debris Incursion into Squatter Areas in Manitar–Raidak Section

Figure 20: Loss of Sediments and Vegetation Downslope in Manitar–Raidak Section

(a)–(d) Loss of sediments downslope is inevitable at some locations where gradients approach 70°–80°.

(e) and (f) Loss of vegetation due to sediment loss downslope.

Figure 21: Slope Stabilization Progress and Monitoring Needs in Manitar–Raidak Section

L-R, top-bottom: (a)–(c) Slop stabilization has been started, with two species; (d) and (e) some sites need more frequent monitoring and maintenance, as slope failure has started.

Figure 22: Environmental Clearances and Compliance in Manitar–Raidak Section

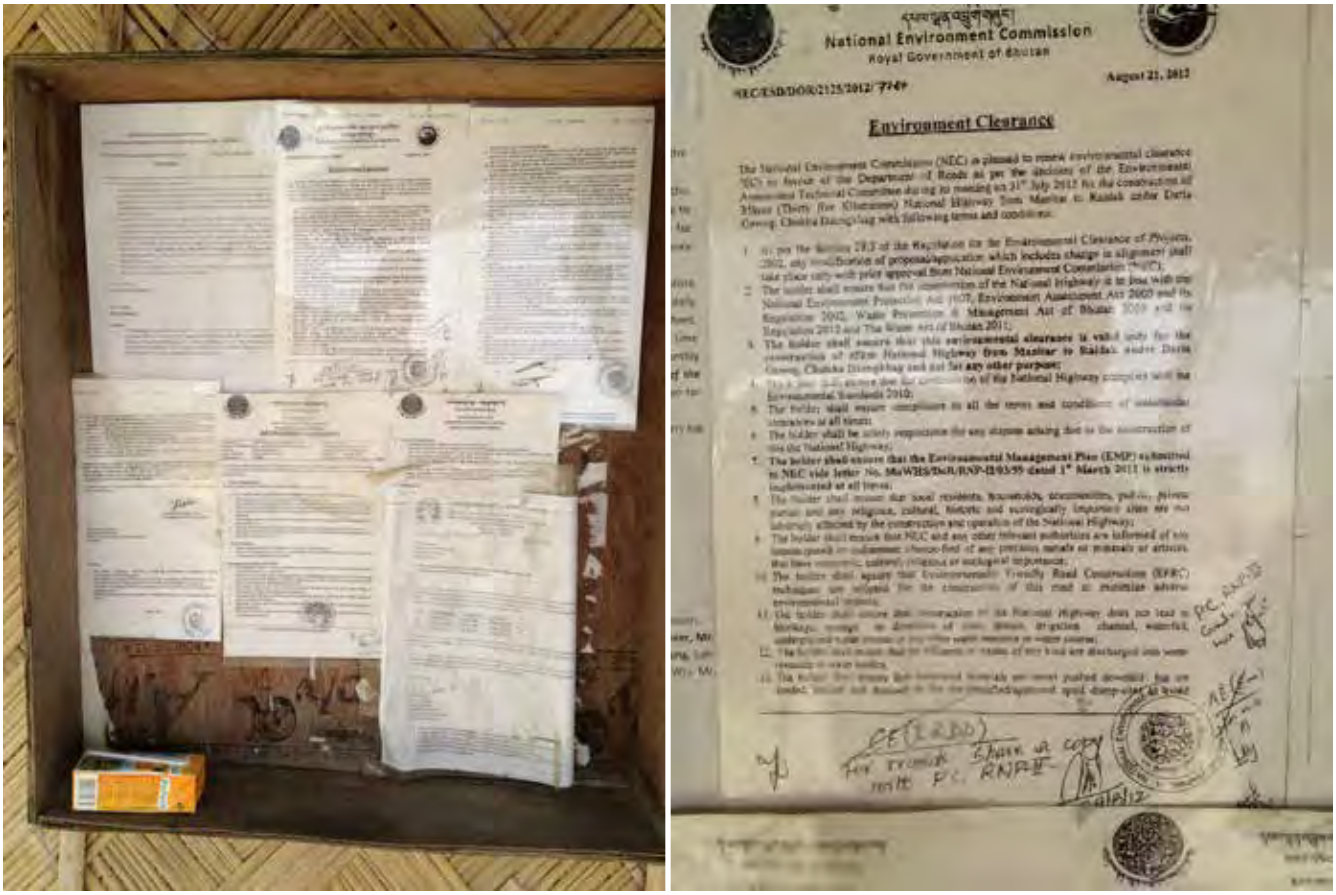


Figure 23: Issues Related to Fuel Storage and Dust in Manitar–Raidak Section

(a) Fuel is stored in a covered area, but without a bund to capture leakage; (b) the crusher plant is in a stable area and there are few issues with dust, due to frequent cloud cover and rain.

Figure 24: Worker Camp Conditions in Manitar–Raidak Section

Clockwise from top left: (a)–(b) Worker camp conditions are suboptimal; (c) garbage is dumped downslope; and (d) the outhouse is poorly maintained.

problems are not being addressed very quickly. Despite a requirement for bund containment of potential fuel spills, the fuel depot at the contractor camp had no such facility.

In conclusion, the project is quite well organized for implementation of environmental safeguards and well documented. There is a good level of awareness of potential issues and appropriate technical approaches from the project management office down to the contractor level. Contract covenants are clear about the EMP requirements, and the contractor has had the opportunity to budget for specific safeguard measures. The few lingering issues include ongoing slope instability in some areas, the lack of monitoring and follow-up of bioengineered sites, fuel storage shortcomings, and suboptimal worker camp conditions. The degree of EMP compliance varies between contractors, possibly reflecting both the capabilities and diligence of the contractors and the site conditions. The checklist-type monthly compliance reporting required of the contractors is an issue, as the format does not encourage much actual narrative of site activities, conditions, and remedial measures, and it is clear that the previous report is used as a template for the subsequent report. This also encourages misposting of information, and limits the scope for critical analysis and documentation of actual compliance status. Some additional thinking is needed on the format of these routine EMP compliance reports to ensure that they convey the necessary information to project management.

The high incidence of bioengineering is impressive. However, most of the guidance used for bioengineering in Bhutan is based on experience in Nepal. There is still a need and scope for country-based research on the most appropriate species and planting and maintenance methods for land cuts in Bhutan. For example, some of the very steep rock slopes might be amenable to planting with low ground-cover vegetation, such as ground creepers with lateral propagation, rather than vertical shrubs and trees. Research on the applicability and suitability of local vegetation should be initiated.

Bioengineered sites need frequent monitoring and immediate remedial action if any slope failure is evident. There is a tendency to focus on planting and then ignore follow-up. Compliance monitoring sometimes records the fact that sites have been bioengineered, reflecting contract requirements, but does not mention the condition of the sites and residual needs. It would also be very informative to examine bioengineered sites several years after planting to ascertain the effectiveness of specific species and planting densities and methodologies. It is also apparent that more training on bioengineering should be provided to contractors. The scope of the training could be broadened after additional research has been done.

There is very little monitoring of environmental safeguard implementation by the government or independent entities. This almost certainly reflects lack of funding for third-party monitoring, and the ongoing perception that most of the environmental management effort should go into the design of the EMP and the project approval process, as is common in most projects in South Asia. Local communities appear to have little interest in the project and are generally passive about environmental issues. With the road itself seen as a major benefit, there is a high level of acceptance of transient issues, except for disturbance of community services, such as water supply and irrigation canals.

d. Bangalore Metro Rail Transit System Project, India

The project has been in operation for planning since early 2000, and in construction from mid-2000. Phase 1 consists of a north–south lateral line and an east–west lateral line, meeting at Majestic—a total of 42.3 km of track. It includes 33 above-ground stations and 7 underground stations, all of which are at the junction of the north–south and east–west lines. Phase 1 is 72% complete, but only part of the east branch is fully operational. Phase 2 is in the planning and financing phase. It will consist of another north–south lateral line and extensions of lines at the periphery.

Environmental management documents (the environmental impact assessment [EIA] and environmental monitoring reports) have been prepared, but are not available on the project website, so there is no clear public accountability for environmental management decisions. Monthly reports are prepared for air quality, dust, and noise at work sites. Contractors are responsible for health, safety, and environmental issues, rather than the BMRC per se. BMRC staff who were available during the field visits (engineers and the financial director) did not perceive any significant environmental issues with the Phase 1 project, because it is being constructed in urban rights-of-way, most of which are on existing roads, and does not impinge on any protected areas or waterways. They are more aware of and concerned about social issues.

The project does not have a formal structure for environmental monitoring. It is handled by an engineer, who has many other duties. It was noted that this person seemed unfamiliar with some of the on-site activities; for instance, it seemed that he had not visited the slurry management plant at Majestic before. The prevailing perception is that most of the environmental issues relate to worker safety, rather than site conditions. The lack of continuity of BMRC staff due to frequent turnover seems to have disrupted the corporate memory regarding project environmental management.

Apart from clearing debris and structures along the alignment, and vegetation where needed, most of the environmental issues relate to sediment removal, especially the 1 million cubic meters (m^3) of material from the tunneling operations. Two companies are tunneling, one using a dry cutting technique and the other using a wet slurry-recovery technique with separation and grading of residual sediments (clay, sand, and gravel). Some of this is reused or sold (especially the rock and gravel); the remaining material from both contractors is

disposed of in the old MS Palya granite quarry in Jalahalli, in northwest Bangalore.

The KR Road station construction was inspected (Figure 25). This confined work space is jammed between offices and residences on one side and a school park on the other, presenting challenges for site management. Health, safety, and environment billboards were observed at the main site office, and most workers were using personal protection equipment. Some accident statistical data and case study notices were also evident.

The following negative environmental impacts were observed at this site:

- Easy public access to the site, especially from the school park, endangering public safety
- Traffic congestion, and no traffic controls, including where heavy equipment from the site integrated with normal city traffic
- No signs for the public indicating work areas and potential hazards
- Poor water management on the site, with a large, open groundwater supply, and wet areas scattered throughout the site
- Construction debris and materials scattered throughout the site

The following positive environmental aspects were observed at the site:

- Compressed gas cylinders and other site hazards kept in covered, secure areas
- Tree canopy all along the track alignment entering the station and at the station itself retained

Overall, this station, if representative, suggests that the stations themselves are not creating any significant environmental issues or hazards. This mostly reflects the nature of the work and the sites. It is not clear if the contractors had been trained in site environmental safeguards. However, safety practices seem to have been addressed, as the basic site safety measures were in place and evident. This may also reflect a response to observations from previous ADB monitoring visits, when some issues were raised.

The work at the Majestic tunneling site raises more significant environmental issues and concerns (Figure 26). The site has a large footprint, and accommodates the tunneling work of two contractors using different techniques. While the site is fenced and access is controlled, there are no adequate sediment controls at the site exit points or elsewhere.

Figure 25: KR Road Station under Construction

Cramped work area and easy public access, open groundwater supply, and tree canopy maintained at station level.

Figure 26: Majestic Tunnel Work Area and Slurry Plant

L–R: (a) Intersection of north–south and east–west lines; (b) massive surface excavation and tunneling; (c) slurry plant, sediment separation, and trucking off-site (to MS Palya); (d) no sediment controls at site perimeter.

Uncovered sediment piles were everywhere, and dust was a problem during the site visit. Wheel washing, while accommodated with road grids, is not done. Sediments are therefore tracked into the city streets for a considerable distance. There is also no evident drainage system on the site. Although the site was quite flat, and most residual water would stay on site or enter the tunnels, there was natural drainage off the access road into the adjacent street, which carries sediments into the city drain system.

Many wells have been mapped and/or encountered during the tunneling process, and these have been plugged and replaced in consultation with the owners. Noise controls are not evident, but the background city traffic noise is an issue, in any case. Air quality monitoring (for dust) is done, and water sprinkling was mentioned as a dust control measure.

At peak operations, up to 500 trucks per day take sediments to the dump site at MS Palya (Figure 27). This is meant to be restricted to 10 p.m.–6 a.m. The old quarry, which covers more than 10 hectares and includes a 15-meter-deep lake, has now been almost completely filled. There is a small pond left in the northwest corner of the site where the public can still access dumped

Figure 27: Tunnel Sediment Disposal Area in Old Quarry Pond in Jalahalli, MS Palya

The facility mostly looks like a dumpsite. Apart from the soil dumped in the area, no drainage, no sediment controls and no perimeter fencing is visible.

construction waste. Most of the site has been filled haphazardly with piles of mixed materials (sand, gravel, and rock chips) that protrude about 3 meters above the surrounding land. This requires grading. There is no site drainage system, but the site drains naturally to the residual pond in the northwest corner of the site. While the dump site is fenced, there is inadequate fencing at the site entrance, and dust can blow across the road and into the adjacent properties. Although no complaints have been received, no complaint record system was observed. Sediment is being tracked out onto the road and away from the site for a distance of about 200–300 meters.

The dumped sediments are not being tested for heavy metals or hydrocarbons, but they are expected to be undisturbed and uncontaminated because they come from the tunnels below the worked urban sediment layers. However, the natural geology is not known, so testing should be done to confirm sediment quality, as dumping of disturbed sediments can lead to leaching, especially of trace metals.

Trucks frequenting the site are not covered. The sediments are often damp and should not be moved from the trucks during transit through the city. However, sediments from dry tunneling may be drier and more

easily fall from the trucks during transit. When the dumping is finished, the site will be managed by the municipality and will be graded and may be turned into a park and revegetated, although there are very few specific details on this plan.

A laborer camp housing 600 workers, mostly from Assam and West Bengal, was also visited. This land is leased and is fenced and has site access controls. There were few environmental issues at this site, as soakaways have been provided for kitchen wastewater (Figure 28) and building peripheral drainage, although this is not very well covered. Soakaways are also in place for the toilets and washing area. These are cleaned out, as was observed during the site visit. The toilets are appropriately placed at the downgrade (lowest elevation) part of the camp, well away from the sleeping areas. There were some minor drainage issues near the buildings, including damp areas and standing water, and there were piles of dirt and debris near the buildings. Powder had been applied to all the drains on the morning of the site visit to control mosquitos, but mosquitos were still evident. Sleeping rooms are quite crowded, with 6–8 workers per room, some sleeping on the floors. The structures are quite sound, but the conditions are marginal, given the high density of workers. Rats and mice were seen in the kitchen and sleeping areas. Garbage disposal may not be adequate. There is no separation of waste, except plastic bottles, but it is regularly taken to the city dump. No large piles of waste were seen. There was mention of considering biogas production from kitchen waste in the future. Site water is from a deep tube well, which, at more than 120 meters deep, is not likely to be cross-contaminated from the soakaways in the near term.

Figure 28: Soakaway Pit for Kitchen Wastewater at Worker Camp in Sahakaranagar

Camp perimeter is entirely fenced and secured, but there are issues with mosquitoes due to poor site drainage and ponding.

Options were discussed for renewable energy at the stations, but they were rather vague. Some consideration will be given to installing solar panels on the roofs of the stations, but there was surprisingly little detail for such a good idea.

In conclusion, there appear to be no serious environmental issues associated with the BMRC operations. There is good scope for site operation and maintenance (O&M) manuals that address environmental safeguards in detail, and training for both the environmental officers and the contractors, based on detailed manuals, would be beneficial. The contract covenants and monitoring and reporting procedures need to be further examined. There is probably scope for spelling these out more clearly, and setting up better procedures for their implementation and compliance checking. Most of the lapses that were seen at the work sites appeared to reflect lack of contractor interest and perhaps lack of diligence on the part of the company in pressing for better site management. Given the apparent acceptance of noise, dust, and site drainage in an already compromised urban context, it seems that people care little about the increments from the project, which may explain the absence of public complaints. Sediment sampling to determine the nature of spoil before disposal in areas that may contaminate groundwater needs to be worked into routine operations.

e. Karnataka Urban Infrastructure Development and Finance Corporation, India

The primary objective of the North Karnataka Urban Sector Investment Program Tranche 3 (NKUSIP) is to improve the quality of urban infrastructure and provide better services, focusing on environmental sanitation improvements, which have positive environmental and social benefits. The specific objectives of the project are to (i) improve the environmental conditions of the towns and cities in North Karnataka, Karnataka State; (ii) reduce poverty in low-income areas through greater access to

basic urban services; and (iii) improve the service delivery capacities of North Karnataka urban local bodies (ULBs) through institutional development, by undertaking projects on sustainability principles.

The Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC) is well organized for environmental safeguard definition and implementation, with an environmental officer in the Bangalore office, who was, until recently, supported by another environmental officer in the regional office in Hubli. The environmental officer was trained in safeguard implementation by ADB for 2 days in Hyderabad in May 2013. The KUIDFC website contains all the initial environmental examinations (IEEs) and environmental monitoring reports for the projects in the first three tranches of the NKUSIP, so there is a very good level of documentation, and this is all accessible and transparent. A summary IEE for each project is provided in the local language, which is very positive.

The NKUSIP focuses on smaller municipal infrastructure projects, mostly sewage treatment plants, water treatment and supply, and storm water drainage. Tranche 4, which is in the pipeline, will expand this work further. The focus of the case study was on the documentation for the first three tranches of the NKUSIP and a field visit to the Chamarajanagar project site sewage treatment plant (STP), water supply, and storm water drainage system.

The IEE for Chamarajanagar is detailed, with all the technical specifications of the project, site layout, and evidence of procedures for collecting information for the IEE in place. In general, it correctly anticipates the environmental impacts of the project, and has a detailed environmental management plan (EMP). However, it is apparent that the EMP has been clipped from another similar IEE as there is incorrect reference to some locations and mitigation measures and other inconsistencies.

Environmental monitoring is reported on a monthly basis by the environmental officer, and is based on daily environmental monitoring by the contractor using a checklist for 18 simple visual parameters, as well as monthly site visits by either Bangalore or Hubli KUIDFC staff. The contractors have been supported in the implementation of the daily environmental monitoring by occasional training provided by the KUIDFC. Photographs are now included in the monthly reports, which is very helpful. Deficiencies and gaps in environmental safeguard compliance are noted in the reports, and follow-up decisions are documented. All of this is positive for tracking the environmental safeguard implementation process.

In general, the major environmental, social, and health benefits of the projects supported by the KUIDFC in the NKUSIP are expected to far outweigh the minor and temporary negative impacts of construction activity. Proper project siting and good construction practices strongly influence environmental management. The IEE for Chamarajanagar indicates that sound engineering principles have been applied to the project, but some additional positive environmental options have not been considered, such as use of solar power at the water tank and STP sites, and the redirecting of polished wastewater from the STP to a constructed wetland in a nearby lake (to maintain water storage and groundwater recharge near the municipality). In general, project design for these kinds of projects tends to be quite conservative, and does not fully consider more innovative technologies and approaches.

The 18 parameters that are to be tracked on a daily basis by the contractor are as follows:

- Hazard and direction boards are evident
- Safety measures for excavated earth
- Watering for dust management
- Signboard with project details
- Blocked drains are cleared
- Debris is cleared to avoid obstruction of vehicles and pedestrians
- Trenches are opened and filled in the least possible time
- Proper disposal of debris
- Debris on trucks is covered
- Stockpiles of sand and metals are wetted
- No contamination of groundwater or surface water
- Public is informed of ongoing work
- Construction is not undertaken during the night or early morning
- Access to public and private properties is provided

- Alternative traffic plans are developed
- No people below age 14 are employed
- Workers wear helmets, gloves, and boots
- There is a grievance process for public and business complaints

Almost all of the 18 parameters only address safety issues and risks of public inconvenience, control of dust, drainage, and noise, in very simple terms. It is not clear how a contractor could note and measure the risk of water contamination, especially groundwater. There is no reference to controlling on-site drainage, avoiding clearing vegetation, or revegetating cleared land. The visual system appears to preclude specific measurements of air quality, especially dust, and noise. This probably reflects overall community and worker acceptance of dust and noise at work sites, as these are also issues in urban areas outside work sites, and most people are used to them or at least put up with them.

The monitoring reports include photographs, and the report itself keeps a record of observations and decisions based on them, as well as status of follow-up, which is good practice. Details on training are also included.

Environmental clearances are listed. However, the daily monitoring sheets show little variation of each parameter throughout each month. This suggests that the form is filled out in a routine manner, based on quick assumptions and perhaps not detailed inspection. The NKUSIP notes the generally poor writing skills of contractors, and this is quite hard to address. Currently, the bid documents for the projects do not explicitly address environmental safeguards. If these were included in the Request for Proposal, then bidders would have to acknowledge and address environmental safeguards in clear technical and financial terms.

The project sites in Chamarajanagar were quite benign in terms of environmental impacts. Trenching for sewage pipes (Figure 29), construction of the STP (Figure 30), conditions at the laborer camp (Figure 31), and construction of the water reservoir tank (Figure 32) were observed. Work in public areas was properly marked off. Given that this area has been quite dry, and most sites are essentially flat, there were no observed issues with poor site drainage and transit of sediments to adjacent areas. All sites seemed to be quite stable. Nevertheless, there were no specific sediment controls in place and there

Figure 29: Sewage Pipe Trenching in Town

L–R: (a) No defined surface water drainage system; (b) no specific sediment controls in place; (c) messy sites with construction nmaterials and debris evident throughout.

Figure 30: Construction Work at the Sewage Treatment Plant Site

The site is being fenced off (6 months after construction started); there are no sediment controls or site drainage systems, but the site is quite flat and contained, so any potential issues are not spilling over to adjacent areas. The surrounding area is fully cultivated or vegetated.

Figure 31: Sewage Treatment Plant Site Worker Camp

Only seven workers now live here (the rest have moved into town). Two separate toilets have been recently installed, with a proper soakaway. There are sediment and garbage issues at the site.

were no defined surface water drainage systems at any of the sites.[21] Most sites were messy, with construction materials and debris evident throughout. Very few of the workers practiced safe construction; most did not have helmets, and many had bare feet or flip-flops and sandals. No fuel is allowed to be stored on work sites. The water reservoir tank area has a rough access road with rocks and construction debris, and will need significant rehabilitation and replanting.

In conclusion, it appears that contractors need more guidance, time, and funds to implement effective environmental safeguards, and these measures need to be site-specific and included in contract covenants. Although most of the contractors are small and might find it difficult to engage a dedicated environmental officer, this capacity needs to be developed and made available to such contractors, rather than having the site engineer responsible for environmental safeguards.[22] There is

[21] There were no coverings on sediment piles, although a water sprinkler truck was observed at the STP site, for dust control.

[22] This could be perceived to be in conflict with getting the engineering job done quickly and maintaining the margins of the contractor.

Figure 32: Construction of the Water Tank on the South Side of Chamarajanagar

Construction is on government property. The site and the access road are littered with construction debris and will require substantial rehabilitation and revegetation.

scope for training on the specific technical aspects of site environmental management, especially site drainage and sediment controls, which are usually lacking. There is also scope for training in environmental safeguard monitoring to assess compliance. When this is left to the contractor, it may not be taken seriously. Nevertheless, the KUIDFC has considerable experience in developing environmental safeguard systems, and could be a training resource for future capacity building.

f. Assam Urban Infrastructure Investment Program, India

The Assam Urban Infrastructure Investment Program (AUIIP) Tranche 1 has been in operation for a little over a year, with project management consultants (a joint venture between Tetratech, Poyry, and Vision EIS Consulting) in place to handle the ongoing design and implementation process. Not all the required government counterpart staff have been put in place, including the environmental safeguards officer. One of the project management consultants is handling the implementation of both social and environmental safeguards.

The AUIIP Tranche 1 is involved with three water supply projects in Guwahati, one storm water drainage project in Dibrugarh, and two solid waste management projects in Dibrugarh (Table 7). While most sites have been selected, only two projects are under implementation—the water supply pipelines and water storage reservoirs in Guwahati. Of these, only the Gopal Nagar main water storage reservoir site near Guwahati has site activity under way. This site was visited, along with a potential site for a secondary water reservoir at Kenduguri.

The basic environmental management documents are in place, including the IEE, the EMP, and the semiannual safeguard monitoring report. There is also a good training plan that includes various aspects of site environmental management, but it has not yet been implemented due to lack of appointment of government staff. The documents correctly describe, albeit at a generic level, the technical aspects of the projects, and the possible environmental impacts, as well as environmental safeguards. The specific sites were not known when the IEE was prepared; therefore, little is documented of the site-specific environmental issues. In all the documents reviewed, there are no photographs, and there is only one map showing current proposed sites (in the recent progress report). It was noted that site-specific EMPs will now have to be prepared once the project is under implementation; this will be the task of the project management safeguards consultant and the contractors. These will require careful site investigations and photographic documentation.

The IEE and EMP details were appended to the bid documents, but contractors were not required to explicitly address environmental safeguard requirements with proposed technical approaches and budgets. Therefore, this is something that can be pursued, as noted at other project sites in India, to raise the level of technical competence and competitiveness of contractors on environmental safeguards. It is

Table 7: Projects in Assam Urban Infrastructure Investment Program Tranche 1

Subproject			Major Stages		
Code	Activities	Town	Design	Procurement	Implementation
Water Supply (WS)					
WS01	Construction of transmission clear water supply pipe lines and allied works at Guwahati	Guwahati		✓	
WS02	Construction of storage reservoirs of various capacities at six locations at Guwahati, approach road, and allied works	Guwahati			✓
WS03	Design, build, and operation (DBO) of intake works, raw water rising man, WPT, clear water pumping station and associated works at Guwahati	Guwahati	✓		
Storm Water Drainage (DR)					
DR01	Construction of DTP drain, box culvert, and allied works from chainage 0 to 9,500 m at Dibrugarh	Dibrugarh		✓	
Solid Waste Management (SW)					
SW01	Design, build, and operation (DBO) of 100 MT processing plant and 60 MT sanitary land fill site and allied works at Dibrugarh	Dibrugarh	✓		
SW02	Procurement of equipment for primary, secondary collection and transportation vehicles for Municipal Solid Waste Management at Dibrugarh	Dibrugarh	✓		

DTP = Dibrugarh Town Protection, m = meter, MT = million tons, WPT = water pressure testing.

Source: Government of Assam, Guwahati Development Department and Urban Development Department. 2013. *Assam Urban Infrastructure Investment Program (AUIIP) Quarterly Progress Report for Quarter Ending March 2013*. Report No. 4. New Delhi.

expected that the contractors will require training in site management and environmental monitoring (air, water, and noise). This is supposed to be provided by the project management safeguards consultant, and presumably the government-appointed safeguards officer when that person comes on board.

Several of the sites will require trees to be cut. The ownership of some trees is still being determined. In general, the Department of Forests determines the value of trees and is then responsible, with funds provided by the project, for reforestation in degraded forest areas, as in other locations in India. There is also provision for payment of compensation for privately owned trees that cannot be replaced on the owner's property.

The two sites visited reflected the challenges that will be encountered in constructing access roads and water reservoir tanks. Both sites are located in steep hill areas that are densely vegetated; served by steep, narrow dirt roads; and with small houses in all flat and hillside areas (Figures 33 and 34). There was extensive evidence of gullying and sediment erosion, which will require careful application of drainage and sediment control measures. Given the very early stage of construction (which is so far limited to well-drilling, construction of worker toilets, and soil testing at Gopal Nagar), there is no evidence that site-specific EMPs are being implemented, and there are no site-specific plans as yet.

The second site visited (Kenduguri) was even more challenging than Gopal Nagar. It has a very narrow dirt track with houses on either side, which is unlikely to be passable by truck. Several areas are already seriously eroded. Both sites that were visited will need effective slope stabilization during construction, and then significant revegetation for the long-term slope stabilization.

Figure 33: Gopal Nagar Reservoir Site near Guwahati

L–R clockwise: (a) Signage for site details (facing the wrong way); (b) access road (some tree clearing will be required, as well as widening and regrading); (c) newly drilled tubewell for water supply for the construction site; (d) newly constructed toilets for the laborer camp.

The project is at too early a stage to assess the implementation of environmental safeguards. However, it is clear that site-specific environmental management plans are still required, given that each of the sites is unique and presents significant challenges, especially regarding vegetation clearance, and sediment and erosion controls. Environmental safeguards will then have to be developed and reviewed with each of the contractors, and very specific environmental covenants included in their contracts. The bid documents could be more explicit about the need for contractors to define site-specific environmental safeguards in their proposals, and to provide technical approaches, as well as budgets. These need to reflect additional materials and labor-time required to implement environmental safeguards so that contractors' profit margins are not affected; otherwise, contractors will continue to avoid the time and expense of safeguard implementation. Contractors and project staff will almost certainly require technical training in site environmental management, especially in sediment and erosion control, as the staff who accompanied the team on the site visits were unfamiliar with these aspects. As noted in other locations, there is interest in work exchanges that embed staff in an agency or institution in India or elsewhere, to expose project staff to best practices on environmental safeguard implementation.

Figure 34: Proposed Kenduguri Water Reservoir Site near Guwahati

L-R: (a) Very steep and narrow access road, already suffering from gully erosion due to rain; (b) location of the water tank, which will require relocation of houses. Truck access to this site is extremely unlikely.

g. Bihar State Highways II Project, India

The Bihar State Road Development Corporation (BSRDC), Government of Bihar, is the executing agency responsible for the ADB-supported Bihar State Highways I Project (of which seven of nine subprojects have been completed to date) and is also now implementing Bihar State Highways Project II (consisting of four subprojects). The project started in 2009, and most have been involved from the beginning. This is reflected in the very good understanding of environmental management principles evident during discussions. The purpose of the projects is to strengthen and rehabilitate the deteriorated state roads and to upgrade some newly declared state roads to provide reliable road transport services in the state.

State highway 78—part of Bihar State Highways II Project—is located south of Patna. The camp at Dumari and the highway section near Mustafapur village were examined to assess the structure, implementation, and effectiveness of environmental safeguards. Meetings were held and site visits conducted with the BSRDC project management unit (PMU), the project implementation unit (PIU) and the contractor for state highway 78, and the construction supervision consultants for all the current state highway subprojects.

The executing agency is well structured and has a dedicated safeguards function. Under the chief general manager is a set of general managers for projects. Below this management level is a deputy general manager responsible for environmental and social safeguards, who works with two managers and secretarial staff. The deputy general manager addresses all safeguard implementation and monitoring needs, and submits quarterly reports to ADB based on monthly reports from the contractors. The PIUs implement the highway subprojects. The technical manager of the PIU is responsible for managing environmental concerns, including implementing the EMP. Field officers and the supervision consultants monitor the implementation of the EMP. Pollution monitoring is conducted by the contractor, using monitoring agencies approved by the deputy general manager. Once the highway subprojects become operational, the PMU assumes responsibility for environmental monitoring, coordinate with the Pollution Control Board, and another approved monitoring agency.

The EMP is included in the construction contract, and site engineers agree to comply with and are expected to be familiar with all environmental management requirements. For example, the contractor for state highway 78 has prepared health, safety, and environment guidelines that reflect EMP requirements, and has posted the required information posters at the main camp for state highway 78. The BSRDC has undertaken training sessions on environmental safeguards, including for their own managers as well as the supervision consultants.[23] In general, based on the meetings and site visits, there is a clear hierarchy of environmental management responsibilities and all management levels appear to have a good level of comprehension of the environmental issues and their responsibilities.

State highway 78 is managed by the Biharsharif PIU. The highway is a greenfield project about 96 km long with four lanes and a 60-meter right-of-way. It is managed in two sections: Bihta–Daniyawan (Patna District), and Chandi–Sermera (Nalanda District). The Bihta–Daniyawan section was visited. The first hardtop was completed in January 2013, and at the time of the visit, the final hardtop and the preparation and final grading of the highway shoulder were still to be done.

As pointed out by the executing agency staff, highway projects involve clearing of trees, for which forestry clearances are required; the need to establish appropriate drainage; disturbance of traffic and the need for diversions; generation of noise and dust; and for both workers and local communities, safety issues. According to the executing agency, the bureaucracy for obtaining forest clearances is the biggest hurdle. It took more than 2 years to obtain the forest clearances for state highway 90. The executing agency tries to select routes that avoid national or protected forest, and it claims that only 6 km of the highway routes pass through such forest. The main reason that vulnerable forests can be avoided is that most rights-of-way are along existing roads. There are some exceptions, such as, state highway 78, which is a greenfield road. There are no highways adjacent to wetlands. Bihar State requires seven trees to be planted to replace each lost tree. The project aims for 10 trees to be replanted for each one lost. However, the Department of Forests receives the money from the Bihar State Highways II Project and, because there is no follow-up by the project, it is not clear how they select the replanting area, and whether trees are actually planted. (In some areas in South Asia, the Department of Forests keeps the funds and trees are not necessarily planted.)

Water crossings have involved bridges over three large rivers and many small streams. These are all addressed with current engineering specifications, and the number of culverts on existing highways has been increased to one every 100 meters. Culverts have also been improved to address cross-river drainage; however, the section of highway examined did not have any cross-road drainage within a 200-meter distance, perhaps because it was near a seasonal river that receives drainage from most of the adjacent area. It was noted that major riverbed works were in progress at the bridge near Mustafapur village, involving a lot of bulldozing of sediments. This presumably would have been completed before the main monsoon rains, as this area would not be workable during heavy rains, and most of the sediments would be mobilized.

There is an issue with disposal of construction debris, mostly the old road surface materials. If it not reused or recycled in the new highway construction, which is encouraged, construction debris is supposed to go to designated dumpsites that do not have to be approved by the Department of Environment. Some contractors have disposed of construction waste improperly. This may reflect a desire to keep trucking costs to a minimum, and is a problem that is evident in other areas in South Asia. Dust management involves a sprinkler truck operating three times a day. Dust is sampled during each quarter and reported accordingly. Noise was not specifically mentioned, although the executing agency says that they will use noise barriers in populated areas.

Some environmental issues were observed along the initial section of state highway 78 near Mustafapur village (Figure 35). For example, due to rain between January and May, there are several areas where gully erosion has started on the shoulder adjacent to the preliminary hardtop. This reflects the lack of protection of the shoulder, which, although naturally revegetated in

[23] Safeguards orientation was in July 2013, EMP training in October 2010 and September 2011, and training on ADB environmental procedures in March 2010. A 2-day ADB training course was held in September 2013.

Figure 35: Environmental Conditions at One Section of State Highway 78, near Mustafapur Village

(a) Exposed dirt road access to the paved section is susceptible to rain and sediment runoff; (b) river works under the new bridge are to be completed before the monsoon, to avoid a mud slurry in the finishing-off phase; (c) evidence of gully erosion caused by rain; work on this section was completed 4 months previously and is now a risk of slumping of highway edges; (d) vehicle access to villages on the other side of the highway is visible, but pedestrian access near the shops is very difficult.

patches, is not solid enough or covered in any grass sod or other form of protection to prevent erosion. There is a risk that the road surface will slump in places. The shoulder is supposed to be regraded and protected when the final hardtop is applied. It is apparent that the EMP for specific sections of the state highway is generic for all highways, and that section-by-section analysis of site-specific issues is not undertaken. (This may be done for engineering purposes, but is not necessarily undertaken for environmental management.) For example, pedestrian access across the highway section near Mustafapur village has not been provided, but could have been designed for. As a result, there is frequent use of the highway shoulder to cross the highway, and this is already suffering from compaction and slumping.

The camps for the state highway project present different environmental challenges that are not all being addressed adequately despite previous environmental safeguard compliance missions (Figure 36). For example, at Dumari Camp (for state highway 78), the following problems were observed: there are issues with standing water in at least two areas, which creates problems with mosquitoes; the fuel truck is not kept in a bunded area, so there is contamination of sediments during fuel transfers; the very large piles of sand and gravel are not and cannot be covered due to their size; empty chemical drums are not isolated or labeled, and some have fallen over; and solid waste is managed but is not separated. Some of these observations—regarding water on the site, dust management, and secondary containment of fuel, fugitive emissions from equipment, drinking water quality, and traffic management—had been made before, but fixes are not yet in place.

The environmental safeguard monitoring reports on these issues, and the dates of responses are included, indicating good accountability. However, the locations for monitoring samples are not accurately recorded, and some samples may be biased by the proximity of samples to areas with high values of some parameters (e.g., close to noisy engines), or located too far away from

Figure 36: Environmental Conditions at the Dumari Camp

(a) Unlabeled barrels are not stored properly and some have fallen over; (b) the fuel truck is not kept in a lined or bunded area to prevent spills and contamination of soil and groundwater; (c) there is standing water in a few locations in the camp; and all soil and gravel piles are too large to be covered to prevent dust dispersion.

the equipment that should be monitored.[24] On the other hand, there are good practices evident at the Dumari camp. Workers have personal protection equipment, and there are various signs and manuals pertaining to worker health and safety, although these are in English, not Hindi. The site is sprayed for mosquitoes, but the problem would be reduced if the standing water were eliminated. Septic tanks are maintained, and there is a siren and a marked assembly area indicating provision for emergency situations. As a result of previous safeguard compliance missions, trucks with sand and gravel, and construction debris, are now covered. Despite some lapses in environmental management at the camps, there have been no work stoppages by the Department of Environment.[25] The supervising consultants are managing effectively and forcing the contractors to undertake the requisite monitoring.

In conclusion, there is a relatively high degree of awareness by the BSRDC, PIU, supervising consultant, and contractor of the need for environmental safeguards, supported with pertinent training and documentation. The environmental issues associated with highways are quite specific and well-known in the industry. Most have been correctly identified in this project, but there are still lapses in both the construction sequencing of the highway (e.g., leaving it exposed to erosion for relatively long periods) and management of hazardous materials, dust, and standing water at the camps even though some of these issues have been flagged, suggesting a level of acceptance of environmental problems. As with other projects, this may simply reflect the contractor's desire to save time and money.

The BSRDC also suggests that the contractors and supervising consultants need more training, and that their monitoring and reporting procedures are not as good as they should be. The monitoring procedures need to be more rigorous and include details on the location and time of sample collection, which greatly influence the monitoring results. There is a sense that government agencies involved in monitoring and compliance checks may be lax because ADB projects have their own, relatively rigorous, environmental safeguard protocols, which are assumed to be as good as or possibly better than national and state environmental management standards. There is little government response to the monitoring data from the project. Opportunities for harmonization of Indian and ADB environmental safeguard practices should be explored and practices elevated to the highest possible level within the existing systems, rather than deferring to one system or the other.

There is a need for an ADB safeguard training database for India to help ensure that training courses target the most appropriate people for the subject matter and to

[24] It appears that most of the air and water quality monitoring data are within permissible limits, and there have been no public complaints.

[25] However, it has been noted by BSRDC and some local people that they are not very strong on compliance monitoring, being underresourced. The exact number of site visits by the Department of Environment is unclear.

allow tracking of the impact of training. The observations from this project suggest that training modalities could be expanded and diversified. For example, scenario development and mock exercises, with trainees from the executing agency, PIU, supervising consultants, contractors, government staff, and nongovernment organizations (NGOs) together would be beneficial, exposing participants to different perspectives and creating an opportunity to learn from each other's experiences. Specific ADB infrastructure projects could be the focus of this training, illustrating technical specifications of safeguard measures for various stages of a project, monitoring procedures, and reporting. These can also provide good material for audit exercises, involving analysis and observation of project environmental safeguards.

Finally, the state highways project is quite conservative in its design, and opportunities for use of renewable energy, such as solar power for highway lighting, have not been considered. It is understood that the BSRDC will consider how to incorporate renewable energy approaches in future highway design.

h. Nepal Electricity Authority

Several meetings were held with the Nepal Electricity Authority (NEA) concerning transmission lines, which is their main responsibility (they are not involved in power generation). By and large, transmission lines are considered relatively benign projects in terms of environmental issues, because they involve very small footprints with a linear, narrow right-of-way and are guided by specific criteria (Table 8). Any environmental issues are mostly confined to the design and construction phases. There are few environmental concerns during the operation phase, as only occasional clearing of the right-of-way is required, and cultivation within the right-of-way is usually allowed. The NEA cited two ongoing ADB-supported transmission line operations: the Dumre–Damauli 132-kilovolt (kV) transmission line in Tanahu, west of Kathmandu, and the Chapali 132 kV line near Kathmandu. Both are subprojects of the Electricity Transmission Expansion and Supply Improvement Project and are in the preconstruction stage. As there is little in the way of environmental safeguards to see at these sites, site visits were not undertaken.

Table 8: Nepal Electricity Authority Criteria for Transmission Line Alignment and Principles to Reduce Cutting of Trees

Selection Criteria
The proposed transmission line alignment was selected to satisfy the following grounds: • Provide the shortest possible and, as far as possible, straight route • Minimize passes through forest areas • Minimize the number of structure crossings • Avoid built-up, swampy and unstable areas • Provide easy access for construction and maintenance works • Avoid settlements and land development areas as far as possible • Minimize adverse impacts on the environment • Proximity to road
Minimizing the Forest Clearance
"Selective felling of trees in right of way of the transmission line will be carried out to minimize the adverse impacts of the transmission line. Similarly, the trees in the gully and valley will be avoided from felling as far as possible. In such area, it is proposed that the minimum forest areas that are needed for the laying and stringing of conductors will only be cleared and remaining trees of the right of way will be kept intact. This will not only limit the forest loss but also indirectly contribute to conserve the biodiversity of the project area. ROW vegetation clearance will be carried out manually and herbicides will not be used at all in any case. Angle Towers and Suspension Towers will be placed ridge to ridge to avoid the forest clearance between the two towers."—page 29

Note: Transmission line alignment is the main factor in reducing future environmental mitigation requirements.

Source: Government of Nepal, Nepal Electricity Authority. 2010. *Initial Environmental Examination. Dumre – Damauli 132 Kv Transmission Line Project*. Kathmandu, Nepal.

Nepal does not require an IEE for transmission lines, but ADB does, so these have been prepared for the Dumre–Damauli and Chapali transmission line projects. The Environmental and Social Studies Department (ESSD) of the NEA handles IEE and environmental impact assessment (EIA) work, development of the EMP, as well as environmental safeguard compliance checks and impact monitoring, but only when asked by the NEA. For a transmission line project, the ESSD sets up an environmental management unit (EMU). (In the case of the Dumre–Damauli transmission line, the first task will be to confirm the baseline situation; two or three people will be on-site day-to-day.) The EMU typically consists of several staff from the ESSD, as well as locally engaged staff. The EMU then undertakes regular environmental compliance checks and monitoring, and

reports accordingly to the NEA. The EMP is part of the contract, but there is a clear sense that contractors are not well-informed about environmental safeguards and, while there are few environmental issues associated with transmission line installation, there are frequent lapses in implementation of environmental safeguards. Although issues are pointed out, there is little follow-up with the contractors, and some issues are not addressed quickly.

Monitoring by the EMU does not appear to follow a rigorous protocol, being mostly visual, related to tree cutting and evidence of poaching by workers; and there is little need for air, water, and noise monitoring, given the small moving footprint of transmission line installation. Environmental safeguard compliance records are to be maintained daily, and these will be submitted to the NEA for ongoing quarterly reporting to ADB.

The lack of specific environmental safeguard implementation discussion with the contractors is a gap that is further compounded by the perception that transmission lines are not of much concern environmentally. Small projects tend to be ignored altogether. There may not be adequate dissemination of EMP documents. While ESSD staff seem to know the environmental issues and concerns pertaining to transmission lines quite well, they have received no environmental safeguard training, including from ADB. The Ministry of Science, Technology and Environment (MoSTE) is responsible for environmental management oversight in Nepal, but as transmission lines do not require an IEE, and are considered small projects, the MoSTE is not very interested or engaged. Furthermore, the ministry staff capacity is limited at the district level. If there are environmental infractions, the project manager can stop the project until there is compliance, but this has never been done and some of the environmental infraction reports indicate lingering issues.

In general, environmental safeguards are not very well institutionalized and set within the daily practice of environmental managers, and funding for environmental monitoring activities is inadequate. Regardless of these shortcomings, ADB's Nepal Resident Mission undertakes at least two safeguard compliance checks a year, which act as a "catch-all" for lingering environmental safeguard issues, putting them back on the agenda and clarifying required actions.

Of the few environmental issues associated with installation of transmission lines, most can be addressed by detailed route alignment and design, since the main concern is the location of the right-of-way. Criteria have been established to reduce the chance of environmental impacts. These include avoidance of critical habitat, especially creating habitat fragmentation, and avoidance of forested areas and inhabited areas. For the NEA, the main issue is tree clearing and the requirement for forest clearances, which is protracted and bureaucratic, as in other countries in the region. At the time of discussions, Nepal required that 25 tree seedlings be planted for every tree that is cut. This number was reduced in 2014 (now just two trees to replace each tree cut). Transmission line towers can be appropriately placed to avoid tree cutting; for example, allowing suspension of the lines over gullies, ravines, and rivers at a sufficient height that trees under the lines can remain. In most cases, cultivation within the right-of-way is allowed once the towers have been installed and the cable has been pulled. However, regular clearing of the right-of-way to keep vegetation well clear of the lines may result in some disturbance of cultivated land within the right-of-way. This is a known risk.

The main issues that have been recorded in the past, and which seem to prevail during transmission line installation, include poor conditions in the worker camps.[26] There is a further concern about poaching and use of local wood by workers. Other environmental issues that have been observed have included dumping spoil down a slope; not addressing slope stabilization requirements immediately, which can lead to drainage and erosion problems; and inadequate concern and equipment for worker safety.

Given that most serious issues can be addressed through design and alignment selection, in theory there should be very few environmental issues related to construction of transmission line towers and installation of cable. However, the few environmental issues that are associated with the construction phase appear to be somewhat neglected, even though they should be very

[26] These include inadequate toilets and poor waste management, as well as some records of worker conflicts with local people. Most typical towers require 20–25 workers per tower, and they camp nearby; some may involve up to 60 workers.

manageable and within the competency of the ESSD and contractors. This mostly reflects a lack of concern, rather than a lack of technical know-how. A possible solution is to detail safeguard regulations in construction contracts.

Given this situation, there needs to be an explicit environmental safeguard covenant review session with the ESSD and the contractor before work starts, rather than leaving this process to the NEA and contractor administrators. An environmental management specialist needs to be involved in these discussions. The sessions could be reinforced with a 1-day training session on environmental safeguards with the contractor site managers. This could usefully include visual information on good and bad practices, and a review of how the environmental monitoring protocol will work.

There is a lack of centralized and accessible documentation on environmental safeguards in Nepal. Making these documents available would help inform project proponents about the most appropriate environmental safeguards for different conditions. They could also inform more detailed and intensive training on environmental safeguard design and implementation for government agencies, proponents, contractors, and environmental practitioners in Nepal. Little such training seems to have been done to date.

i. Second Small Towns Water Supply and Sanitation Project, Nepal

ADB is supporting the Second Small Towns Water Supply and Sanitation Project, which is being implemented by the Department of Water Supply and Sewerage, Ministry of Urban Development. It involves 21 secondary towns throughout Nepal. The subproject that was visited was the Baglung Water Supply Project, west of Kathmandu. This subproject was started in January 2012, and was more than half way through its allotted construction time but only about 35% completed at the time of the site visit. It is managed from a project management office in Kathmandu, with support from Integrated Consultants Nepal. Most of the subprojects involve water supply; a few also include sewage treatment plants. The community must fund 50% of the subprojects, giving them a large stake in the design, construction quality, and appropriate environmental and social safeguards.

The project follows all the environmental safeguard requirements of the Environmental Protection Rules in Nepal and those of ADB (it is Category B, and has required an IEE). There is explicit reference to contractors being aware of the EMP and maintaining daily monitoring of their activities with regard to environmental safeguards. This is positive, but field observations indicate that it is not taken up very well, The EMP is included in the bid documents, but the subsequent review and follow-up process is not very clear and in any case may not be effective. Both the IEE and the EMP, while relevant to the project, appear to have been borrowed from other projects, and are not specific to the subproject locations.

The main issue with the institutional setup of the project is the central control in Kathmandu, the remote locations of many of the subprojects, and the deferral of most of the local monitoring to the village development committees (VDCs). The VDCs need support as they are not fully technically competent in subproject design and are unfamiliar with environmental safeguard design and implementation, but they may not be receiving the support they need from the Department of Water Supply and Sewerage (DWSS) in Kathmandu, or from their district offices. The project is very well structured and extremely well documented, with an IEE, an EMP, environmental safeguards defined, and responsibilities for implementation and monitoring very clear. Whether these preparations match reality on the ground has not been checked or followed up by any of the central- or district-level project staff responsible for overall project performance. Most of these observations were inferred from the VDC in Baglung.[27]

According to the VDC, there has been very little engagement of government agencies and project staff with the project in Baglung, and some field observations back this up. The VDC also said that they have not been trained in environmental safeguard design and implementation, and do not know how to ensure that safeguards are in place. The supervising consultant—an engineer who also visited the site during the mission—also seemed to have little awareness of the environmental

[27] The Integrated Consultants Nepal environmental safeguard consultant in Kathmandu was not available for meetings.

safeguard needs and environmental issues evident in some locations.

According to a few people, the design and supervision consultants do not have enough time to involve themselves with environmental safeguard issues. Some training has been provided to staff and consultants, but this has focused mostly on contract management and solid waste management, not design, implementation, and monitoring of environmental safeguards. ADB has undertaken one environmental safeguard mission to the project sites. The Ministry of Science, Technology and Environment—the responsible agency for monitoring environmental safeguard issues—has not yet followed up but is likely to do so.

A key positive feature of the project in Baglung in terms of environmental issues is that it will deliver needed services—clean water—using mostly community or vacant land, and only a very narrow strip of roadway will be required for water service pipe installation. Forest clearance has not been an issue with this subproject, as only 1,500 m^2 of clearance has been required and this was granted. The water treatment plant just outside the town has the largest footprint of the project, and even this is located at the site of a previous plant. As a result, there is a certain level of tolerance for environmental issues and it was felt that the contractors are lax with environmental safeguards. While the pipe laying in the town has been done well, with good resurfacing with asphalt and proper postwork clearing of road drains, there are some issues related to road works coordination (Figure 37). In one location at least, the water project intersected with a road drain project outside the scope of the ADB project. A large amount of soil had been exposed and a gully was forming on one side of the road where it drains down a very steep slope, creating a significant risk of road shoulder failure, especially when the rains start. This reflects a lack of coordination between agencies working in the town—a point noted by the VDC as well.

There are more issues at the water treatment plant site (Figures 38 and 39): (i) the site is not well fenced; (ii) there are slope failures in several locations that are a safety concern for workers; (iii) retaining wall construction is being left late in the process; (iv) construction materials obstruct both the workers and local traffic; and (v) there is standing water in one of the main storage tanks, which creates a possible nuisance with mosquitoes. Although hard hats were issued to all workers and visitors, it was clear that they were not brand new, and most workers did not wear safety boots, despite the presence of a lot of construction materials scattered over a challenging site, few clear walkways, and rickety ladders in some places.

The main environmental or social issue mentioned by the VDC was the conflict over ownership of the source water, which is located about 16 km from the water treatment plant. The community at this location feels that they own the water, and they are seeking compensation in the form of a bridge and other infrastructure, which has prolonged the construction phase. This issue is discussed further in the section on social safeguards.

Figure 37: Water Supply Pipe Installation in Baglung Town

(a) There is minimal disturbance from the small asphalt plant in a vacant lot; (b) filling of pipe trenches has been done well, and the road drains have been cleared after road works; (c) lack of coordination with other road works is a problem, and the cross-road drain is causing slope erosion on the other side of the road.

Figure 38: Temporary Storage of Construction Materials on the Road in Front of the Baglung Water Treatment Plant

The main concern is the dumping of gravel and rebar on the bend in the road.

Figure 39: Environmental and Safety Issues at the Baglung Water Treatment Plant, Located on a Steep Slope

Clockwise from top left: (a) Unmarked slope failure area where workers walk (although it is fenced); (b) materials stored on worker walkway; (c) ungraded roadway on the site with gully erosion evident; (d) exposed soil at the top of the site, just below a tank; (e) lack of a staggered retaining wall at the bottom of the site, a small single retaining wall with the area above overgrown with vegetation; (f) standing water in one of the tanks is a potential mosquito problem and should be continuously drained.

In conclusion, while this project has all the required documentation in place for design, implementation, and monitoring of environmental safeguards, actual implementation is lapsing somewhat. This is because

- very few people have been trained in environmental safeguard applications for areas that are characteristic of the secondary towns;
- the remoteness of many of the subproject locations discourages frequent site monitoring;
- time and money are inadequate for proper diligent monitoring;
- the VDCs are perceived to have the most at stake and therefore assume the main responsibility for environmental safeguard monitoring, without adequate back-up or follow-up, and they are not trained for this role;
- because most of the subprojects are providing significant services for secondary towns and local communities, the negative environmental impacts are played down or, at times, ignored, since most of the subprojects provide significant services for secondary towns and local communities;
- contractors are lax with their environmental safeguard responsibilities, and probably do not want to spend the time and money implementing safeguards, knowing that compliance monitoring is not very rigorous; and
- there is inadequate review of the EMP tasks between the project and the contractors.

The main environmental issues that remain as a result of these lapses include exposed soil, lack of slope stabilization, and incipient gully erosion that is not being arrested. There is also a lack of concern for site and materials organization, which is a safety issue for workers. At the same time, the workers do not seem concerned, so awareness raising is needed, and detailed examination of various slope stabilization methods, including bioengineering, is required.

The people involved in this project at all institutional levels need training in the design and implementation of environmental safeguards. The VDCs, especially, need to acquire much more technical knowledge in the design of environmental safeguards for towns and hilly rural areas so that they are in a credible position to observe and challenge the contractors. Such training needs to be based on graphic material and site visits to observe what works and what does not. The technical training needs to emphasize the proper sequencing of these measures and the importance of implementing them before problems get out of hand rather than leaving them as final tasks in a contractor to-do list. Project contractor discussions concerning the EMP obligations in the contracts need to be more comprehensive and should include the VDCs so that all responsible parties are properly linked and share the same expectations.

j. Rural Reconstruction and Rehabilitation Sector Development Program, Nepal

The ADB-supported Rural Reconstruction and Rehabilitation Sector Development Program (RRRSDP) involves road rehabilitation, bridge construction, and water supply throughout Nepal. The program started in 2008 and is nearing completion. There are five road subprojects in Bhaktapur, just east of Kathmandu, of which two are near completion. Documentation for these two subprojects was examined. One road subproject was visited, and ongoing road and bridge works on the full length of the Chyamasingh–Amaldol–Nala road—slightly less than 6 km—were assessed. As with other rural infrastructure projects in Nepal, road upgrading is seen to bring significant benefits to local communities, and environmental issues associated with construction are tolerated as they are short-term and usually reversible. Local communities are mostly concerned with long-lasting problems, such as poor road design and the dumping of construction waste on their property, rather than transient issues related to noise and dust.

The project is very well documented, with an IEE (ADB Category B), detailed EMP, and clarity of responsibilities for all institutions and levels from the ministry down to the villages. Much of the documentation has been taken from other subproject documents, which tend to get circulated and reused throughout Nepal. Consequently, almost all environmental issues related to roads and bridges, and all possible mitigation measures, are noted but are not necessarily linked to specific locations and work site conditions. This creates challenges for both the local project team and the contractor. As with other rural infrastructure projects in all three countries, a walk-through of the whole alignment to examine all possible issues and remedies is required before construction.

This needs to involve the project, contractor, and local community, so that they all have the same understanding and expectations in relation to environmental safeguards.

The RRRSDP project coordination unit (PCU) is based in the Ministry of Local Development in Lalitpur. An environment specialist under the project director supports all IEE and EMP development in all districts, and visits the field as required to check on environmental safeguard implementation. (He has been to the Nala road subproject a few times.) Field reports from these trips are shared with all concerned parties. ADB's Nepal Resident Mission also has visited from time to time—most recently—and has provided useful inputs—e.g., related to spoil disposal near one of the roads. Within the district office, which is quite involved in subproject implementation, the environmental officer was involved in the development of the IEE, but left when the task was completed. An engineer now handles the environmental safeguard monitoring within the overall engineering oversight provided by the district office. There is a safeguard unit within the district government, covering environmental and social issues and resettlement, but, according to the project staff, it is not effective, mostly because it is not associated with the project per se; staff are not really familiar with the project details, and most are not appropriate for the job and not serious about safeguards.

None of the people involved with environmental management has received technical training in environmental safeguard design and implementation; and while identified environmental issues could be discussed, specific technical solutions were not readily evident (for example, there is a rockfall at the steep road cut near the end of the Nala road). People at the district office have received a 2-week training course in bioengineering (the use of vegetation to prevent slope failure), provided by a local trainer; however, there were several places along the Nala road where bioengineering is required but has not been implemented. The environment specialist from the PCU has provided some awareness raising on environmental management to the district offices. In general, however, district staff and contractors are not very experienced or conscientious. For example, district monitoring forms are not sent to the PCU regularly, so there are lapses in the knowledge of current environmental issues at work sites.

Furthermore, there is little follow-up on environmental issues and fixes required, as noted during missions. The Nala road rockfall, which needs immediate attention, is an example of this.

While environmental monitoring is very clearly prescribed for the road subproject, the actual monitoring protocol was not articulated very clearly by the district office (apparently monthly reports go to the PCU, and these get consolidated into the overall quarterly RRRSDP progress report to ADB). The PCU does not undertake much environmental monitoring, leaving this to the district office. There is a reliance on visual observations, which is good, and photographs are used to document issues. There is no monitoring of air quality, given the transient nature of this issue. Although the EMP is apparently reviewed with the contractor before work starts, there were several references to the contractors being "lazy" when it comes to environmental management tasks (which, like all projects, take a certain amount of time and money). Contractors have a budget for construction waste management, but apparently do not use it most of the time (as a result, local communities complain about materials left at the side of the road or on private property, as in the Nala road subproject). Contractors also do not spend money on personal protection equipment for their workers. Worker safety remains an issue, and local workers are not aware of their needs and rights.

While there are no major environmental issues associated with the construction of the Nala road because it follows the old alignment, there are some that need attention. Most are manageable in the near term, but some are more challenging and relate to the road design and alignment. The most serious is the rockfall near the end of the Nala road. In this area, the slope is too steep for the road, and intensive stabilization is required immediately above and below the road. There is a risk of road surface and shoulder failures where the shoulder is too narrow and steep, and there is evidence that this has already started (Figure 40). This problem may reflect the poor sequencing of road work. It would make sense to build the retaining walls before road grading and paving, especially as the new hardtop creates a fairly high volume of discharge during rains. Some of the drains may be too narrow to handle this, and some are already clogged from the rockfall and need to be cleared immediately. There is also an issue with heavy equipment work in the

Figure 40: Steep Slope and Rockfall on the Nala Road

L–R, top-bottom: (a) and (b) Steep slope cut, which has resulted in rockfall; (c) immediate slope stabilization work is needed, but options are limited given the lack of a road shoulder; (d) and (e) most of the sediments from the road cut have gone downslope into the river and have resulted in loss of some trees and most shrub vegetation, which further accelerates slope erosion; (f) evidence of road drain blockage; (g) appropriate cross-road stream alignment.

river under the bridge, which has created downstream sedimentation that may flush out during the next heavy rains. The lack of barriers and signs at work sites indicates that public safety is an additional concern (Figure 41).

Most other observed environmental issues are fairly innocuous. They involve temporary noise associated with the occasional use of heavy equipment, and dust at work sites, for example, in the village where the local

Figure 41: Realignment of the River under the New Bridge on the Nala Road

L–R, top–bottom: (a) River work has resulted in (b) sedimentation downstream; (c) there are no safety barriers along the abutments of the new bridge, which is a significant risk, especially to all the children playing in the area; (d) community project to complete the road drains has resulted in obstruction of the road and generation of dust.

community was constructing the drains. Movement through these areas tends to be constricted by the materials left along the side of the road, but no one complains because members of the community are undertaking the work. Ultimately, the new road surface will eliminate the dust problem.

In conclusion, there are few environmental issues associated with the construction of this road. Most of the serious issues relate to road alignment and design, and if these are handled properly—especially correctly anticipating slope stabilization and drainage needs—before construction starts, the remaining risks should be acceptable. As with other infrastructure projects, the documentation is thorough, but the implementation of environmental safeguards, monitoring, and checking on the implementation remedies during follow-up all seem to lapse. This may reflect (i) a lack of technical training on environmental safeguards, (ii) knowledge that the compliance monitoring is only a weak form of enforcement, and (iii) an overall lack of concern. The most critical gap appears to be lack of understanding of technical measures and approaches for specific areas, conditions, and situations. The government, consultants, contractors, and local communities require technical training on environmental safeguard needs under all conditions.

Too much reliance is placed on district-level officers and their consultants for effective environmental monitoring and follow-up. They lack the skills and capacity to handle all environmental safeguard tasks, and may not be getting enough support from the PCU and the ministry. Better rationalization of responsibilities and tasks is needed at all levels, and sufficient budgets must be put in place to ensure that all people can do their jobs effectively.

The contractors are required to prepare a site-specific EMP to help ensure that contractors abide by EMP provisions. A walk-through by all parties is then required before construction to examine all possible issues and site-specific remedies, It should relate to the EMP, and the site-specific observations and recommendations should be documented and signed off by all parties. Otherwise, the implementation of environmental safeguards is quite open to interpretation. It is critical that the walk-through identifies the correct sequence of construction activities to preclude future environmental issues. With this kind of preconstruction protocol, it would be possible to have more serious enforcement of contract covenants relating to environmental safeguards, because they would be site-specific and properly defined in technical terms. Finally, public safety at all work sites, especially on roads, needs to be taken more seriously. This involves fencing off hazardous areas and putting up signs to identify the risks.

2. Examination of Social Safeguard Implementation

The case studies were carried out to assess social safeguard implementation, not to critique individual projects. The assessment focused on what is working and what is not working with regard to implementation, as well as examining the ground realities each project faces and the lessons learned from implementing social safeguards. The social safeguard concerns were found to be similar in the selected countries. They mainly relate to policy and legislation constraints, lack of institutional capacity, and effective monitoring. The social safeguards were examined in all but one of the 10 projects—the Bangalore Metro Rail Transit System Project. In this case, the social safeguard process was not sufficiently advanced to serve as a case study.

a Dagachhu Hydropower Development Project, Bhutan

This project was categorized as B for social safeguards. All compensation to the affected people was paid before the project started and there has been no relocation of affected people. Although most of the land required for the Dagachhu Hydropower Project (DHP) is government owned, some land belongs to private individuals, so about 25 households have lost land.

Because this project has no significant impacts, a short resettlement plan was prepared as per ADB guidelines. Land acquisition for the project was done under the Land Act of Bhutan, 2007. The act governs all general land issues and empowers the government to acquire and allot *satshab* (replacement land). Compensation principles and the policy framework for land acquisition are governed by the Guidelines for Land Acquisition and Satshab Allotment, 2005 and the Land Compensation Rate, 1996. Since January 2008, the National Land

Commission has been responsible for looking after all issues pertaining to land, including land acquisition and replacement. In this project, all affected land has been compensated for with replacement land. Before 2008, the Ministry of Agriculture undertook these responsibilities.

A detailed measurement survey was conducted from March to April 2008 to identify the amount of private land to be acquired by the project, including the amount of crops and fruit trees affected by the project. The survey was carried out by the *dzongkhag* authorities in conjunction with Dagachhu Hydroelectric Project Authority (DHPA) staff with the participation of the affected people, who verified the amount of land to be acquired from each of them. Compensation for trees and crops was based on the revised rates by the Property Assessment and Valuation Agency (PAVA).

The Department of Energy in Thimphu is responsible for overall policy guidance, planning, and monitoring of resettlement and rehabilitation (R&R) activities within its projects, while implementation of the resettlement plan is the responsibility of the DHPA. The responsibility includes implementation, monitoring, contingency planning, related programming, and reporting. The resettlement plan states that neither the DHPA nor the Department of Energy have much experience of managing land acquisition or resettlement issues in projects. The DHPA is governed by a board of directors and headed by a general manager. The general manager is assisted by three deputy general managers—one for contracts and two for technical components; 13 engineers are also employed under the DHPA.

The resettlement plan indicates that there are no resettlement specialists, either in the Department of Energy or in the DHPA. However, there are various officers at the *dzongkhag* level, taking care of land acquisition and compensation issues.

A commissioner for resettlement for the project is the Dasho Dzongdag of Dagana *dzongkhag* (the chief administrator of Dagana district). The resettlement activities have been carried out under his direction and guidance. The *dzongkhag* land records officer has been appointed as the *dzongkhag* resettlement officer for this project. The officer's roles and responsibilities include carrying out activities related to land acquisition and helping affected people identify appropriate replacement land.

The Dzongkhag Resettlement Committee is pivotal in the implementation of the resettlement plan. It carries out consultation among the affected households and communities regarding resettlement, prepares the final inventory, values assets, and identifies and allocates replacement land. The actual acquisition, land transfer, and compensation are carried out under the committee's supervision at the *dzongkhag* level. *Gups* (heads) of the concerned *gewogs* (group of villages) may also be involved in negotiations with individuals and families. DHPA officials and the social safeguard consultant have conducted a series of meetings and consultations with affected people and *dzongkhag* administration officials. Local residents and affected people are fully aware of the potential project impacts and benefits, particularly those related to land acquisition, compensation, and resettlement.

Monitoring and evaluation of the implementation of the resettlement plan has been done by the Internal Monitoring Committee that was established within the DHPA and by an independent monitoring consultant. The social issues are being regularly monitored and no major adverse issues have been raised. The Dagachhu Hydro Power Corporation has appointed the assistant environment officer as the focal person whom people can approach regarding any issues caused by the project activity. The DHPA will evaluate the performance of the resettlement process 2 years after all resettlement activities have been completed, and evaluate them against the indicators listed in the resettlement plan.

It is suggested that people are trained for social safeguard issues, especially for preparing and implementing resettlement plans. Training could focus on issues concerning principles and procedures of land acquisition, assessment of property value, consultation and participation, payment of compensation, income restoration, and social development activities for poverty reduction.

b. Urban Infrastructure Project, Bhutan

The project implementation unit (PIU) established in Thimphu City Corporation (TCC) manages day-to-

day operations and implements the resettlement plan. The sociologists at the PIU coordinate land acquisition and resettlement activities through the PIU, with support from the project management consultants' safeguard specialist. Implementation and monitoring of the resettlement plan are the responsibility of the sociologists at the PIU, in coordination with the safeguard specialist at the project monitoring committee (PMC). External monitoring and evaluation will be undertaken by an independent agency. Local area representatives or city committee members, who act as liaisons between the affected people and the TCC, will receive the affected people's grievances.

The Government of Bhutan has very stringent laws and regulations for environmental and social safeguards. The officers are well aware of the safeguard requirements, including those of ADB. The resettlement plan documents were prepared by the social safeguard specialist, according to the ADB Safeguard Policy Statement (SPS).

The TCC carries out internal monitoring under the guidance of the sociologist at the PIU. Monthly progress reports are prepared and submitted to the project management unit (PMU). The achievements are reported against the targets fixed in the task charts and reasons for shortfalls, if any, are noted. Monitoring is done regularly.

Land has been acquired based on the concept of land pooling or donation. The process is governed by the Land Pooling Rules of the Kingdom of Bhutan 2009, Cash Compensation Rates 2008/2009 for cash crops, fruit trees, and annual crops, and the resettlement framework agreed with ADB.

Land pooling was initiated for the project through extensive consultations with the affected people. Although successful, the process took almost 3 years, as the government had agreed with ADB on 100% land pooling. During implementation, it was realized that this was difficult to achieve because it is very time-consuming. Identification of absentee landowners caused a lot of delays. Others did not want to contribute because they had already built the infrastructure that the project was offering. The executing agency suggested that a solution to this problem should be worked out for future projects involving land pooling.

Land pooling aims to ensure that no person is adversely impacted. The project must also ensure that the interests of vulnerable people are taken into consideration. The project has followed the ADB requirement, and in the resettlement plan has a detailed entitlement matrix dealing separately with the land pooling component, impacts, and entitlements.

Land pooling is guided by the following principles:

(i) All affected people—titled and nontitled—will be fully informed and consulted on land pooling sites, compensation, entitlements, and resettlement assistance.
(ii) Lack of formal legal land title is not a bar for compensation and assistance.
(iii) Contributions will be confirmed by a written record signed by the landowner and the TCC, and verified by the Office of the Attorney General, with copies retained by the three parties.
(iv) Agreement from 100% of landowners is required for land pooling.
(v) Land pooling[28] contributions will be kept at similar percentages to the extent possible and will not exceed 30%.
(vi) Plot owners contributing to land pooling will directly benefit from roads and drainage, and water supply and sewerage connections. During consultation, landowners will be informed by the government of the project's implementation schedule and the expected time frame for the delivery of benefits.
(vii) Land pooling will not severely affect living standards of affected people and land pooling will (a) exclude traditional villages, (b) exclude

[28] The concept of land readjustment is to assemble small rural land parcels into a large land parcel, provide it with infrastructure in a planned manner and return the reconstituted land to the owners, after deducting the cost of the provision of infrastructure and public spaces by the sale of some of serviced land. A land readjustment scheme is typically initiated by the municipal or the national government designating an area which is about to be converted from agricultural to urban land use. Provision of infrastructure and services is financed by the sale of some of the plots within the area, often for commercial activities. The original landowners are provided plots within the reshaped area which, although smaller in size, now have access to infrastructure and services (Urbepedia 2015).

land with residential and commercial structures, and (c) minimize shifts in land plot owned. Only land rendered inefficient from the perspective of agriculture or for future structures will be considered for pooling. Landowner agreement will be required before moving the location of plots, and the reallocated plot will be within the same local area plan.

(viii) The government will not allocate surplus land from the local area to finance land pooling.

(ix) The government, to the extent possible, will include government land to reduce land pooling contributions.

(x) All nontitled affected people whose income or livelihood is affected are entitled to receive assistance to restore income and livelihood at preproject standards, and all vulnerable affected people are entitled to receive additional assistance.

(xi) An adequate grievance redress mechanism will be in place and affected people will have recourse with regard to nondelivery of benefits.

Plot owners who do not agree to the land pooling will not be eligible to participate and benefit from it. The government will acquire the land of the nonagreeing plot owner and provide the affected person with (i) alternative land with equivalent characteristics if the affected land is the only land owned by the affected person, or (ii) compensation at market rates in accordance with PAVA rates and ADB's confirmation that the rate applied under PAVA equates to replacement value. The affected person will also be compensated for all assets on the land acquired at replacement value.

All efforts were undertaken to consult with the absentee plot owners. Measures included (i) public awareness campaigns to draw the attention of plot owners, (ii) public announcement via media, (iii) a notice board in each area indicating the names of plot owners who have not been accessible to contact, and (iv) frequent public consultation. Where, despite all these efforts, plot owners cannot be reached, they will be classified as absentee plot owners. Land and assets will be valued using the same methodology as for nonagreeing households and the compensation due to the absentee and nonagreeing plot owners will be placed in an escrow account. Information will be publicly announced annually through the media to allow the absentee plot owner to agree to land pooling or be compensated.

Consultations were also held with the affected people. The people said that there were many consultations held with them to explain the land pooling concept. They said that they had agreed to the land pooling for the project because the infrastructure that will be built will benefit them. To the extent possible, land pooling contributions have been kept at a similar level for all the affected people and will not exceed 30%. The people who were consulted stated that all had contributed up to 27.5% of their total landholdings.

Land pooling was found to be an innovative concept that could be used as a good practice in other countries. There were no major social safeguard implementation issues in this project, other than obtaining the approval of all the land losers under land pooling. The problem with land pooling is that it is very time-consuming because of the need to identify the many absentee landowners. This led to a lot of delays. Regular consultations were held throughout the project period to explain land pooling and address the grievances. This can be seen as a good practice.

With regard to training, officers at various levels have received training, for example, on gender issues; however, there has been no training specifically for social safeguards. Given that Bhutan has a small community of social consultants working in the safeguards area and none of the consultants who have worked on the resettlement plans and implementation have received any specific social safeguard training, it will be relevant to train them. It was also suggested that the municipality committee members should be trained. It suggested that there is no need to train community members, because awareness about the project can be created in other ways.

c. Road Network Project II, Bhutan

The Road Network Project II involves upgrading and construction of 202 km of roads—four national roads and one feeder road. The Department of Roads, within the Ministry of Works and Human Settlement (MoWHS) is implementing this project. The upgrading of the road section between Manitar and Raidak was examined as a case study.

As with the other projects in Bhutan, there was a very high level of awareness about ADB social safeguard policy requirements. During the discussion, it was explained that at the policy level the main legislation for land acquisition and resettlement in Bhutan is the Land Act, 1979 (amended in 2007), which regulates ownership, sales, and the compensation payable by the government when land is acquired. The Land Act of Bhutan, 2007 provides the acquisition mechanism for land and other property falling under the eminent domain whenever required for a public purpose. The rates of compensation are reviewed by the government periodically. The results of the most recent reviews were described in the Land Compensation Rate, 2009; the Cash Compensation Rates, 2008/2009 for Cash Crops/Fruit Trees/Annual Crops; and the Bhutan Scheduled Rates, 2009 for the affected structures. If the family losing land becomes marginalized, the government will compensate that family with the cost of the land in cash and as well substitute land free of cost. In the case of landless people, the government can allot land free of cost.

The project uses land-for-land compensation as much as possible, as stipulated in the Land Act, 1979 (amended in 2007). In addition, and where necessary or opted by those affected, the project has provided other options in kind or cash, as well as other support mechanisms to those deemed as vulnerable or at risk. Replacement land of equal or better productive value is offered as an option to those losing substantial amounts of land (i.e., 10% of their holdings or more), or where loss of land threatens the economic viability of the household.

For land-for-land, the location of replacement land to be allotted in project areas shall be in the order of preference of the same village, *gewog*, and *dzongkhag* (clause 155, Land Act of Bhutan, 2007). The government will provide the landowner with replacement land commensurate with the value of the land acquired. The land under acquisition will be taken over only after registering the replacement land in the name of the affected landowner or when the cash compensation in replacement cost has been made to the landowners (clause 158, Land Act of Bhutan, 2007). Cash compensation in replacement cost would be based on the cash compensation rates issued in 2008–2009. The difference between the compensation determined by the *dzongkhag* and the replacement cost determined by the block development committees is paid as a productive asset grant in kind by the project.[29] If the compensation and replacement cost are not acceptable to the affected people, they would have recourse to a grievance redress mechanism (GRM) as defined in the project resettlement plan.

Because the rural land market in Bhutan is not well developed, compensation rates cannot be determined from replacement cost at the open market value. The project therefore compensates at replacement cost as defined by the most recent land compensation rate approved by the National Assembly in 2009. During the social safeguard assessment study, the land compensation rate was found to be quite reasonable in the rural areas. However, if there is any difference between this rate and those assessed by block development committees, the difference is paid as a productive asset grant in kind by the project.

The project does not address nontitleholders. It avoids impacting such households, because the ADB safeguard policy stipulates that they must be assisted, while this is not permissible by law in Bhutan. However, the presence of nontitleholders is rarely an issue in Bhutan, due to the low population density; nevertheless, it was observed in this road project (Figure 42).

Various institutions are involved in implementing the resettlement plan at different levels and stages of the project. The primary institutions involved in implementation are the Department of Roads, the *dzongkhag* (district administration) or *dungkhag* (subdistrict administration), the project management office (PMO), the surveyors, the grievance redress committees (GRCs), and the supervision consultants.

A PMO headed by a project coordinator was established, responsible for the overall execution of the project. The *dzongkhag* or *dungkhag* is responsible for implementing the resettlement and rehabilitation activities. The Department of Roads ensures availability of a budget for land acquisition. The department requests the concerned *dzongkhag* or *dungkhag* official to appoint a group of trained surveyors assisted by district engineer, district

[29] The block development committees comprise the chair elected by the villagers, elderly people, and representatives of affected people.

Figure 42: Nontitleholder Structures at Deorali Village Avoided by Road Network Project

agriculture office, and the land registration office and the *dzongkhag* survey officer to conduct a cadastral survey to support resettlement activities.

The PMO, supported by the concerned *dzongkhag* and *dungkhag* officials, monitors land acquisition and resettlement activities. A social consultant conducts external monitoring. Monitoring reports are submitted to both the project authorities and ADB on a biannual basis. However, since this is a Category B project, with no significant impacts, the monitoring indicators are related to payment of compensation only. Discussions at all levels indicated that no compensation that goes beyond the laws can be given.

Monitoring is done by the PMO. The contractor-supervising consultant (CSC) has a social safeguard specialist who is engaged on an intermittent basis because all the resettlement activities have been completed and there are no major issues to be monitored. Discussions with the PMO revealed that there was some attempt to make a livelihood plan for women in the project area, but it never gained traction. It could be further taken up in the gender action plan. Overall, although there has been no specific social safeguard training, there is awareness of the social safeguard requirements among the officers of the PMO and the consultants.

Due to the limited nature of the rural land market in Bhutan, compensation rates cannot be determined at replacement cost at open market value. The project therefore compensates at replacement cost as defined by the most recent Land Compensation Rate, 2009. If there is any difference between the Land Compensation Rate and the rates assessed by block development committees, the difference is paid as a productive asset grant in kind by the project.

In conclusion, Bhutan has developed a very good awareness of safeguard requirements. To further supplement compliance with the ADB SPS, the government has put in place new legislation, such as the Land Pooling Rules of the Kingdom of Bhutan, 2009, to address issues on land acquisition. The process of consultations is very exhaustive, and people are fully aware of project impacts and benefits. All projects

require an environmental and social impact assessment report; thus, there is stringent monitoring of safeguard issues, especially environmental safeguard issues. It was explained that if consultations are held properly and people are fully informed from the beginning of the project, then concepts such as land pooling work well.

d. Karnataka Urban Infrastructure Development and Finance Corporation, India

The Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC) has been implementing ADB-funded projects since 1996, and the North Karnataka Urban Sector Investment Program is the corporation's third ADB-funded operation. The KUIDFC social safeguard systems are in place and it has a well-defined resettlement policy framework based on ADB guidelines.

Land acquisition was processed under the Land Acquisition Act, 1894, and a district-level valuation committee has been set up to determine the replacement cost of land outlined in the entitlement framework. As far as possible, the executing agency tries to locate the subprojects on available government land.

The project covers 25 towns and is implemented by four divisional offices. Six nongovernment organizations (NGOs) are involved in implementing resettlement and rehabilitation (R&R) at the divisional level. All of them report to an apex NGO, based in Hubli-Dharward. A social development officer is appointed in each of the divisional offices to monitor the work of the NGO. The key staff of the divisional NGOs are trained by the apex NGO. The NGO submits quarterly reports to the program management unit (PMU). Internal monitoring is done by the urban local body (ULB).

The good practices of the Road Network Project include a streamlined institutional setup with social safeguard staff in place at all levels, regular capacity development, and good reporting of safeguard practices with documents posted on the project website.

Stakeholder consultations have been an important element in project preparation and identification. Stakeholder participation was ensured through open workshops and consultations with beneficiary groups, NGOs, district and municipal officials, and elected representatives. Care was taken to ensure that the stakeholder consultation process was reflected in all the project components. Stakeholder participation will continue through detailed design and during planning, implementation, operation, and maintenance. The minutes of the meetings of the consultations held during detailed project design phase are documented and available. The NGOs are also involved in conducting ongoing awareness programs and facilitating project implementation.

Capacity development and training have been ongoing processes in the North Karnataka Urban Sector Investment Program since 1996. Safeguard training would benefit from covering social implementation issues, especially for the NGOs, social development officers, and ULB staff. Some of the training programs for the program officers have been done at the State Institute for Urban Development at Mysore. ADB holds regular training courses on various subjects at this venue. A training program for safeguard procedures was conducted in September 2013.

The implementation process for the project visited is streamlined. The institutional setup contains the required social safeguard staff at all levels—in the executing agency office and the project implementation unit (PIU). There could be an exchange of experience and good practices from this project to other urban projects under implementation in the country and region.

Project monitoring and reporting are well documented. However, the monitoring system could be further improved with comprehensive tracking to show the social safeguard status of the project at a glance. All the project units are well networked with the executing agency based in Bangalore. A well-designed tracking system will provide added value.

e. Assam Urban Infrastructure Investment Program, India

The Assam Urban Infrastructure Investment Program (AUIIP) has a resettlement framework, which is in the

process of being updated, taking into consideration the provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Therefore, resettlement plans prepared after 1 January 2014 follow the updated resettlement framework. Resettlement plans that were prepared and approved before January 2014, but updated in 2014, follow the provisions as given in the earlier resettlement framework. Surveys have been conducted to determine the likely social impacts, along with estimates, and these have been submitted to the government. Based on the decision of the government on the compensation package as assessed by the project management consultants, the resettlement plans will be updated by the design and supervision consultant. Some of the subprojects are yet to be finalized. This means that only after the finalization of subprojects can resettlement plans be updated or prepared. Where land acquisition has yet to take place, compensation under the 2013 act apply.

The Assam Urban Infrastructure Investment AUIIP Tranche 1 is managed and implemented by a PMU, and supported by the design and supervision consultant and project management consultant. The two PIUs—one at Guwahati and one at Dibrugarh—are not yet in place. The PMU reports to the executing agencies—the Guwahati Development Authority for the Guwahati subprojects and the Urban Development Department for the Dibrugarh subprojects. The PMU is headed by the project director, who currently holds this position as an additional responsibility. He is assisted by the additional project director, who is also holding the position as an additional responsibility. The other officers of the PMU include one management information systems expert and two accounts department staff members. All the water supply projects, after commissioning, will be handed over to the Revenue Management Commission, Delhi Jal Board, for operation and maintenance.

There are no social safeguard specialists at the PMU level and the PIU has not been set up yet. The safeguard staff are working without any counterpart inputs from the client. The proposal for setting up the GRC is with the executing agency; no action has been taken on it as it is not perceived to be urgent.

The PMU has provision for one chief engineer, two superintending engineers, three executive engineers, one administrative officer, one land acquisition officer, one safeguards and compliance officer, one information technology support officer, and one chief accounts officer. Currently, the PMU only has a management information officer and an accounts officer. The project management staffing is complete with an environmental and social safeguard specialist in place. The design and supervision consultants have a social safeguard expert in place.

Under the ADB technical assistance, draft resettlement plans have been prepared and are available. However, the plans need to be updated and verified, taking into consideration any changes in design, project sites, and people affected. The quarterly progress report for March 2013 and the semiannual safeguard monitoring reports are available. However, because work has just started, most R&R work involves undertaking consultations and socioeconomic surveys. All the updating and monitoring work is to be done by the design and supervision consultant, under the supervision of the project management consultant. Construction work has started in areas where there is no new land acquisition, and therefore no resettlement issues.

NGO selection is in progress. Expressions of interest for R&R implementation have been received from only three NGOs. The NGO selection must be approved by the consultant selection committee. The role of the NGO is to mobilize the community and create awareness, assist in the implementation of resettlement plans, and conduct monitoring. The NGO selection process has been protracted, causing further implementation delays.

Training by the project management consultant on a construction management training program for the PMU, design and supervision consultant, and the contractors was in the pipeline at the time of the case study consultations. The social and environmental aspects have been embedded in this training. However, the drawback was lack of safeguard staff at the PIUs and the PMU. It was reported that the project management consultant will conduct exclusive social and environmental training as part of their training program once all staff of the PMU and PIU are on board. Currently, the safeguard expert of

the design and supervision consultant is being trained by the project management consultant on a one-to-one basis.

In conclusion, there is no support from the client for social safeguards and there is no safeguard officer either in the PIU or the PMU. There are no PIUs in place and no NGO has been identified, although the project is already set to be implemented.

All the resettlement plans need to be updated because the location of some of the subprojects has been changed. In some subprojects, such as the reservoirs in Guwahati, the site for a reservoir is yet to be finalized. Surveys need to be carried out in the new locations and the resettlement plans will then have to be revised accordingly. In some of the subprojects, the 2013 act is applicable after 1 January 2014. In sum, this project requires a lot of streamlining for social safeguard compliance.

f. Bihar State Road Development Corporation, India

The legal framework and principles adopted for addressing resettlement issues in the Bihar State Highways Project have been guided by the legislation and policies of the Government of India, the Government of Bihar, and ADB, as prescribed in the resettlement framework developed for the project. Full resettlement plans have been prepared for all the subprojects. All subprojects are considered Category A for involuntary resettlement. The land acquisition in this project is being done according to the Land Acquisition Act, 1894, as amended in 1984, along with additional provisions made under the Bihar Land Acquisition Resettlement and Rehabilitation Policy, 2007.

Due to the lack of government land, the project is providing monetary assistance to the people who will lose land and structures, rather than building a house or shop for them. Although the affected people prefer this to being moved to another location, in principle, it is better to provide a structure than to give monetary assistance.

The institutional setup in the Bihar State Road Development Corporation is well established, and functioning systems and procedures are in place. The Bihar State Road Development Corporation (BSRDC), Government of Bihar, is the executing agency . The executing agency has a PMU, headed by the managing director. The PMU is supported by eight PIUs. Implementation at the field level is done by NGOs. At the PMU, the social safeguard officer is at the rank of deputy general manager. He has been in office since the inception of the project in 2009. He is well aware of the ADB safeguard requirements and is monitoring the R&R works at all levels. The PMU is highly committed to efficient implementation of social safeguard requirements. At the PIU level, an assistant resettlement officer with the rank of assistant engineer is looking after social safeguard implementation in the field. Supporting the PIU is an NGO. The construction supervision consultants have a resettlement expert to monitor the implementation of social safeguards. These people are well aware of the social safeguards and the necessary monitoring requirements.

Stakeholder consultations have been an important element of project preparation and identification. This has been done very well, as there is very little dissent, as observed in the state highway 78 works, which is a greenfield project with 1,401 acres of land acquisition. Of the total acquisition, 1,290 acres have already been acquired, and so far only 14 cases have gone to court. Stakeholder participation was ensured through focus group discussions and consultations with beneficiary groups, individual affected people, and PIUs, all of which were conducted by the NGOs. Care was taken to ensure that the stakeholder consultation process was reflected in all the project components. Stakeholder participation will continue through detailed design and during planning, implementation, operation, and maintenance. The minutes of the meetings related to the consultations are documented and available. The NGOs are also involved in the ongoing income restoration program and are facilitating project implementation.

During the site visit, interactions were held with project-affected people in Kansari and Mustafapur. When asked whether the project has benefited them, the affected people responded that, in addition to better connectivity, they have benefited from the project's compensation money by clearing existing debts, getting their daughters married, building houses, starting a business, and being

Figure 43: Affected People from Mustafapur Village Receive Training

able to provide better education for their children. They all agreed that the value of their remaining land along the road would also rise.

Social safeguard documentation is up-to-date and available for review. The resettlement plans approved by ADB have been implemented. Implementation is being done by the NGOs, which submit regular monitoring reports to the PIUs, contractor-supervising consultants (CSCs), and the PMU. The quarterly and annual monitoring reports, and the resettlement plans, are all available on the BSRDC website. All progress reports are monitored by the PMU.

The NGOs associated with implementation are CRADLE, SUGUM, and Study Point Samiti. All have been mobilized and are working at the site, implementing the resettlement plan. The NGOs work as a link between the PIU and the community and prepare the micro plan to ensure that all assistance is provided. They also ensure that affected people are trained according to the extent of their loss. Based on discussions with the NGOs and observation of work implemented on site, the NGOs are very effective and the implementation work of resettlement of nontitleholders has also progressed well. However, it had taken almost 2 months for the micro plan to be approved. This needs to be expedited by the PMU. Linking those losing their livelihood to income generation programs is another important task the NGOs have implemented effectively.

The discussions with the NGOs revealed that mitigation measures should be designed as far as possible in the detailed project design stage so that during implementation, issues, especially those related to land acquisition, are minimized. Overall, the affected people have been cooperative and there have been extensive interactions among the NGOs, the PIU staff, and the local people.

Social safeguard implementation is being done efficiently at all levels, from the PMU to the NGOs. There is a social safeguard officer at each level of project management to monitor the work. This robust staffing pattern with few instances of staff being transferred is beneficial to the project and can be cited as a good practice. Continuous consultation with the affected people has ensured efficient implementation. The main constraint has been the time taken for the land acquisition process. Although the acquisition is being done under the emergency clause, it still takes at least 2 years. This is one area that needs to be streamlined.

Since March 2010, ADB has provided training on social safeguards to deputy general managers, the manager technical, and the general managers. Ongoing in-house training is conducted regularly by the CSCs for the NGOs. However, further training of NGOs and the safeguard experts at the construction supervision level has to be enhanced. The PMU suggested that the social safeguard training program should involve all levels from the PMU

to the NGOs within a unified format so that issues can be discussed in an open and transparent manner.

g. Nepal Electricity Authority

The Environmental and Social Studies Department (ESSD) is responsible for preparing the safeguard documents for the Nepal Electricity Authority (NEA) projects. It conducts social and environmental safeguards studies on behalf of the NEA and is responsible for preconstruction monitoring of the proposed project. The Dumre–Damauli Environmental Management Unit (EMU), comprising staff from the ESSD, among others, will be established to monitor construction phase of the project. This unit will be responsible for compliance and impact monitoring works associated with the Dumre–Damauli 132-kilovolt transmission line project. The group will have a dedicated staff looking after social issues.

There were no social safeguard documents for the Dumre–Damauli or the Chapali projects, and there was no resettlement framework or resettlement plan for the Dumre–Damauli project. Reference to social issues has been made in the initial environmental examination (IEE). The IEE has given the numbers of affected people, and structures and land to be acquired, as well as estimates for budgetary provisions to cover the acquisition of land and affected structures. Consultations have been carried out and documented. Monitoring of social issues is also done along with the IEE monitoring. There is capacity for resettlement plan preparation, but for the projects that were discussed, ADB had not asked the ESSD to prepare a separate social safeguards framework or related documents.

For land acquisition, the NEA follows the Land Acquisition Act, 1977. During discussions with the NEA on the methodology for calculating the market price of land, it was noted that the price paid for land was close to the market price. However, it was not clear from the report or discussions whether the compensation paid for the land acquired for the Dumre–Damauli project is replacement cost.

The NEA has a separate training center that provides engineering and management-related training. It has a dedicated staff under the control of a director. With this training center operational, the ESSD can train to all the officers of the NEA. Once the PMU is formed and the NGOs are in place, the stakeholders in the project will need to be trained. The ESSD social safeguard staff will require training from ADB on the preparation and implementation of the resettlement plans.

This case study reveals several issues that need immediate attention: (i) there is a need for a separate resettlement plan or framework, (ii) land acquisition plans need to be documented, and (iii) monitoring reports are required showing how much compensation was agreed upon and has been paid. This project was initially handled by ADB HQ and and is currently under the administration of Nepal Resident Mission. The Nepal Resident Mission will need to review and streamline social safeguard documentation, payment of compensation, and other issues.

h. Second Small Towns Water Supply and Sanitation Project, Nepal

The project includes water supply and sanitation services, including the construction of public toilets, a sludge-drying bed for septic tanks, sludge disposal through an integrated approach, and wastewater management systems. All services are perceived to have significant social benefits. The solid waste management activities, construction of the drainage system in the town center, and provision of output-based aid (OBA) to the service receivers are also included in the town project. The project is based on a demand-driven and interactive procedure that ensures full participation of the local users in the project formulation, implementation, and operation and maintenance (O&M). The project consists of many individual water supply subprojects covering small towns in different parts of Nepal.

The Ministry of Urban Development is the executing agency. The responsibility for subproject execution is delegated to its Department of Water Supply and Sewerage (DWSS). A project management office (PMO) established in the DWSS is responsible for the overall project planning and management, including selection of towns, assistance for design, construction supervision, O&M, and overseeing safeguard compliance. Three deputy project directors and three social development officers take care of the 21 affected towns. The water supply and sanitation divisional or subdivisional offices of the DWSS, under the guidance of the PMO, carry out overall management of individual subprojects, such as

supporting the feasibility studies and detailed designs, managing the performance of design and supervision consultants, engaging and supervising the services of local NGOs, and providing technical support for O&M. The design and supervision consultant has one environment specialist and one social development specialist for every three towns. There are a total of 21 NGOs, all of which are mobilized. The regional monitoring and supervision offices of the DWSS supervise and support the water supply and sanitation divisional or subdivisional offices in the region. Once the water supply and sanitation facilities are constructed, water user and sanitation committees (WUSCs) will be responsible for their O&M.

The town project coordination committee also acts as the GRC. This comes under the district development committee. The project implementation support unit (PISU) is within the town project office (TPO). The PISU has two social mobilizers. Quarterly monitoring is done by the PMO. Monitoring formats have also been provided to the design and supervision consultant.

The project has an OBA component. OBA is a method for using performance-based grants to support the delivery of basic services where policy concerns justify public funding to complement or replace user charges. In this project, the intention is to increase the access and delivery of water and sanitation services to poor and vulnerable populations. Under the OBA, grants will be given to service providers—WUSCs—after the outputs have been completed and verified. Because the WUSC will only be reimbursed for the output after completion, the contractors need to raise enough funds on their own for the first phase of implementation.

Safeguard training has to be provided, especially to the water users and sanitation committee (WUSC). These people at the grassroots, who ultimately own and run the project, need to be made aware of the mandatory safeguard systems. To date, the participatory approach of the WUSC has been exemplary, and should enhance community benefits from the project.

The project follows the ADB guidelines for involuntary resettlement and the indigenous people framework. A resettlement framework is in place. The Baglung project reports indicate that due diligence reports have been prepared for social safeguards, as the involuntary resettlement category for the project is C. This project is an excellent example of effective community participation.

In this project, land must be provided encumbrance-free before the project intervention takes place, so the user community identifies land, buys it if necessary, and then hands it over to the project. If land is bought from private parties, compensation must be paid according to the resettlement framework, i.e., at replacement cost. This needs to be reflected in the resettlement framework. In case of donation of land, documentation of the process and agreement by the donor must be recorded. The WUSC acquires land for the project through negotiation with the landowner on a willing buyer–willing seller basis, or through donation.

The WUSC is a grassroots user committee that owns the project. The WUSC is formed by the project beneficiaries. It is responsible for providing encumbrance-free land and dealing with any issues arising from the project. As the WUSC members are the owners of the built assets, they participate in the formulation, design, and construction of the water supply system. They make a 50% investment in the construction cost and are financially responsible for generating revenues to repay construction loans. They supervise selection of beneficiaries, among other responsibilities.

In this project, land was already available to the WUSC before the project intervention. However, there have been some implementation concerns. For example, most parts of the water supply pipelines are located along the road, but in a small section they occupy private land. No compensation has been given, but the remaining land is protected by putting up fencing around the pipeline. There was also a problem at the source of the water supply project at Lekkhani. Here, the people were not being adversely affected, but they saw the project as a good opportunity to raise demands for infrastructure,

such as electricity, road maintenance, and bridge construction, in the source area. The WUSC in Baglung had a series of consultations with the people around the source area to understand their grievances. It found that none of the residents used the water source for drinking and only some used it for irrigation. However, people wanted a bridge to be built in the area to provide connectivity. The argument of the people around the source was that the project should provide something for the community in return for using the water source. The WUSC then had a series of discussions and decided to construct the bridge in order to get the project going (Figure 44).

The project did not have additional funds for the bridge, but the WUSC was able to obtain government funding after discussions with officials in Kathmandu.[30] This kind of community intervention that goes beyond the project to help local people can be seen as a good practice. Another implementation concern was that the Government of Nepal does not pay on time to the town development fund. As a result, the contractor started charging a penalty for late payments, and the burden falls on the community, which has to pay higher tariffs.

The NGOs have been interacting with the community and helping to mobilize them. They have also provided sanitation training to the community.

The project area has indigenous peoples, such as Magars, Newras, and Gurungs; however, these communities were not being negatively affected by the project. The entire population, including the indigenous population, will benefit from the water supply project.

There is a need for training and capacity building at all levels, including the social safeguard staff at the PMO, the design and supervision consultants, the PISU, the water users' associations, the NGOs, the officers from the district development committee and the local bodies, and especially the WUSCs. The WUSCs, who are at the grassroots and ultimately own and run the project, need to be made aware of the mandatory safeguard systems. So far, the participatory approach of the WUSC is an

Figure 44: Bridge at Lekkhani Being Constructed after Intervention by the Water User and Sanitation Committee

[30] The project's fund for social work was only Rs500,000, and the cost of the bridge, which the government provided, was Rs2,500,000.

excellent example of how the community benefits from its extra efforts.

As noted, the project had no budgetary provision for undertaking any beneficial social work beyond the actual physical works of the project. To mitigate social impacts, additional funds for community works may prove to be beneficial for a project of this nature.

i. Rural Reconstruction and Rehabilitation Sector Development Program, Nepal

The Rural Reconstruction and Rehabilitation Sector Development Program (RRRSDP) is expected to reduce rural poverty in hill, mountain, and Terai districts where isolation and hardship are common. It focuses on immediate postconflict development priorities for accelerated poverty reduction and inclusive development, which aims to enhance the effectiveness and efficiency of the delivery of public services, and improving access of rural people to economic opportunities and social services. The project has improved connectivity, enhanced economic and employment opportunities, and increased access to market and social services for the rural communities involved.

The RRRSDP has been following the ADB social safeguard principles and policies. The reports and social safeguard documentation are available for review. The program has a resettlement framework and the entitlement matrix is in place. The social safeguard reports include a gender action plan; a social action plan; an indigenous people development plan, which has been prepared for 13 roads; a short resettlement plan; a baseline survey; and a zone of influence survey.

Under the program, training courses have been provided to women, including in off-season farming and beauty services. Livelihood enhancement skills training has been provided for one person in each vulnerable family.

In this program, the land donated for infrastructure is being transferred in the name of the Government of Nepal. This is a good practice, as it will prevent any ownership disputes later on.

This program follows a community-driven approach that gives communities ownership over planning and project implementation. The subproject will provide direct benefits to the community, including improved access to markets and services such as schools and health services. The improved road is also expected to lead to higher local land values and production because of the improved access and availability of agricultural inputs. Most local people are willing to donate part of their land for road improvements that provide benefits to the community. The process is guided through a safeguard system built into the resettlement plan, ensuring that the land is donated voluntarily and without intimidation and does not lead to the impoverishment of affected people. Those unwilling to donate land can go through the government's land acquisition process.

The following social safeguards are listed in the resettlement plan:

(i) Affected people and communities are fully consulted with regarding selection of sites and appropriate design to avoid or minimize additional land acquisition and resettlement effects.
(ii) Affected people were informed of their right to compensation for any loss of their property (house, land, and trees) as a result of project construction, and that land donation might be accepted only as a last option.
(iii) No one will be forced to donate their land, and affected people will have the right to refuse land donation.
(iv) In case affected people are directly linked to project benefits, and thus are willing to voluntarily donate their land after they are fully informed about their entitlement, the project will assess their socioeconomic status and potential impact of land donation and accept land donation only from those who do not fall below the poverty line after the land donation.
(v) Any voluntary land donation (after the process mentioned above) will be confirmed through a written record, including a "no coercion" clause verified by an independent third party.
(vi) The donation will be limited to only land and minor assets (houses and major assets will be excluded from donation).

(vii) A grievance redress committee (GRC) will be set up at the village development committee level in every road section (chaired by a local leader, and including representatives of affected people) and affected people who are not satisfied with the land donation can file their complaint with the GRC. If the GRC finds that the above provisions were not complied with, the affected people will be excluded from the land donation.

The resettlement plan also states that all involuntary land acquisition (other than exceptional voluntary land donation) will be compensated at replacement cost and affected people will be assisted so that their economic and social future would generally be as favorable as it would have been in the absence of the project. The absence of formal title to land will not be a bar to compensation assistance for loss of assets, and special attention will be paid to ensure that households headed by women and other vulnerable groups receive appropriate assistance to help them improve their status. The affected people whose land could be impacted by the road will be informed by the project office through the publishing of a general notice at the village development committees (VDCs).

The concerned landowners were informed individually and the memorandum of understanding was signed with the district project office (DPO). The households donating land signed a written consent in the presence of the officials from the NGO, the VDC, the grievance redress subcommittee, and the village infrastructure construction coordination committees (VICCCs) as third-party witness. The memorandum of understanding for voluntary land donation has been signed by the 137 households in the Chyamasingh–Amaldol Nala road subproject. The affected people who have voluntarily donated the land for the subproject receive an appreciation letter from the DPO.

In this project, provisions were made to transfer the ownership of donated land into the name of the Government of Nepal. This is a good practice, as it will prevent any ownership disputes later on. In contrast, in India, in the Pradhan Mantri Gram Sadak Yojna—an initiative similar to the RRRSDP—where ADB funds were used in several states, it has been extremely difficult to transfer the ownership of the land donated into the name of the government because the process of transfer in the Indian context is very cumbersome. Therefore, in most of the roads, the ownership has not been transferred legally.

The institutional setup for the RRRSDP is very elaborate and includes central and decentralized levels. The Ministry of Local Development is the executing agency responsible for overall project management and implementation and the Department of Local Infrastructure Development and Agriculture Roads is the project implementation agency at the central level. The organizational structure at the center has a project monitoring committee and a project coordination unit (PCU). At the decentralized level, there are the project implementation agencies that include the DPO and the VICCC.

A compensation determination committee (CDC) has been formed under the chairpersonship of the chief district officer. Affected people will also receive opportunities to restore their livelihood through livelihood enhancement skill training. A GRC has been formed at the district level to hear and resolve the complaints of affected people. Similarly, grievance redress subcommittees have been formed at the village level, and include three representatives from the VICCC and two from the affected people. The GRC and its subcommittees facilitate in hearing the complaints and disputes relating to land acquisition and compensation.

The PCU, the DPO, and the VICCC at the subproject VDC level are all involved in implementing the resettlement plan. The DPO is responsible for the internal monitoring of the resettlement planning and implementation throughout the subproject cycle. A verification report on resettlement plan implementation is prepared by the PCU and submitted to ADB for approval. The activities are to be monitored and evaluated externally once a year through an independently appointed agency that has no involvement with the project. They will perform the monitoring, based on established indicators, and provide a report to the PCU, the DPO, and ADB.

The program's multiple levels of project committees from the center to the local level may cause overlap of responsibilities that may hamper implementation. It

can be helpful to reexamine the role of every unit and to determine its usefulness, especially in terms of social safeguard implementation.

Based on the discussions with the VICCC members, it was noted that those people who are living along the road and will be using the road were willing to donate land for the project, but those who have land in the project area but reside in other towns and villages did not want to donate. There was also a case in which the owner of a house with a septic tank within the road area refused to remove his septic tank, even though the project was ready to provide compensation. This issue could not be resolved with the intervention of the VICCC, so the road was made narrower at that point (Figure 45).

Another issue was the problem of collateral: many people had taken a loan against their land. In such cases, it was difficult for the project authorities to transfer land, because the land has been given as collateral to the bank. In a number of other cases, there was a difference in terms of land notified for donation and land acquired. Discrepancy, therefore, happens, in the total area of land needed for the project. This poses concern on the part of affected people as they are not willing to donate land apart from the initial land area previously agreed upon, as needed by the project.

The VICCC members asked for training programs related to implementation and project safeguard requirements so they could, as a community, work together to improve the quality of the project. Discussions had revealed that there are too few trained people at the district and/or implementation level.

The availability of land records is another issue in Nepal, as it is in India. Further discussion is required to make the transfer of donated land to the government more efficient. In most cases, people are willing to donate their land. However, to reduce later conflicts, the interaction should begin at the project design stage.

C. Prevailing Trends in the Region: Comparative Analysis of Safeguard Requirements versus Implementation

Each of the case study projects presented unique combinations of project status, sector focus, technical complexity, institutional capacity, and location specifics that could challenge project implementation.[31] While the

Figure 45: House with Septic Tank in Chyamasingh–Amaldol Nala Road

[31] Note that the selected projects do not reflect the whole portfolio of ADB projects in the three countries, as the sample size is small relative to the total portfolio.

case study projects cannot be directly compared with one another, they indicate some prevailing safeguard trends in the region from which institutional constraints appropriate fixes can be distilled to make the safeguard process more meaningful. As before, the analysis is separated into environmental and social safeguards.

1. Environmental Safeguards

The results of the case study analyses and consultations in Bhutan, India, and Nepal were reorganized according to 28 criteria reflecting the degree and effectiveness of environmental safeguard implementation, which in turn addressed the whole sequence of environmental safeguard implementation, from definition of the environmental management plan (EMP) to corrective action and ADB monitoring. This refined the analysis and helped to isolate the requirements for an action plan to improve environmental safeguard implementation in the three countries. The criteria that were established for the analysis are as follows:

1. Environmental planning process supports development of an appropriate EMP
2. Project location alternatives and design reflect environmental concerns
3. Appropriate and realistic EMP
4. Community awareness of project details
5. Community involvement in mitigation and monitoring
6. Degree of effective EMP implementation (compliance)
7. Extent of environmental monitoring
8. Critical habitat issues addressed
9. Implementation of construction best practices and pollution minimization
10. Health and safety issues related to workers addressed
11. Health and safety issues related to local communities addressed
12. Conservation of physical cultural resources
13. Degree of training of responsible entities
14. Use of appropriate manuals and information resources
15. Relevance and effectiveness of national standards and guidelines
16. Accessibility and adequacy of EMP and monitoring documents
17. Clarity of respective environmental safeguard roles
18. Contract specifications for environmental safeguards
19. Adequate staffing of environmental safeguard roles
20. Adequate funding for all required measures
21. Technical adequacy of environmental mitigation measures
22. Site-specific adjustments to EMPs
23. Appropriate work sequencing to create effective mitigation
24. Effective use of monitoring and safeguard tracking systems
25. Effective relationship between monitoring and compliance
26. Regulatory interventions (modifications and/or work stoppages)
27. Timeliness of environmental safeguard fixes
28. Degree of engagement of ADB in monitoring and follow-up

These criteria reflect all the ADB environmental safeguard requirements, the functional requisites of environmental safeguards, and the needed links between various safeguard components, which, if fully met, would make the environmental safeguard process more meaningful. For some projects and certain criteria, details remained obscure due to lack of documentation and/or lack of understanding of the issues on the part of the project staff and consultants. This was especially true when there had been loss of continuity of staff and an incomplete corporate record. These situations are noted below.

Environmental planning process supports development of an appropriate environmental management plan. Environmental planning, in this case, refers to adequate description and understanding of both the proposed project and the environmental context in which the project will be developed. This normally occurs early in project development, and is associated with the initial environmental examination (IEE) or the environmental impact assessment (EIA). All residual negative environmental impacts should be properly identified, and location alternatives, project design options, and technical approaches can be incorporated into the mitigation measures in the environmental management

plan (EMP). The project assessments for this criterion are summarized in Table 9.

Overall assessment: All projects have an adequately developed EIA, IEE, and EMP; however, site-specific details are lacking in some cases. Bhutan projects were more consistently complete with detailed EMPs.

Project location alternatives and design reflect environmental concerns. Following from the criterion noted above, this criterion reflects a detailed assessment of technically feasible project location alternatives (within a reasonable distance, assuming that some still meet the technical requirements of the project, but might have fewer environmental risks) and consideration of various design options (that might reduce environmental risks). These two aspects are usually examined comparatively, and the most technically feasible, environmentally benign option (assuming costs are not prohibitive) is selected. The project assessments for this criterion are summarized in Table 10.

Overall assessment: Alternatives have been discussed, where these are available. Most projects are located along existing rights-of-way or in urban areas, so there are no serious environmental concerns related to habitats. There are no obvious national trends for this criterion.

Appropriate and realistic environmental management plan. The most effective EMP will reflect an objective and accurate prediction and description of negative environmental effects associated with a proposed project, and the development of mitigation measures that are fully responsive to each expected environmental impact. These measures will ideally be feasible, practical, and affordable, and have some basis in the scientific literature (having been used and documented elsewhere). The EMP will not simply be copied from a similar project and plugged into the environmental management documents without due consideration of the relevance of the proposed mitigation measures to the specific proposed project and the sites of various project footprints. The

Table 9: Does the Environmental Planning Process Support the Development of an Appropriate Environmental Management Plan?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Yes, there is a good sequence of IEE, EMP development, and subsequent monitoring.
Urban Infrastructure Project	Documents were not easily accessed by project staff, and staff were unfamiliar with them; apparently EMP has been updated to reflect the specific designs of the subprojects (good).
Road Network Project II	Yes, there is very good development and alignment of the EIA, EMP, and related compliance monitoring documents.
India	
Bangalore Metro Rail Transit System Project	Yes; the EMP is logically developed based on an IEE. Engineers are not very familiar with environmental approval documents.
North Karnataka Urban Sector Investment Program Tranche III	Yes, there is quite a detailed IEE and development of the EMP, although the EMP has been borrowed from another project and has lost some site specificity.
Assam Urban Infrastructure Investment Program Tranche 1	IEE and EMP are in place, but the EMP was prepared before specific sites were selected, so details are missing.
Bihar State Highways II	Yes, there is a good level of documentation leading to a useful EMP.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	IEE for transmission lines is only required by ADB, not Government of Nepal; generally, IEE informs an adequate EMP, but there are few environmental issues with transmission lines.
Second Small Towns Water Supply and Sanitation Sector Project	Yes, there is a good sequence from IEE to EMP, and both are generally adequate, although not very site-specific.
Rural Reconstruction and Rehabilitation Sector Development Program	Yes, this is well done, and has benefited from other such projects in Nepal.

ADB = Asian Development Bank, EIA = environmental impact assessment, EMP = environmental management plan , IEE = initial environmental examination.

Source: Authors.

Table 10: Do Project Location Alternatives and Design Reflect Environmental Concerns?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Work sites have been kept out of dense forest areas.
Urban Infrastructure Project	These subproject sites are defined by service needs in the local area plans (for the most part); there are few options to move some structure around; some sites infringe on forest areas (e.g., the Chamgang water treatment plant), but with minimal impact.
Road Network Project II	There has been deliberate avoidance of protected areas and dense forest; some subprojects are restricted to existing road rights-of-way.
India	
Bangalore Metro Rail Transit System Project	Yes, for the most part, as the work is done in existing rights-of-way and is not near protected areas or waterways.
North Karnataka Urban Sector Investment Program Tranche III	The assessment was based on technical requirements, but most sites are quite benign environmentally.
Assam Urban Infrastructure Investment Program Tranche 1	Site selection is still ongoing for the project components that were examined (water supply); at least one of the sites has high erosion potential and challenging access.
Bihar State Highways II	Most of the highways are on existing rights-of-way; greenfield sites avoid forests and protected areas.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	As a linear project, line routing is expected to avoid forest as much as possible and protected areas.
Second Small Towns Water Supply and Sanitation Sector Project	This is not very evident for all the projects (there are currently 21 subprojects), but seems to have been considered for Baglung.
Rural Reconstruction and Rehabilitation Sector Development Program	Apparently so; the Nala road project follows the existing right-of-way, so environmental issues are avoided.

Source: Authors.

project assessments for this criterion are summarized in Table 11.

Overall assessment: EMPs are adequate. Generally, those from India and Nepal have borrowed earlier templates and lack site-specific details. Bhutan EMPs are detailed and site-specific.

Community awareness of project details. In general, most communities know some of the basic details of the projects in which they will participate, benefit, or otherwise be affected. However, ideally, local communities should know about all the possible environmental impacts, which should be disclosed during required consultations; the proposed mitigation measures, to which they should have contributed to some extent; and the project schedule, activity sequence, the specific roles of the members of the local community as they pertain to the project, and the roles of the government, project staff, and consultants. The project assessments for this criterion are summarized in Table 12.

Overall assessment: Community awareness of project details is quite inconsistent between projects and countries. There are no obvious trends, except that community proximity to projects clearly increases the probability of awareness (except for one project in urban areas in Bhutan).

Community involvement in mitigation and monitoring. Some projects can provide appropriate opportunities for community involvement in implementation of mitigation measures. For example, they may provide local construction jobs that might focus on slope stabilization or tree planting. There may also be a role for some community members in monitoring the environmental effects of the project or work-site practices, and reporting the findings to the appropriate authorities. Community involvement in monitoring can be a challenging activity, requiring some training to focus on important attributes of the project and work-site practices, as well as a suitable reporting protocol, and avoiding trivial items that can be easily fixed on-the-spot. Community engagement in project monitoring needs to be formally recognized,

Table 11: Is the Environmental Management Plan Appropriate and Realistic?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Yes, it is specific to the project site.
Urban Infrastructure Project	Yes, it has been made specific to subproject designs and locations. A compliance checklist was used.
Road Network Project II	Yes, it is suitable and appropriate to road construction.
India	
Bangalore Metro Rail Transit System Project	Yes, it is appropriate for the nature of the project.
North Karnataka Urban Sector Investment Program Tranche III	Yes, it is appropriate, but borrowed from another project and not carefully tailored to the project-specific sites.
Assam Urban Infrastructure Investment Program Tranche 1	Yes, it is appropriate at a generic level, but not yet site-specific.
Bihar State Highways II	Yes, but it is not site-specific.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Yes, it is generally suitable for transmission lines.
Second Small Towns Water Supply and Sanitation Sector Project	Yes, it is appropriate, but mostly generic, based on a template used for all subprojects.
Rural Reconstruction and Rehabilitation Sector Development Program	Yes, it is appropriate and has a good level of detail that reflects an understanding of road projects in Nepal; but it lacks site-specific technical details.

Source: Authors.

Table 12: Is the Community Aware of Project Details?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Awareness is evident, as the project is nearing completion and community service upgrades were undertaken.
Urban Infrastructure Project	Awareness appears to be minimal, based on some community feedback.
Road Network Project II	There is a fairly good level of awareness, as communities are located immediately adjacent to the road works; most are benefiting, but there are some complaints about community service infrastructure being disrupted.
India	
Bangalore Metro Rail Transit System Project	The community is very minimally aware.
North Karnataka Urban Sector Investment Program Tranche III	This is not apparent.
Assam Urban Infrastructure Investment Program Tranche 1	Yes, the community is aware for the two sites examined, which are now marked and surveyed; there are local community concerns about expropriation.
Bihar State Highways II	Awareness is quite good at sites visited.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	This was not evident (the two ADB projects were only just starting).
Second Small Towns Water Supply and Sanitation Sector Project	Awareness is very high for the Baglung subproject; the local community has a 50% funding commitment.
Rural Reconstruction and Rehabilitation Sector Development Program	Awareness seems to be quite good, as the community is directly involved in some of the road works, and they have some very specific notions of road alignment, width, and concerns about construction waste.

ADB = Asian Development Bank.

Source: Authors.

with clear roles specified that all project stakeholders are aware of. The project assessments for this criterion are summarized in Table 13.

Overall assessment: Most local communities do not have a role in mitigation and monitoring, except in Nepal, where there is a higher degree of community engagement in projects. In Bhutan, it is not developed. In India, there is a stronger presence of nongovernment organizations (NGOs) operating on behalf of communities.

Degree of effective environmental management plan implementation (compliance). There are at least two elements of an EMP that affect the degree of implementation: the original design and structure of the EMP (whether all possible negative environmental effects have been correctly anticipated) and the rate and sequencing of EMP tasks (how the actual EMP tasks reconcile with the original approved plan, including compliance with local regulations). The project assessments for this criterion are summarized in Table 14.

Overall assessment: This criterion is generally inconsistent within countries, except Bhutan, which has a slightly more consistent safeguard compliance. Worker camp conditions, worker safety, and sediment stabilization and erosion controls seem to be the most challenging in all countries. Based on the small sample, Bhutan seems to have a higher rate of EMP implementation, followed by India, and Nepal.

Extent of environmental monitoring. In theory, all environmental parameters that are important and possibly at risk from a project should be monitored before and during the time when the project may affect them. Environmental monitoring should be undertaken at appropriate locations and at suitable intervals, using an appropriate sampling protocol and enough replication to provide confidence in the results. The overall minimum objectives of environmental monitoring will include an assessment of compliance of the project with the agreed environmental safeguard measures (whether they have been implemented at the correct times and in the right locations), an assessment of the effectiveness of the proposed measures (whether they are reducing negative environmental effects), and a determination of possible negative and positive environmental effects that were not anticipated in the

Table 13: Is the Community Involved in Mitigation and Monitoring?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	There is no involvement. All mitigation and monitoring is done by the Dagachhu Hydro Power Corporation and the National Environment Commission.
Urban Infrastructure Project	There is no involvement. Mitigation and monitoring are undertaken by project consultants and the National Environment Commission.
Road Network Project II	There is no involvement, but there is community personal interest and vigilance regarding community service infrastructure
India	
Bangalore Metro Rail Transit System Project	There is no involvement, but apparently there have been no public complaints related to the environment.
North Karnataka Urban Sector Investment Program Tranche III	There is no involvement, but a local nongovernment organization has undertaken site visits and public consultation, mostly for healthy water use and family hygiene.
Assam Urban Infrastructure Investment Program Tranche 1	Construction is not yet under way.
Bihar State Highways II	There is no involvement.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	There has been no involvement to date.
Second Small Towns Water Supply and Sanitation Sector Project	The village development committee is heavily involved in monitoring, but is not very familiar with environmental issues and options.
Rural Reconstruction and Rehabilitation Sector Development Program	There is no direct involvement in mitigation, but the village development committee has kept a close eye on the contractor. (They are more tolerant of their own activities in the project; for example, blocking the road during the final drain construction.)

Source: Authors.

Table 14: Are Environmental Management Plans Complete and Fully Implemented?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	There is a very high rate of compliance with requirements in the EMP.
Urban Infrastructure Project	Compliance checklists that were examined indicated full compliance, but this mostly reflects administrative requirements rather than site conditions; site observations indicated lapses in environmental management, especially sediment management and drainage, and worker camp conditions.
Road Network Project II	The compliance rate is quite high (73%–98%), and some subprojects have a large number of mitigation measures. The road upgrading that was observed had very few mitigation measures, and compliance was lagging (five measures were fully complied with, four partially complied with, and one not yet addressed).
India	
Bangalore Metro Rail Transit System Project	Either certain issues were not identified in the EMP, or compliance is lagging, but effective environmental safeguard implementation is rated at only about 50%–60%. Engineers do not perceive any significant environmental issues.
North Karnataka Urban Sector Investment Program Tranche III	Compliance is adequate for work site conditions but some are sites are messy; it is less so for worker safety as there is very variable use of personal protection equipment. Sediment controls and drainage measures are lacking.
Assam Urban Infrastructure Investment Program Tranche 1	Construction is not yet under way.
Bihar State Highways II	Compliance is quite good, but there are some issues with road shoulder erosion (to be corrected with final hardtoping), and worker camp and project office location have lingering environmental issues. There is slow correction of some issues.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Compliance is not yet evident, but there has been poor compliance in past projects.
Second Small Towns Water Supply and Sanitation Sector Project	Compliance is not very high, as there are many environmental issues evident at the main Baglung work site.
Rural Reconstruction and Rehabilitation Sector Development Program	Compliance is quite good, except for poor slope stabilization at the far end of the road upgrade due to lack of a timely fix. There are some issues with road construction waste. There is poor compliance with safety requirements at the bridge works (no signage or fences create a high risk for local communities).

ADB = Asian Development Bank, EMP = environmental management plan.

Source: Authors.

original EIA. The project assessments for this criterion are summarized in Table 15.

Overall assessment: Environmental monitoring is inconsistent within countries, ranging from science-based environmental quality monitoring to simple visual observations, which are especially evident in Nepal. Remote sites are challenging in all locations. Most monitoring programs could benefit from more rigorous sampling and a tighter analytical and reporting protocol.

Critical habitat issues addressed. Critical habitat is one that supports important or endangered animals and plants or is otherwise designated as a protected area that requires special management approaches and may exclude development projects. The EIA will have identified these areas, and is likely to have excluded them or minimized any project footprints in critical habitat areas. In cases where some adjacency or overlap with critical habitats is unavoidable, the EMP will have identified specific mitigation measures, or compensatory actions to make up for any impingement on critical habitat or reduction in its quality. The project assessments for this criterion are summarized in Table 16.

Table 15: Was Environmental Monitoring Appropriate?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Regular reporting is done for air and water quality and visual inspections of work sites, with quarterly reporting.
Urban Infrastructure Project	There is no air and water quality monitoring; most monitoring is restricted to visual observations and checking for administrative compliance.
Road Network Project II	Monthly contractor reports are combined with project management reporting, which is submitted to ADB. Most observations are visual with photographs, but few scientific data. There is reference to independent monitoring, but this has not been undertaken. The National Environment Commission has few funds for site monitoring.
India	
Bangalore Metro Rail Transit System Project	Monthly air, water, and noise monitoring is done. However, potential contaminants in tunnel muck have not been assessed.
North Karnataka Urban Sector Investment Program Tranche III	Daily monitoring is done by contractors using a preprepared checklist; however, most monitoring is just visual, and tends to be formulaic day-to-day with little detail added. Monthly monitoring is done by project staff.
Assam Urban Infrastructure Investment Program Tranche 1	Construction is not yet under way, but first semiannual report has been sent to ADB. Monitoring is proposed for air quality, water, and noise.
Bihar State Highways II	Air quality and water quality are monitored, as well as worker safety issues. Monitoring locations are not recorded, so it is difficult to interpret some monitoring data.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Monitoring is normally undertaken by the Environmental and Social Studies Department of the Nepal Electricity Authority; it is mostly visual, related to soil management at tower foundations and worker camp conditions. There is no rigorous protocol. For ADB projects, there will be daily compliance monitoring.
Second Small Towns Water Supply and Sanitation Sector Project	Monitoring is not very extensive and mostly consists of visual inspections by the village development committees. Monitoring by the project office in Kathmandu is very infrequent and much less than specified.
Rural Reconstruction and Rehabilitation Sector Development Program	Monitoring is done by the district office, with a focus on visual observations and photographs, but is somewhat lax in frequency and submission of reports. No air quality data are gathered, only visual data, e.g., presence of dust.

ADB = Asian Development Bank, EIA = environmental impact assessment.

Source: Authors.

Overall assessment: Critical habitats appear to have been avoided in most of the projects. This reflects the fact that most of them are urban infrastructure and service projects. In Bhutan, where there is more extensive forest cover, all projects have avoided significant incursion into dense forest.

Implementation of construction best practices and pollution minimization. Construction best practices and pollution minimization are requisites of project implementation that are extremely well-known, documented in many projects, described in the scientific literature, and frequently codified in local regulations and ADB project documents. Standard practice is to have construction best practices and pollution minimization as explicit components of contracts with all builders and construction companies. The intention is to maintain work site safety at all times, reduce the production of waste, and allow for effective treatment of all items and discharges that may leave a project work site. The project assessments for this criterion are summarized in Table 17.

Overall assessment: Implementation of construction best practices and pollution minimization are fairly inconsistent within countries, reflecting variability in site

Table 16: Are Critical Habitat Issues Addressed?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Critical habitat has been avoided. Wildlife presence continues to be monitored.
Urban Infrastructure Project	Critical habitat has been avoided at most sites. The location is urban.
Road Network Project II	Critical habitat issues seem to have been addressed; for example, elephant crossing is accommodated in some road sections in the south-central part of Bhutan.
India	
Bangalore Metro Rail Transit System Project	There are no habitat issues. (The project area is exclusively urban.) Mature trees adjacent to stations have been retained, which is very positive.
North Karnataka Urban Sector Investment Program Tranche III	No critical habitat is evident. The opportunity to develop a constructed wetland and enhance the quality of the local lake has been missed.
Assam Urban Infrastructure Investment Program Tranche 1	No critical habitat is apparent at the two sites examined.
Bihar State Highways II	Critical habitats are avoided; most roads are along existing rights-of-way.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Critical habitats are avoided during route alignment studies.
Second Small Towns Water Supply and Sanitation Sector Project	Critical habitats are not evident in the Baglung subproject.
Rural Reconstruction and Rehabilitation Sector Development Program	No critical habitat is apparent; most subprojects are along existing rights-of-way.

Source: Authors.

conditions, the nature of the projects, and contractors, as expected. Sediment stabilization and drainage are the most challenging issues, along with worker camp conditions, which as most consistently neglected. Contractor shortcuts to save time and money were cited as concerns in all three countries.

Health and safety issues related to workers addressed. This criterion is related to the one discussed previously. It pertains to work site conditions, work site practices (provision of appropriate safety equipment that matches the risks on the site), and the setup and conditions of the worker camps (comfortable, safe, and no health risks). In most places, the health and safety concerns related to development projects are addressed in national or local regulations, which clarify the obligations of the companies employing the workers, the rights and responsibilities of the workers themselves, and the role of government as a regulator. The project assessments for this criterion are summarized in Table 18.

Overall assessment: Projects in Bhutan and India have mixed success in addressing worker safety, with some projects performing well on this criterion and others lagging. Projects in Nepal reflect a fairly consistent neglect of worker safety, especially use of personal protection equipment.

Health and safety issues related to local communities addressed. The activities and equipment associated with project construction can present risks to local communities, especially if local communities are in close proximity to project, as is inevitable in urban areas. Project sites would normally require signs and fencing, and plans for equipment, traffic, and/or pedestrian management. An influx of construction workers can also increase health risks in local communities, depending on the incidence of communicable diseases in the worker community. Some kind of segregation and awareness programs on health and safety issues are usually employed to reduce related risks. The project assessments for this criterion are summarized in Table 19.

Overall assessment: Precautions related to community health and safety issues are not well addressed in all three countries. Most issues relate to lack of signage, ease of public access to work sites, and disruption of community infrastructure and services.

Table 17: Are Construction Best Practices and Pollution Minimization Implemented?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	There is a high level of work site and pollution management; slope stabilization is under way at all work sites; pollution containment and treatment are implemented prior to discharge.
Urban Infrastructure Project	Implementation is not very good due to challenging site conditions (steep slopes and congested urban areas already under development). There are issues with sediment management, slope stability, site drainage, and worker camp conditions.
Road Network Project II	These concerns are clearly specified and fairly well implemented; they mostly relate to slope stabilization.
India	
Bangalore Metro Rail Transit System Project	The two work sites were quite deficient in work site management (management soil and drainage was poor).
North Karnataka Urban Sector Investment Program Tranche III	Implementation is adequate, but sediment management and site drainage are lacking in some areas; however, most of the sites are quite stable.
Assam Urban Infrastructure Investment Program Tranche 1	Construction not yet under way; the worker camp at the water reservoir site is clean and organized so far.
Bihar State Highways II	Implementation is quite good at the highway work sites observed, although there is reference to lack of compliance in discarding road debris. The project management site and worker camp have lingering issues with fuel handling, hazardous materials, and dust and surface water management.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Previous compliance reports indicate lax implementation of what can be considered best practices; poor waste management and poor worker camp conditions have been cited.
Second Small Towns Water Supply and Sanitation Sector Project	Road work seems satisfactory, although there are coordination problems with other road projects. The main work site (the water treatment plant) indicates poor construction practices and lax site management.
Rural Reconstruction and Rehabilitation Sector Development Program	Implementation is technically acceptable for road construction, but somewhat sloppy with construction waste, public safety risk management, and slope stabilization. Apparently, contractors are "lazy" when it comes to implementation of environmental safeguards, and opt to save time and money, knowing that compliance checks are not rigorous.

Source: Authors.

Conservation of physical cultural resources. Physical cultural resources include buildings, monuments, or locations that have religious, social, or cultural value. Such locations are usually identified very early in the project feasibility and design process and excluded, dismantled and moved, or worked around, such that there are no further issues. Provision must also be made for the discovery and preservation of unanticipated physical cultural resources during project preconstruction and construction, for example, the discovery of archaeological items during land clearing and grading. In this case, contingencies for project stoppage must be accommodated until any such discoveries can be assessed and properly handled. In all projects, this criterion was not either not noted or not found to be an issue (Table 20).

Overall assessment: Physical cultural resources have an extremely low profile in all projects examined. This may be because the selected project locations prevented such issues from arising.

Degree of training of responsible entities. Various stakeholders will be involved in the design and implementation of environmental safeguards, ranging from project staff and consultants to contractors and local communities. Depending on their previous experience and skills, some training might be expected, so that the people involved can implement the required safeguards in the correct locations, with the appropriate technical approaches, and in the correct sequence. Different stakeholders will have different starting competencies and different functions in EMP

Table 18: Are Worker Health and Safety Issues Addressed?

Case Study Country	Project Assessments
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	There is a high level of PPE use at all work sites. The work sites are more complex and dangerous, compared to most road and other infrastructure projects.
Urban Infrastructure Project	There is inconsistent use of PPE; worker camp conditions are adequate but could be improved (proper drainage is required and fencing of electricity supply).
Road Network Project II	There is a fairly high worker awareness of work site risks and high level of use of PPE.
India	
Bangalore Metro Rail Transit System Project	There is reasonably good compliance with work site safety requirements.
North Karnataka Urban Sector Investment Program Tranche III	There is very sporadic use of PPE, the worker camp is adequate, and there are some issues with garbage disposal.
Assam Urban Infrastructure Investment Program Tranche 1	Construction is not yet under way.
Bihar State Highways II	Fairly good compliance was observed; there is good use of signage at the main camp.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Previous projects indicate lax standards for worker health and safety.
Second Small Towns Water Supply and Sanitation Sector Project	Use of PPE is inconsistent; work site conditions are poor, with several risks of falls and slides on site.
Rural Reconstruction and Rehabilitation Sector Development Program	Inconsistent use of PPE; community workers have none.

PPE = personal protection equipment.

Source: Authors.

Table 19: Are Health and Safety Issues Related to Local Communities Addressed?

Case Study Country	Project Assessments
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Most work sites are remote from local communities, so there is little interaction.
Urban Infrastructure Project	The issues are not really addressed. Local communities are faced with almost unpassable roads and constant equipment movement, reflecting the close proximity of work sites.
Road Network Project II	This is not really addressed. Work sites on roads are marked but communities have no roadside access in many areas.
India	
Bangalore Metro Rail Transit System Project	The project is negligent in this area. There is too much public access to work sites and little safe integration of vehicles with local traffic. Public complaints relate to road congestion.
North Karnataka Urban Sector Investment Program Tranche III	These issues are not evident; work sites are marked.
Assam Urban Infrastructure Investment Program Tranche 1	Construction is not yet under way.
Bihar State Highways II	There are some issues with difficult public access to village services on both sides of the highway; there was no accommodation of villagers during the construction phase.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Issues are not evident.
Second Small Towns Water Supply and Sanitation Sector Project	Issues are not evident.
Rural Reconstruction and Rehabilitation Sector Development Program	Local community safety risks have not been addressed. Work sites are unmarked.

Source: Authors.

Table 20: Are Physical Cultural Resources Being Conserved?

Case Study Country	Project Assessments
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Non-issue
Urban Infrastructure Project	
Road Network Project II	
India	
Bangalore Metro Rail Transit System Project	Non-issue
North Karnataka Urban Sector Investment Program Tranche III	
Assam Urban Infrastructure Investment Program Tranche 1	
Bihar State Highways II	
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Non-issue
Second Small Towns Water Supply and Sanitation Sector Project	
Rural Reconstruction and Rehabilitation Sector Development Program	

Source: Authors.

implementation, and will therefore require different types of training, defined by technical content and the training methodology. These might range from simple briefings to technical training spanning several days. The project assessments for this criterion are summarized in Table 21.

Overall assessment: Environmental safeguard training has been delivered fairly consistently or is planned to be delivered in the projects in India. There has been less training on environmental safeguards in projects in Nepal, but some specific technical training has been provided. Bhutan projects have the least environmental safeguard training. Training needs to reach stakeholders at different levels, and more attention needs to be given to mitigation design and environmental monitoring.

Use of appropriate manuals and information resources. Correct implementation of environmental safeguards will require access to and use of technical documents, manuals, the EMP itself, and perhaps specific contract covenants, depending on who needs to be informed and what their roles may be. It is often a challenge to secure all the required documents, ensure that they are in local languages and have an appropriate degree of technical content that can be readily understood, and ensure that EMP stakeholders read them and use them appropriately on a regular basis. The project assessments for this criterion are summarized in Table 22.

Overall assessment: Manuals and information sources are not well documented. Bioengineering manuals have been sourced for case study projects in Bhutan and Nepal, but only in a few cases. Worker safety manuals are available in India, but are not mentioned in Bhutan and Nepal.

Relevance and effectiveness of national standards and guidelines. All projects must be responsive to and compliant with national and subnational laws, regulations, guidelines, and standards that pertain to environmental quality. The EMP usually lists these and shows how the project addresses each of them. In some cases, the EMP may only note that compliance will occur, without elaborating further. Depending on the country, national and subnational standards and guidelines may be up to international standards. There may be gaps in the standards and guidelines; for example, some jurisdictions may lack certain air or water quality or emission standards. The project assessments for this criterion are summarized in Table 23.

Table 21: To What Degree Are Responsible Entities Trained?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Training consists only of safety briefings for contractors, and regular consultations between the Dagachhu Hydro Power Corporation and the contractors on various issues.
Urban Infrastructure Project	No training has been provided to government staff or consultants.
Road Network Project II	Department of Roads staff have been given training in environmentally friendly road construction.
India	
Bangalore Metro Rail Transit System Project	Little training appears to have been done.
North Karnataka Urban Sector Investment Program Tranche III	The level of training is good. Project staff have been trained in environmental safeguards, and contractors have been trained by the project. However, there is a need for technical training in site management and environmental monitoring.
Assam Urban Infrastructure Investment Program Tranche 1	Training has not yet undertaken (not all government staff are in place); but a good environmental management training plan has been prepared covering all relevant topics. Contractors will require training in site management and environmental monitoring from time to time. This is planned for project implementation unit staff and design and supervision consultant.
Bihar State Highways II	Project staff have been trained several times over the last 3 years. Training was then provided to the supervision consultants, and more is planned.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Little, if any, training has been provided.
Second Small Towns Water Supply and Sanitation Sector Project	Some training has been provided to staff and consultants, but only on contract management and solid waste management. Village development committees have not been trained in environmental safeguards.
Rural Reconstruction and Rehabilitation Sector Development Program	No specific training has been given in design and implementation of environmental safeguards but the project coordination unit has provided some environmental management awareness-raising to district office staff. District office staff have received training in bioengineering (slope stabilization).

Source: Authors.

Overall assessment: There is very little reference to national environmental standards and guidelines in Nepal. There is explicit reference to national and state requirements in half the India case study projects. Bhutan has stringent rules and enforcement of national standards and guidelines.

Accessibility and adequacy of environmental management plan and monitoring documents. While the EMP and project monitoring documents may be available online, they may not be accessible at all project sites, and they may not be summarized to serve properly as day-to-day operations manuals. To successfully pass through ADB review and loan approval, they will in theory have been fully compliant with all ADB safeguard requirements. However, translation of all proposed EMP actions into site-specific tasks may continue to be a challenge. Monitoring reports are to be produced by the project staff and associated consultants and ADB will have its own project monitoring assessment reports. These should be actionable documents that note residual problems and required remedies, and then track the progress in addressing the problems. They therefore need to be accessible to the people responsible for implementing all required remedies. The project assessments for this criterion are summarized in Table 24.

Overall assessment: This criterion is quite inconsistent within each country. EMPs are usually available, but monitoring reports are not always available. Monitoring reports are inconsistent in their degree of analysis, reflecting different issues, locations, and monitoring methodologies within projects.

Table 22: Are Appropriate Manuals and Information Resources Used?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	The project has accessed the Druk Green Power Corporation environmental safeguards manual, but this lacks specific implementation instructions.
Urban Infrastructure Project	This is not mentioned or evident in documents provided.
Road Network Project II	This only relates to environmentally friendly road construction materials, which are being used quite effectively for bioengineering.
India	
Bangalore Metro Rail Transit System Project	This remains obscure.
North Karnataka Urban Sector Investment Program Tranche III	There is reference to the environmental management plan and using the contractor checklist.
Assam Urban Infrastructure Investment Program Tranche 1	A safety manual will be produced, addressing work site conditions. Documents produced so far have almost no photographs.
Bihar State Highways II	Various brochures and worker safety manuals are available, but there is no reference to environmental safeguards.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	This is not evident in the documents provided.
Second Small Towns Water Supply and Sanitation Sector Project	The project has a high degree of documentation (for project approval) but no manuals.
Rural Reconstruction and Rehabilitation Sector Development Program	There is only reference to the training materials for bioengineering.

Source: Authors.

Clarity of respective environmental safeguard roles. Usually, the EMP will be clear on the roles of project staff, government agencies, contractors, and consultants with respect to design of site-specific details and implementation of EMP tasks. Lack of clarity of roles can lead to gaps in EMP implementation or improper sequencing of tasks, which might compromise the quality and effectiveness of specific actions. Roles are often summarized in a table or Gantt chart, in which all actions are listed for agencies, contractors, consultants, and other actors. The project assessments for this criterion are summarized in Table 25.

Overall assessment: There is good clarity of environmental safeguard roles in all three countries. However, not all positions are adequately filled, and there is an issue with front-loading of effort, such that monitoring and follow-up during project construction and operation sometimes lapse.

Contract specifications for environmental safeguards. Most project environmental impacts are associated with the project construction phase, and can be properly addressed by the project agency and the hired contractors. It is most effective to clarify all environmental safeguards associated with the construction phase in the contracts of each contractor, and to ensure that omissions, negligence, penalties, required remedies, reporting, and due process are very clear in the contracts. However, this is still not standard practice. The project assessments for this criterion are summarized in Table 26.

Overall assessment: Most projects have had the EMP included in the bid documents, but there is inconsistent information regarding specific contractor requirements for environmental safeguards. Nepal seems to have clear contractor requirements for safeguards in all three projects. This is less clear in the case study projects in Bhutan and India.

Adequate staffing of environmental safeguard roles. Even though respective EMP roles may have been defined, there may still be an issue with inadequate staffing for each environmental safeguard action or task. In some cases, this might reflect lack of understanding of the effort needed for each task, or assignment of

Table 23: Are National Standards and Guidelines Relevant and Effective?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	These are prominent in the EMP requirements and in monitoring reports. The NEC monitors fairly regularly and has issued all environmental clearances up to the end of 2013.
Urban Infrastructure Project	NEC standards are mentioned and are perceived to be strict, and contractors are obliged to be familiar and compliant with NEC standards. There is a perception that forest clearances are the main issues for the NEC.
Road Network Project II	These are noted, and environmental clearances are up-to-date and posted at all management offices on-site. The NEC has validated the clearances at least once.
India	
Bangalore Metro Rail Transit System Project	There is no explicit reference to national or state standards or any enforcement actions.
North Karnataka Urban Sector Investment Program Tranche III	There is no explicit reference to these.
Assam Urban Infrastructure Investment Program Tranche 1	These are listed in the IEE, and compliance is assumed; all laws and regulations have been reviewed to determine project-specific compliance requirements (good). Training is expected to include a review of national and state laws and regulations.
Bihar State Highways II	These are clearly noted. The project tries to exceed some state guidelines (for example, the project planting rate exceeds state guidelines).
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Transmission lines in Nepal do not require IEEs or EIAs, so there is little reference to any regulations.
Second Small Towns Water Supply and Sanitation Sector Project	These are not mentioned.
Rural Reconstruction and Rehabilitation Sector Development Program	These are not explicitly reconciled to the subprojects.

EIA = environmental impact assessment, EMP = environmental management plan, IEE = initial environmental examination, NEC = National Environment Commission.

Source: Authors.

safeguard tasks to an individual who has other duties that may be considered to take precedence. The project assessments for this criterion are summarized in Table 27.

Overall assessment: In Bhutan, two of the three projects have adequate staffing, but effort is front-loaded for project approvals, rather than longer-term monitoring. In India, engineers have been assigned to handle safeguards, but are preoccupied with construction progress; two projects are currently understaffed. In Nepal, projects are somewhat underresourced and, as in Bhutan, effort is front-loaded to EIA and EMP approvals.

Adequate funding for all required measures. In theory, all required environmental safeguard tasks will have been fully considered for human effort, equipment, and time requirements in order to be properly designed and effectively implemented. Considerable experience with environmental safeguard implementation is required to properly anticipate all requirements. Sometimes the environmental safeguard requirements are expected to be taken up in the project construction budget, rather than being budgeted as a separate EMP line item. In any case, the key objective in developing appropriate budgets for required environmental safeguards is ensuring that they will be effectively implemented. Otherwise, there is a significant risk that contractors will not make the time or provide the funds to properly design and implement all required environmental safeguards. The project assessments for this criterion are summarized in Table 28.

Overall assessment: It is unclear whether funding is adequate for environmental mitigation measures. In some cases, items are budgeted, but contractors take short-cuts to save time and money. In Bhutan, there are specific line items for environmental safeguard measures. These are defined during the preparation of the EMP.

Table 24: Are Environmental Management Plan and Monitoring Documents Accessible and Adequate?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	All documents are accessible and informative (quarterly monitoring reports).
Urban Infrastructure Project	The EMP is not accessible to project staff or consultants. Compliance monitoring reports (mostly checklists) are provided.
Road Network Project II	Documents are easily accessible; however, monitoring documents are short on critical analysis of issues and solutions.
India	
Bangalore Metro Rail Transit System Project	The EMP is accessible and adequate. Monitoring reports are not provided, and are not accessible. They are not available on the Bangalore Metro Rail Company website either.
North Karnataka Urban Sector Investment Program Tranche III	These are fully accessible on the website.
Assam Urban Infrastructure Investment Program Tranche 1	EMP needs to be made site-specific. There is no significant construction, so there is little detail in the first monitoring report. The EMP is short on details that address the potential erosion issues evident at selected sites.
Bihar State Highways II	Documents are all accessible and well organized. Monitoring data are all logged in each quarterly report. The EMP is not site-specific.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Documents are accessible and adequate. Compliance monitoring reports do indicate issues and status of compliance (good).
Second Small Towns Water Supply and Sanitation Sector Project	Documents are accessible; but monitoring reports are lacking information on degree of implementation of the EMP.
Rural Reconstruction and Rehabilitation Sector Development Program	Documents are accessible. Monitoring reports are inconsistent and include mostly visual details (they come from the district office, and there is not much project coordination unit involvement).

EMP = environmental management plan.

Source: Authors.

Technical adequacy of environmental mitigation measures. Environmental mitigation measures are intended to address site-specific risks and prevent or solve environmental problems associated with a particular project. They can be seen as technical challenges that require a comprehensive understanding of biology, ecology, and engineering, and other disciplines. As such, all environmental mitigation measures need to be well-founded in previous experience and the related scientific literature, and properly described in workable technical terms. If this is not done, implementation may be neither obvious nor straightforward, and as a result the required mitigation measures may not be implemented properly, or may be neglected entirely. The project assessments for this criterion are summarized in Table 29.

Overall assessment: Environmental mitigation measures in the projects examined India are not very challenging technically. Slope management in Nepal is technically challenging and not adequately addressed. The most challenging slope conditions are experienced in Bhutan, and most projects have adequate technical approaches. Only one project seems to be deficient in applying such measures in a densely populated urban area, and some slopes exceed any possible intervention.

Site-specific adjustments to environmental management plans. Even if environmental safeguard actions are described in detail, it is not possible to complete detailed design and set a work sequence for each safeguard action until the site-specific factors have been properly examined and assessed. All environmental safeguard actions will therefore require "ground truthing" to ensure that the proposed actions will work at each site. The project assessments for this criterion are summarized in Table 30.

Table 25: Are Environmental Safeguard Roles Clearly Specified?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	These are very contained with the Environment Unit of the Dagachhu Hydro Power Corporation, with two officers and three support staff on-site most of the time.
Urban Infrastructure Project	DSCs almost exclusively handle environmental safeguards oversight (the Ministry of Works and Human Settlement has a very limited role). Site engineers are supposed to undertake daily monitoring of site activities and conditions, but defer to DSCs for advice.
Road Network Project II	Roles are very clear from ministry level, down to supervision consultants and individual contractors.
India	
Bangalore Metro Rail Transit System Project	Contractors are responsible for site health, safety, and environmental issues. The Bangalore Metro Rail Corporation seemed to be in flux, with no clear assumption of environmental management responsibilities.
North Karnataka Urban Sector Investment Program Tranche III	The roles of the project staff and contractors are quite clear.
Assam Urban Infrastructure Investment Program Tranche 1	The roles of the contractor, DSC, and project implementation unit are fairly clear.
Bihar State Highways II	Roles are very clear and well defined for all management levels from the Bihar State Road Development Corporation to project implementation units and contractors.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Roles are clear enough, as contractors are responsible for EMP implementation and the Environmental and Social Studies Department within the Nepal Electricity Authority sets up a project-based environmental management unit (two or three staff on-site daily).
Second Small Towns Water Supply and Sanitation Sector Project	Roles are extremely clear but are not being filled adequately (especially Kathmandu project staff involvement).
Rural Reconstruction and Rehabilitation Sector Development Program	Roles are very clear; but there are lapses in the implementation of roles—most of the effort goes into IEE and EMP approval, then tapers significantly.

DSC = design supervision consultant, EIA = environmental impact assessment, EMP = environmental management plan, IEE = initial environmental examination.

Source: Authors.

Overall assessment: India and Nepal projects appear to lack site-specific measures. The EMP is not obviously adjusted to location-specific requirements. Bhutan projects have all had mitigation measures adjusted to reflect specific site challenges.

Appropriate work sequencing to create effective mitigation. Each environmental safeguard action, once calibrated to the site where it will be implemented, will need to be reexpressed as a sequence of work or tasks. These tasks must be coordinated with all other environmental mitigation measures in the vicinity because of the likelihood of interactions between the mitigation measures All mitigation measures also need to be properly linked to the project construction work and the opportunities and requirements presented by specific construction work. For example, slope stabilization should be developed before there is slope cutting or road work, not than after it. The project assessments for this criterion are summarized in Table 31.

Overall assessment: Some projects in India and Nepal reflect poor sequencing of tasks and actions to preclude site-specific environmental issues. This is much less evident in Bhutan, where site conditions cannot be ignored. In Bhutan, only one of three projects struggled with site work sequences, and resulting drainage and erosion issues.

Effective use of monitoring and safeguard tracking systems. In addition to monitoring reports and other documents that are intended to track environmental issues and their eventual resolution, there is increasing interest in digital tracking systems that provide an accessible, timely, and comprehensive view of the issues and the solutions. The project assessments for this criterion are summarized in Table 32.

Table 26: Are Environmental Safeguards Specified in Contractor Contracts?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	It is not clear whether these are explicit in individual contracts, but the Dagachhu Hydro Power Corporation is required to provide oversight for EMP implementation by all contractors.
Urban Infrastructure Project	The EMP is included in the bid documents, but it is not clear that there are specific environmental conditions in the various construction contracts. Required environmental clearances are made known to contractors.
Road Network Project II	These are clearly spelled out in the bid documents and become part of the contract. Contractors are obliged to update their subproject-specific EMPs on a monthly basis.
India	
Bangalore Metro Rail Transit System Project	These are noted, based on the EMP.
North Karnataka Urban Sector Investment Program Tranche III	Contracts do not include specific provisions for environmental safeguards.
Assam Urban Infrastructure Investment Program Tranche 1	The IEE and EMP are appended to bid documents, but contractors not explicitly required to respond to environmental management needs.
Bihar State Highways II	The EMP is included in the construction contract. Contractors seem quite familiar with EMP requirements, but there is a need for site-specific validation of EMP requirements.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	The EMP is part of the contract for construction companies.
Second Small Towns Water Supply and Sanitation Sector Project	These are clearly spelled out as contract requirements.
Rural Reconstruction and Rehabilitation Sector Development Program	These are spelled out in the construction contracts. Contractors are supposed to clarify their environmental management arrangements. Site-specific technical needs seem to be lacking in contract details.

EMP = environmental management plan, IEE = initial environmental examination.

Source: Authors.

Overall assessment: Most reports do record compliance, or lack of it, but in India there is still lagging compliance with required environmental safeguards. All reports are intended to track deficiencies and the status of "fixes" (this is evident for two of three projects in Nepal). There is more consistent recording of issues, fixes, and the status of compliance in project progress reports in Bhutan.

Effective relationship between monitoring and compliance. Environmental safeguard monitoring is intended to determine whether there is project compliance with the required regulations and proposed environmental mitigation measures, and whether there are any unintended environmental effects due to the project that need to be remedied. Systematic and comprehensive monitoring is the only effective way to determine if a project is fully compliant with all environmental safeguard requirements. Self-reporting is required and may be informative, but objective third-party monitoring is also required. The project assessments for this criterion are summarized in Table 33.

Overall assessment: Monitoring does not obviously lead to higher compliance rates or accelerated fixes for environmental issues. On the other hand, monitoring does pick up the major compliance infractions, so at least they are logged for future action (smaller infractions may still be slipping through). The challenge remains about how to ensure solutions are implemented quickly and effectively.

Regulatory interventions (modifications and work stoppages). In theory, monitoring by government agencies and observation of infringements or inadequacies related to environmental safeguards should trigger either work stoppages or project modifications to resolve outstanding issues. These are regulatory actions that would be initiated by national or

Table 27: Are Environmental Safeguard Roles Adequately Staffed?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Staffing is adequate in the Dagachhu Hydro Power Corporation. The Environment Unit is based on-site and each contractor is required to assign an engineer for environmental supervision.
Urban Infrastructure Project	The Ministry of Works and Human Settlements is understaffed and unable to handle all the initiatives in the file. Consultants are responsible for environmental safeguards, but most of the effort is front-loaded for EIA and EMP development and approval; there is a significant drop-off of effort thereafter. Municipal environmental divisions are quite weak and lack required skills.
Road Network Project II	Staffing is adequate within the project. The project had a dedicated environmental specialist under the supervision consultants and focal persons within the PMU and contractors. In addition ADB staff and consultants regularly followed up on environmental safeguards during project implementation.
India	
Bangalore Metro Rail Transit System Project	Safeguards unit seems to be understaffed, with project engineers assigned to environmental safeguards, but not handling this with any acuity.
North Karnataka Urban Sector Investment Program Tranche III	Safeguard staffing has been adequate for the project (two staff) and contractors assign engineers to handle daily environmental monitoring (but they are focused mostly on construction progress).
Assam Urban Infrastructure Investment Program Tranche 1	Project management consultants handle the environmental safeguard role (as well as social aspects). There are no government staff yet, so safeguard staffing is underresourced at the moment. There will be an environmental safeguards officer in each project implementation unit.
Bihar State Highways II	Staffing seems adequate at all levels.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Staffing seems adequate within the Environmental and Social Studies Department, but there is no sense of this within the contractors. Contractors are not well-informed about their EMP obligations.
Second Small Towns Water Supply and Sanitation Sector Project	Despite clarity on roles, staff seem to be stretched thin, and there has been little attention to the Baglung subproject. Most effort goes into project approval.
Rural Reconstruction and Rehabilitation Sector Development Program	Staffing is adequate, but effort is front-loaded to handle the IEE and EMP approvals. Most of the work is done by the district office.

EIA = environmental impact assessment, EMP = environmental management plan, IEE = initial environmental examination.
Source: Authors.

subnational environmental agencies. Such regulatory interventions should be reported and included in project documentation sent to ADB. The project assessments for this criterion are summarized in Table 34.

Overall assessment: None of the projects documented any work stoppages due to infractions. There is considerable pressure from government, project staff, and contractors to maintain a fast pace of project construction, so there appear to be some acceptance of lax environmental safeguards. Regulatory authorities in all three countries are understaffed and underresourced and cannot monitor and enforce effectively all the time.

Timeliness of environmental safeguard fixes. Any residual environmental problems, either caused by a project, or evident as a new site condition that was not originally anticipated, would need to be addressed quickly to prevent escalation and further damage to the environmental. Monitoring reports should be clear on what issues have been observed, what the proposed fixes are, and the time line for resolution of the problem, as well as the effectiveness of the solution. The project assessments for this criterion are summarized in Table 35.

Overall assessment: With only two exceptions—one in Bhutan and one in India—identified issues requiring resolution have been addressed slowly, or in some cases not at all.

Degree of engagement of ADB in monitoring and follow-up. ADB is required to undertake diligent review

Table 28: Is Funding Adequate for All Required Measures?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	There appears to be adequate funding, and this has allowed slope stabilization and planting of trees, as well as pollution management.
Urban Infrastructure Project	This is not clear in the documents. Regardless, contractors resist the time and costs involved in proper site environmental management.
Road Network Project – II	Provision is made for the contractor to budget for specific environmental management measures, which is very positive. The National Environment Commission is underfunded.
India	
Bangalore Metro Rail Transit System Project	Contractors are taking shortcuts, mostly to save time, e.g., not washing vehicle wheels.
North Karnataka Urban Sector Investment Program Tranche III	Funding appears to be adequate, but there are very few environmental issues at the project site in any case.
Assam Urban Infrastructure Investment Program (AUIIP) Tranche 1	This is not clear in the data provided.
Bihar State Highways II	This is not clear, but the environmental management plan is part of the contract.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	This is not clear from documents provided. Monitoring by the Environmental and Social Studies Department is underfunded.
Second Small Towns Water Supply and Sanitation Sector Project	This is supposed to be recognized and budgeted accordingly by contractors.
Rural Reconstruction and Rehabilitation Sector Development Program	Contractors are said to have a budget for environmental safeguards, but they still resist spending time and money on such things as construction waste disposal.

Source: Authors.

of all project monitoring reports and to verify the site-specific conditions and the design and implementation of environmental mitigation measures. The results of such monitoring actions are then reported and discussed with the project agency so that any residual issues can be properly addressed. ADB monitoring requires the examination of reports, as well as field visits at appropriate intervals, depending on the project and the nature of risks and residual issues. The project assessments for this criterion are summarized in Table 36.

Overall assessment: ADB has maintained oversight of all the selected projects. The frequency of visits ranges from twice a year to once in 2 years. In all cases, site observations were appropriate and accurate and helped identify issues that needed attention. Some of the issues were addressed and were documented as having been addressed.

Overall conclusion. The comparative analysis indicates an overall acceptable degree of compliance of the ADB projects examined in Bhutan, India, and Nepal with the required steps in the ADB environmental safeguard process. This is especially the case in the early stages of IEE, EIA, and EMP preparation, when there is sufficient staff capacity to ensure proper project design and loan approval. Thereafter, the effectiveness of the environmental safeguard steps starts to decline to a varying degree from country to country and project to project. This drop-off reflects a shift in priorities and new stakeholders, with the government, project staff, contractors, consultants, and local communities assuming most of the safeguard responsibilities. The wide-ranging and variable experience, skills, and capabilities of these stakeholders influence the degree of project compliance with ADB environmental safeguard processes—"administrative" compliance—and the effectiveness of mitigation measures, i.e., the extent to which negative environmental impacts are reduced or prevented at project sites, which is the essence of the environmental safeguard process.

2. Social Safeguards

There are numerous benchmarks for comparisons of social safeguard implementation in the projects examined

Table 29: Are Environmental Mitigation Measures Technically Adequate?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	All mitigation measures appear to be technically robust, including slope stabilization, design of a fish ladder, and road construction and drainage.
Urban Infrastructure Project	Observations at the sites visited suggest that technical requirements are known to the contractors, most of whom are from India and Nepal, but they are either poorly implemented or incorrectly sequenced.
Road Network Project II	Technical adequacy is good; measures are being implemented according to site-specific needs. However, there is still scope for Bhutan-specific research on the most appropriate bioengineering approaches, and a need for regular monitoring of bioengineering effectiveness. Some very steep slopes exceed the application of current technical approaches. Sediment slumps are occurring, knocking down vegetation, and retaining walls cannot be built in steep forest areas. More research is needed on this as well.
India	
Bangalore Metro Rail Transit System Project	Many work site deficiencies reflect time-saving shortcuts rather than technical deficiencies.
North Karnataka Urban Sector Investment Program Tranche III	Basic approaches are used that do not require challenging technical measures.
Assam Urban Infrastructure Investment Program Tranche 1	Measures tend to be generic and do not yet reflect some site-specific challenges, such as erosion.
Bihar State Highways II	Measures are generally adequate for the highway work, but are lagging at the main workers camp and staging area.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Measures seem adequate and appropriate for transmission line installation.
Second Small Towns Water Supply and Sanitation Sector Project	The measures in the environmental management plan are adequate, but implementation is inadequate, especially in relation to slope management.
Rural Reconstruction and Rehabilitation Sector Development Program	Measures are adequate for road construction, but challenged with extreme slopes.

Source: Authors.

in the three countries. The following 11 indicators are indicative of effective social safeguard implementation.

a. Resettlement Plan in Place

A resettlement plan is the mandatory document for resettlement planning. However, a due diligence report is sufficient if the project categorization for social safeguard impacts is C.

In Bhutan, all the projects had a resettlement plan in place. All the projects require clearance from the National Environment Commission (NEC); no project is cleared unless the environmental and social impact assessment, which includes social issues, is approved by the NEC. Independent of ADB's safeguards, Bhutan has its own environmental and social safeguards in place, which are stringent and probably quite consistent with ADB standards.

In Nepal, in the Second Small Towns Water Supply and Sanitation Sector Project, due diligence reports were prepared. The Electricity Transmission Expansion and Supply Improvement Project had only an IEE in place, which referred to land acquisition and resettlement issues. A study of the social information in the IEE indicates that there will be land acquisition and impacts on livelihoods, and that a separate resettlement plan is required for the project.

In India, all the case study projects except the Bangalore Metro Rail Transit System project had a resettlement plan in place. The resettlement plans of the North Karnataka Urban Sector Investment Program and the Bihar State Highways II Project are well documented and the updated resettlement plans were made available on the ADB and project websites. For the Bihar State Highways II Project, full resettlement plans were prepared

Table 30: Do Environmental Management Plans Contain Site-Specific Adjustments?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	All mitigation measures are specific to site conditions.
Urban Infrastructure Project	EMPs have been updated to reflect the latest project design details.
Road Network Project II	These have been done, and contractors update the EMP on a monthly basis, although some of the information entries reflect lack of detailed consideration. There is quite a lot of evidence that information is carried through from earlier reports.
India	
Bangalore Metro Rail Transit System Project	This is not apparent. The muck disposal site seems to have been ignored altogether.
North Karnataka Urban Sector Investment Program Tranche III	There were no clear innovations or unique features at the project sites.
Assam Urban Infrastructure Investment Program Tranche 1	This has not yet been done.
Bihar State Highways II	This is not evident. Site-specific plans are not clear.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	It is not clear that this is ever done.
Second Small Towns Water Supply and Sanitation Sector Project	These are supposed to be done by the contractor, but the documents were not provided to the executing agency, and there was little evidence of site-specific measures.
Rural Reconstruction and Rehabilitation Sector Development Program	This is not done.

EMP = environmental management plan.

Source: Authors.

Table 31: Is Work Sequencing Appropriate for Effective Mitigation?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Sequencing appears appropriate to preclude any significant negative environmental effects. Some developing slope instability issues at one location have been quickly addressed.
Urban Infrastructure Project	Work sequencing at both observed sites was suboptimal, with lingering issues related to soil management, drainage, and storage of construction materials.
Road Network Project II	Work to address slope stabilization issues was quite well sequenced.
India	
Bangalore Metro Rail Transit System Project	This is not an obvious feature of the project. For example, the muck disposal site does not show any sequenced terracing and rehabilitation.
North Karnataka Urban Sector Investment Program Tranche III	This is not obvious, but the sites are quite flat with little risk of erosion, so do not present many challenging mitigation measures.
Assam Urban Infrastructure Investment Program Tranche 1	This is not evident, due to lack of construction.
Bihar State Highways II	This can be improved, as road shoulder protection against erosion is neglected until the final stage of hardtopping. Gully erosion has started in some areas.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	This is not evident in any of the documents. The Environmental and Social Studies Department suggested that contractors are not very concerned about environmental issues. A lack of compliance was evident in previous projects.
Second Small Towns Water Supply and Sanitation Sector Project	This is not evident at the water treatment plant site at Baglung, where fencing was inadequate and slope stability measures were lacking.
Rural Reconstruction and Rehabilitation Sector Development Program	This was not evident. Slope failures could have been prevented if slope stabilization measures had been installed early in the road-upgrading process, and local road drainage work has been left to the end of the sequence.

Source: Authors.

Table 32: Is There Effective Use of Monitoring and Safeguard Tracking Systems?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	Progress reports clearly indicate developing issues, recommendations from the National Environment Commission, and their implementation (e.g., dust management and the fish ladder).
Urban Infrastructure Project	While the safeguard monitoring tracking system is in place, the compliance checklists indicate full compliance, which is not the case.
Road Network Project II	Monitoring and safeguard tracking is in place and apparently used; some identified infractions are getting addressed, although slowly; and the monthly reporting process is appropriate to catch issues.
India	
Bangalore Metro Rail Transit System Project	This was not apparent, as many deficiencies were observed.
North Karnataka Urban Sector Investment Program Tranche III	This was quite good, as subsequent reports note how the previous issues have been addressed.
Assam Urban Infrastructure Investment Program Tranche 1	This is not yet implemented.
Bihar State Highways II	The reports are set up for accountability, but there is still lagging compliance with mitigation measures.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	The compliance monitoring reports are adequate, and noncompliance is clearly logged.
Second Small Towns Water Supply and Sanitation Sector Project	This does not appear to be working. Few details are provided in the compliance report.
Rural Reconstruction and Rehabilitation Sector Development Program	This is not evident as a compliance enhancing measure, due to lax follow-up. However, compliance is tracked.

Source: Authors.

Table 33: Is There an Effective Relationship between Monitoring and Compliance?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	There is a good link between the monitoring, accountability for solutions, and compliance. 90% of air and water quality results are within Bhutan standards.
Urban Infrastructure Project	Lack of compliance indicates that monitoring is not being used effectively to address environmental issues in a timely manner. There is very little difference in the compliance monitoring reports between November 2012 and May 2013.
Road Network Project II	Monitoring reports are picking up issues, such as burning of garbage in the work zone, taking boulders from the river (which has persisted until now, due to the lack of a suitable quarry), dust not being properly managed, worker safety (not full use of personal protection equipment), and conditions in worker camps. There has been slow resolution of some of these issues.
India	
Bangalore Metro Rail Transit System Project	This is unclear.
North Karnataka Urban Sector Investment Program Tranche III	There is a good relationship.
Assam Urban Infrastructure Investment Program Tranche 1	There is no construction as yet.
Bihar State Highways II	The link is set up, but ADB monitoring that raised issues has still not led to fixes at the main staging area.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Monitoring does not necessarily lead to improved compliance; some reports suggest a poor rate of fixes.
Second Small Towns Water Supply and Sanitation Sector Project	There has been little outside monitoring by staff from Kathmandu, and compliance with the EMP contract requirements is quite low.
Rural Reconstruction and Rehabilitation Sector Development Program	Some ADB and PCU concerns were eventually addressed, but the process was slow.

ADB = Asian Development Bank, EMP = environmental management plan, PCU = project coordination unit.

Source: Authors.

Table 34: Are Regulatory Interventions Triggered?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	No public complaints nor government-instituted stoppages have been reported. Some National Environment Commission recommendations have been implemented.
Urban Infrastructure Project	
Road Network Project II	
India	
Bangalore Metro Rail Transit System Project	None have been cited. Institutional presence of regulatory bodies is quite weak, i.e., State Department of Environment.
North Karnataka Urban Sector Investment Program Tranche III	
Assam Urban Infrastructure Investment Program Tranche 1	
Bihar State Highways II	
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	None have been cited. The regulatory entity for environmental management, i.e., Ministry of Science, Technology and Environment (MoSTE), is mostly disengaged from projects being implemented.
Second Small Towns Water Supply and Sanitation Sector Project	
Rural Reconstruction and Rehabilitation Sector Development Program	

Source: Authors.

Table 35: Are Environmental Safeguard Problems Resolved Quickly?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	There is fairly quick implementation of required fixes. This is documented in progress reports.
Urban Infrastructure Project	Observed issues in Chamgang, as noted by the Ministry of Works and Human Settlements, have still not been fixed. Follow-up is very slow.
Road Network Project II	Fixes appear to be implemented slowly. Some worker camp conditions need to be addressed, and fuel storage is not properly set up.
India	
Bangalore Metro Rail Transit System Project	It is not clear what has been noted as an infraction and fixed.
North Karnataka Urban Sector Investment Program Tranche III	The few infractions that were noted seem to have been addressed in a timely manner.
Assam Urban Infrastructure Investment Program Tranche 1	There is no construction as yet.
Bihar State Highways II	Some of the issues at the main workers camp have been fixed and others are still lagging, so there is an inconsistent approach to fixes.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	Required fixes are being undertaken at a very slow rate.
Second Small Towns Water Supply and Sanitation Sector Project	No fixes are evident, but they are needed.
Rural Reconstruction and Rehabilitation Sector Development Program	Fixes are implemented slowly. Local communities have some concerns about lack of contractor cleanup.

Source: Authors.

Table 36: Is ADB's Engagement in Monitoring and Follow-Up Adequate?

Case Study Country	Project Assessment
Bhutan	
Dagachhu Hydropower Development Subproject: Green Power Development Project	There have been several ADB compliance missions and a recent compliance check (for additional funding). No particular issues were noted because there is a high EMP compliance rate and the National Environment Commission clearances are up-to-date.
Urban Infrastructure Project	There is one ADB loan review mission on record.
Road Network Project II	Regular review missions have been conducted during implementation—at least one review mission per year; special external monitoring missions by SATC staff consultant have also been conducted.
India	
Bangalore Metro Rail Transit System Project	Previous ADB missions have picked up on worker safety, and some of these issues appear to have been addressed.
North Karnataka Urban Sector Investment Program Tranche III	ADB has visited the project sites and observed issues with the worker camp. Some of these issues have now been addressed.
Assam Urban Infrastructure Investment Program Tranche 1	There is no construction as yet.
Bihar State Highways II	ADB has undertaken several compliance assessment missions. Some fixes have been implemented.
Nepal	
Electricity Transmission Expansion and Supply Improvement Project	ADB conducts compliance checks twice a year. These help put some environmental issues back on the agenda.
Second Small Towns Water Supply and Sanitation Sector Project	One ADB safeguard mission to the project sites.
Rural Reconstruction and Rehabilitation Sector Development Program	ADB visited the subproject in 2011. Quarterly progress reports are received. Some ADB concerns were addressed after the site visit.

ADB = Asian Development Bank, EMP = environmental management plan.

Source: Authors.

for all the subprojects. The subprojects are all considered Category A for involuntary resettlement. For the Assam Urban Infrastructure Investment Program, the documents are available on the ADB website, but the information in all the resettlement plans needs to be updated.

b. Project Entitlements Well-Defined

In Bhutan, the case study projects were all Category B projects, with minimal resettlement impacts. Under the Urban Infrastructure Project, compensation was paid for all other assets acquired, such as fruit trees, etc. In the Road Network Project II, the affected people were assisted, and compensated for the loss of structures and other assets, according to the project entitlement matrix. Nontitleholders have also been addressed in the project's entitlement matrix.

In India, resettlement and rehabilitation entitlements are well defined in all of the case study projects. However, all the resettlement frameworks and entitlement matrices for projects that are approved after 1 January 2014 will have to be revised, taking into account the provisions of the Right to Fair Treatment and Compensation in Land Acquisition, Rehabilitation and Resettlement Act, 2013. For the Bihar State Highways II Project, the legal framework and principles adopted for addressing resettlement issues in the project have been guided by the existing legislation and policies of the Government of India, the Government of Bihar, and ADB, all incorporated in the resettlement framework adopted for the project. For the Assam Urban Infrastructure Investment Program Tranche 1, the resettlement framework and entitlements are under revision. The North Karnataka Urban Sector Investment Program has a well-defined resettlement policy framework based on ADB guidelines.

The Nepal Second Small Towns Water Supply and Sanitation Sector Project has a resettlement framework, and the entitlements provided are in line with the ADB SPS. In the Rural Reconstruction and Rehabilitation Sector Development Program, the entitlement matrix provides for any impacts on project-affected families;

however, for the Electricity Supply and Transmission Improvement Project, there was no framework or entitlement matrix. The IEE covered provisions for compensation for likely project impacts. Based on the type of loan, a resettlement framework may or may not be required, but an entitlement matrix listing the compensation, assistance, and benefits to project-affected people must be in place.

c. Land Acquisition and Payment at Replacement Cost

In Bhutan, the Land Act, 2007 governs land acquisition in all projects. To help make land available, land pooling rules were developed during the Urban Infrastructure Project. The government is reluctant to give the replacement cost of land, as defined by ADB. However, in the Road Network Project II, the replacement cost was given as the difference between the compensation determined by the *dzongkhag* and that determined by the block development committees, paid as a productive asset grant in kind by the project. Under land pooling, there is no concept of paying replacement cost. Under the Dagachhu Hydropower Development Project, compensation for acquisition is governed by the Guidelines for Land Acquisition and Satshab Allotment, 2005 and the Land Compensation Rate, 1996.

Overall, 72.5% of Bhutan is under forest cover and there is a national mandate to maintain at least 60% of the country under forest. Agriculture is the mainstay of the people, with 79% of the population engaged directly in agriculture;[32] but the area available for arable agriculture is less than 8%. Limited usable land resources have led to land use competition between agriculture, urban, and industrial development. Urbanization is also causing major land constraints. Urban expansion is vying for land with agriculture for the most productive areas, which are usually on the relatively flat and fertile valley bottoms. Infrastructure development in urban and peri-urban areas has led to increased land use conversion. Thus, there is high demand for land and limited supply. With limited land, there are strict laws governing ownership of land. The Land Act, 2007 allows for Bhutanese to own land anywhere in the country, but there are certain ceilings. A maximum of 25 acres is allowed for a family, organizations, and other entities , consisting of one or more land categories of wetland, dryland, residential, industrial, commercial, institutional, recreational, and cash crop lands. The minimum ceiling is 5 acres, which is the minimum agricultural landholding required for sustaining an average family. Due to limited land availability, the government is probably not in a position to offer alternative land of equal value as defined in the ADB SPS. However, the Land Act, 2007 says that the *Druk Gyalpo* can grant *kidu* (resettlement land).

In India, land acquisition in the case study projects has been done under the Land Acquisition Act, 1894. However, replacement cost has been calculated by various methods. Whether this translates into payments that will enable the affected people to buy similar land in the vicinity cannot be commented upon, as no detailed studies were conducted with payment recipients. In the North Karnataka Urban Sector Investment Program, a district-level valuation committee was formed to determine the market price of land. In the Assam Urban Infrastructure Investment Program, land valuation was done by the Deputy Commissioner's office; there was no separate committee for calculation of replacement cost.

In the Bihar State Highways II Project, acquisition is being done according to the Land Acquisition Act, 1894, as amended in 1984, along with an additional provision under the Bihar Land Acquisition Resettlement and Rehabilitation Policy, 2007. Cash compensation or land for land, where available, at replacement cost was determined according to the 2007 policy. Thus, each executing agency has its own method of computing replacement cost. With the Right to Fair Treatment and Compensation in Land Acquisition, Rehabilitation and Resettlement Act, 2013, there will be no contradictions in the calculation of the replacement cost of land. It is hoped that this will close the gap between country legislation and ADB's safeguard requirements.

In Nepal, land acquisition for the Second Small Towns Water Supply and Sanitation Sector Project, is done under the Land Acquisition Act 2034, 1977. In this project, land must be provided encumbrance-free before a project intervention. The water user and sanitation

[32] Government of Bhutan, Ministry of Agriculture. 2005. *Sustainable Land Management Project, Social Assessment*. Thimphu.

committee (WUSC) identifies land and purchases it, if necessary, and then hands it over to the project. If land is bought from private parties, then compensation must be paid at replacement cost according to the resettlement framework. This needs to be reflected in the resettlement framework, indicating that in case land was purchased prior to the project and replacement cost was not paid, then it must be paid in retroactively. The Land Acquisition and Compensation Fixation Committee determines the cost of the land. This is used in the land value negotiations between the WUSC and plot owner as per the Land Acquisition Act, 1977. Where the price determined by the committee is lower than the market value, then the WUSC is required to pay the difference. In cases of disputes, such as where land records are not updated, or where the affected people are unable to produce the necessary documents, then the compensation amount will be deposited with the chief district officer until the case is resolved. The WUSC can also acquire land for the project through negotiation with the landowner on a willing buyer–willing seller basis or through donation.

In the Rural Reconstruction and Rehabilitation Sector Development Program, land for the project is based on donation. Those unwilling to donate land can go through the land acquisition process of the Government of Nepal. Land can only be donated by people who do not fall below the poverty line as a result. The short resettlement plan developed for the road project states that all involuntary land acquisition (other than exceptional voluntary land donation) will be compensated at replacement cost and affected people will be assisted so that their economic and social future would generally be as favorable as it would have been in the absence of the project. In the Electricity Transmission Expansion and Supply Improvement Project, land acquisition has been done under the Land Acquisition Act 2034, 1977. According to discussions with the PMUs, the act provides for replacement cost; however, whether the amount of compensation can be used to purchase the same type of land within the vicinity has not been verified.

d. Time Taken to Acquire Land

In all the countries, the time taken for land acquisition is long and tedious. One of the main reasons for project delays is the difficulty of obtaining encumbrance-free land. This is exacerbated by a lack of land records and agreement on compensation amounts. In most cases, transfer or migration of land records to the entitled person has not been done. In case of land donation, the records must be in order to transfer to the project. Delays also occur when people go to court because the compensation paid was not based on market rates.

e. Institutional Setup

In Bhutan, the institutional structures are well staffed in all the projects. The projects are well managed and the safeguard specialists are in place. There is a high degree of accountability for project delivery at all levels and all the officers were well aware of ADB's social safeguard requirements. All projects are implemented by the PMU, PIU, and PMC. No NGOs are involved in implementation.

In India, the best institutional setup is in the Bihar State Highways II Project. All the levels are staffed with the necessary social safeguard officers. The North Karnataka Urban Sector Investment Program is also functioning well. In both cases, there is a good level of awareness of safeguard requirements at all levels of the project, from the PMU to the NGOs. The Assam Urban Infrastructure Investment Program has no PIUs and the PMU has 2 or 3 officers who are handling administration and finance. There are no safeguard counterparts from the client's side.

In Nepal, the institutional structure is well staffed for the Second Small Towns Water Supply and Sanitation Sector Project and the Rural Reconstruction and Rehabilitation Sector Development Program, with the necessary social safeguard specialists in place. However, in the Electricity Transmission Expansion and Supply Improvement Project, the role of the social safeguard specialist in the PMU is not clear.

f. Role of Nongovernment and Community-Based Organizations

In projects that are in remote areas, especially in the mountain regions of Bhutan and Nepal and in the interior areas in India, monitoring by the executing agency and ADB is infrequent, leaving NGOs and community-based organizations (CBOs) without much guidance. By the time the executing agency or ADB visits are made and corrective measures are taken, much of the resettlement and rehabilitation (R&R) implementation has already

happened. The NGOs find it challenging to make corrections mid-implementation.

Among the projects examined in India, discussions were held with NGOs for the Bihar State Highways II Project and the North Karnataka Urban Sector Investment Program. In the case of the Bihar State Highways II Project, discussions were held with the three implementing NGOs (CRADLE, SUGUM, and Study Point Samiti), which cover various road sections of the project. All the NGOs have been mobilized and are implementing the resettlement plans. They verify the affected people, prepare the micro plan, and ensure that all assistance and compensation is provided. They also ensure that affected people are trained, based on the livelihood restoration action plan. Discussions indicated that the NGOs are functioning well; no major issues were cited by the PIUs or PMU regarding their operations.

The North Karnataka Urban Sector Investment Program covers 25 towns (as a series of individual subprojects, one of which was examined in detail) and is implemented by the four divisional offices. Six NGOs are involved in implementing the resettlement plan at the divisional level. There is one apex NGO, based in Hubli-Dharwad, which all the NGOs report to. A social development officer is appointed at each of the divisions to monitor the NGOs' work. All the key staff of the divisional NGOs receive training from the apex NGO.

Based on the discussions with the NGOs in the two projects, the following points were observed:

(i) NGOs implement the resettlement plan and function as a link between the PIUs and the affected people and communities.
(ii) The tasks of NGOs relate to resettlement and rehabilitation of affected people as outlined in the resettlement plan. Some of the tasks include verification of affected people, preparation of micro plans, consulting with affected people and communities, issuing identity cards, relocating affected people, ensuring that training programs for livelihood generation schemes are provided and coordinating them, resolving grievances, and ensuring all assistance and compensation has been paid before civil works begin.
(iii) The NGOs all report to the PIUs and the PMU. They are managed by the social development officers from the PIU.

The challenges NGOs experience in these projects can be manifold and are comparable with other projects in India. They include the following:

(i) Even with NGO intervention, tasks, such as land acquisition, get delayed or not completed at all, despite the completion of land acquisition being the NGO's mandate. NGOs need to be more organized and systematic when they come into the picture. They have to have the complete list of project-affected people at the start of implementation. This is where land acquisition plans and entitlement matrices identifying titled holders need to be completed prior to NGO fieldwork. From these, the NGOs come up with identity cards and micro plans that list the benefits each individual should receive, based on the legal status of the affected person. If land acquisition plans are not completed at the start of NGO mobilization, the NGOs cannot perform their mandate, and this leads to delays.
(ii) Work delays lead to payment delays for NGOs, as the payments are linked to certain deliverables and milestones. This may make it difficult for the NGO to maintain the project staff required for implementation. NGOs, in most cases, do not have financial resources to sustain themselves for long periods without payment.
(iii) NGOs have to conduct awareness-raising programs for AIDS, road safety, etc., but no separate budgetary provisions are made for these tasks even though they require human resources and funds.
(iv) PMUs need to establish faster approval procedures for micro plans so as not to delay implementation.

NGOs also expressed the need for more training on social safeguard implementation, along with the PIUs, so that resettlement implementation issues can be resolved more efficiently. Given that NGOs do not have adequate resources to provide regular training to all their staff, training programs by the PIU and PMU would greatly enhance the capacity of their staff.

In Nepal, discussions were held with CBOs. For the Second Small Towns Water Supply and Sanitation Sector Project, discussions were held with the WUSCs in the project in Baglung. For the Rural Reconstruction and Rehabilitation Sector Development Program, discussions were held with the village infrastructure construction committees (VICCCs) in the Chyamasingh-Amaldol Nala road subproject in Bhaktapur district. The VICCC includes representatives of political parties; NGOs active in the area; and women, Dalits, and other disadvantaged groups.

Based on the discussions with CBOs, the following can be concluded:

(i) CBOs are well networked in the community, as are community members themselves. Thus, mobilizing the people for the project is done very effectively. For example, in the Rural Reconstruction and Rehabilitation Sector Development Program, where the road is built on land donated by local people, the role of the CBOs is very important in convincing people to donate the land for the greater good of the community. To reduce any conflict in implementation, awareness about the project should be undertaken from the initial stages.

(ii) There is a lot of focus on the overall benefit to the community, as the projects are in the mountain regions, where there is little or no access to infrastructure. But the CBO's work can also extend beyond the project, as was seen in Baglung, where they were able to get a bridge constructed for the village upstream.

(iii) The constraint to the CBOs was lack of adequate knowledge of the project requirements, such as what the safeguards protecting the interests of the people are, how the project will be maintained, and what the tariffs will be. Training of these groups would strengthen considerably the ability of the CBOs to deliver tasks more efficiently. The CBOs asked for training to take place in their towns and villages, so that more people could participate. It was seen that a few community leaders were playing the most active role, and more people could get involved if a larger group received training.

(iv) The risk in a CBO is that a few who have some knowledge of the project claim to have all the information and dominate all proceedings related to the project. There is also a tendency for political affiliations to get in the way of proper project implementation. However, the project authorities are responsible for ensuring that the right information on the project is disseminated through training of the CBOs.

(v) Sufficient budget should be kept for community development work that may not be directly related to the project but will encourage the community to facilitate the work of the project. Additional community work, such as bridges in the village of Baglung, can benefit the community at large. However, there are not enough resources for such activities, per discussion with CBOs. Hence, the allocation of separate resources in the budget for community development would greatly help to complement the project's direct benefits.

g. Livelihood Restoration

The ADB safeguard policy emphasizes restoring the livelihoods of the affected people. The affected person's livelihood should not fall below preproject levels. Therefore, all attempts must be made by the project to enhance livelihoods. Some of the issues related to livelihood restoration include finding the correct option for the affected person, lack of willingness to change, ensuring that the individual has completed the training and received adequate support to start an alternative livelihood. The success of livelihood restoration also depends on budget availability and the efficiency of the NGO in seeing through the process of livelihood restoration. In projects that have a smaller number of social impacts, this is easier to monitor and implement.

In Bhutan, the Urban Infrastructure Project provides for skills development training and assistance in locating alternative jobs. In the Road Network Project II, people directly affected by the project will be prioritized by the Department of Roads for reemployment during the implementation of the project and a one-time economic rehabilitation grant equal to 3 months' wages per household for vulnerable groups. In the Dagachhu Hydropower Development Project, those losing land have been provided with job opportunities in project construction and other related works. Those who lost trees will be compensated for one cropping season.

Providing jobs directly restores livelihoods. However, when training is provided, the results are not obvious unless it is put to immediate use.

In Nepal, income restoration measures under the Second Small Towns Water Supply and Sanitation Sector Project included lump-sum assistance and training. In the Rural Reconstruction and Rehabilitation Sector Development Program, a compensation determination committee (CDC) has been formed, chaired by the chief district officer, for the provision of compensatory costs, where necessary. Affected people receive livelihood enhancement skills training to restore their livelihoods. Based on observations made during the field visit, livelihood training has been successfully done, with training provided for women in various professions, such as beautician courses and tailoring. In the Electricity Transmission Expansion and Supply Improvement Project, the IEE mentions a training program for improved agricultural methods for the affected people; however, it could not be verified.

For the case study projects in India, the livelihood restoration programs achieved good results (as is the case with the Bihar State Highways II Project) due to the synergy between the NGO and the PMU and PIU. One of the tasks of the NGO is to link those losing their livelihood to income generation programs. The site visit discussions with affected people who have been trained indicated that these people have undergone a 5-day training program for agriculture (learning the *sri vidhi* [system of rice intensification method of paddy cultivation] technique), beekeeping, and making candles, potato chips, *agarbatti* [incense sticks], and perfumes. Those trained indicated that the training was relevant, as they could use some of the training to explore business options, aided by the money they had received as compensation or assistance. They particularly noted the agriculture training, which they could apply on their remaining lands. Rs4,000 is provided for livelihood training in the R&R budget for each affected person. However, based on discussions with the NGO, this amount needs to be revised up.

h. Grievance Redress

In India, a grievance redress committee (GRC) is not in place for the Assam Urban Infrastructure Investment Program, although the project is ready for implementation. The proposal for setting up the GRC is with the executing agency, but no action has been taken yet because of a lack of seriousness in meeting the safeguard requirements. In the North Karnataka Urban Sector Investment Program and the Bihar State Highways II Project, the GRC is well established and functioning. The mechanism is seen to be working well for these two projects, due to the effectiveness of the NGOs and a well-staffed and capable PMU and PIU. The GRC is well documented in the Bihar State Highways II Project, in terms of recording and redress.

In Bhutan, grievance redress is well organized within the projects and linked to the overall grievance process in the country. Most of the grievances are resolved locally. In Nepal, all case study projects have a GRC in place, except for the Electricity Transmission Expansion and Supply Improvement Project, which did not appear to have any project-specific system in place. A GRC requires a good system to track the grievances and how they have been addressed, document them, and record the redress process. In most projects in India, the GRCs do not meet, especially at the higher levels. The most common reason given is that there are no grievances, or all grievances are settled at the level of the NGO or PIU. However, the structure of GRC and the members involved need to be reconsidered. Some of the members, such as the deputy commissioners, have very little time to devote to GRCs.

i. Adequate Budget

From the case study projects, such as the Assam Urban Infrastructure Investment Program, compensation payment is incomplete due to a lack of adequate funding. For the solid waste management site at Dibrugarh, only 75% of the compensation has been paid; the remaining amount has not been paid due to a lack of counterpart funding. For any project to be successful, adequate budgetary allocation is necessary. In the Bihar State Highways II Project, only 80% of the compensation has been paid for land acquisition in the greenfield project; the remainder will be paid after verification of documents. There must also be sufficient provision for livelihood restoration training and purchase of income-generating assets. These costs should reflect the real costs of assets, such as the purchase of a sewing machine, computer, or cattle; it should not be a token amount. Sufficient budget should be kept for community development work that may not be directly related to the project but will encourage the community to facilitate the work of the project.

j. Training and Capacity Development

The training of all stakeholders is necessary for efficient social safeguard implementation. Training must be provided from the level of the executing agency to the project community. Training and capacity development activities could help gauge the level of understanding of the safeguard requirements of all involved.

In Bhutan, in the Urban Infrastructure Project, officers at various levels have received training, for example on gender issues, but they have not been trained on social safeguards. Since Bhutan has a small community of consultants working in the safeguards area, it will be easy to train them. None of the consultants who have worked on the resettlement plans and their implementation have received any social safeguard training. It was also suggested that the municipality committee members should be trained. Training of community members is not needed.

There is a very good grasp of the overall requirements of ADB SPS in the North Karnataka Urban Sector Investment Program and the Bihar State Highways II Project. However, safeguard training could further cover social implementation issues, especially for the NGOs, and the staff of the urban local body (ULB). Several training programs for the project officers have been held at the State Institute for Urban Development at Mysore. ADB holds regular training courses there on various subjects, which can be used as a platform for further safeguard training.

In the Assam Urban Infrastructure Investment Program, there will be a need for regular training on social safeguard awareness, as and when the officers are mobilized.

In the Bihar State Highways II Project, ADB has provided training on social safeguards to the manager technical, and the general managers and their deputies since March 2010. Ongoing in-house training is conducted regularly by the CSCs for the NGOs. However, training of NGOs and safeguard experts at the construction supervision level must be enhanced. The PMU suggested that the social safeguard training program should involve all the levels from the PMU to the NGOs, so that issues can be discussed across all levels in a transparent manner.

Strategically located at the Environmental and Social Studies Department (ESSD), the NEA training center caters to all NEA officers, PMU, NGOs, and project stakeholders. In turn, however, the ESSD social safeguard staff will require training from ADB on the preparation and implementation of the resettlement plans.

In the Second Small Towns Water Supply and Sanitation Project, capacity development needs to trickle down to all levels—the social safeguard staff at the PMO, the design and supervision consultants, the project implementation support unit (PISU), WUSCs, NGOs, and officers from the district development committee and ULBs. Training must be given especially to the WUSCs. These people at the grassroots, who ultimately own and run the project, need to be made aware of the mandatory safeguard systems. Similarly, in the Rural Reconstruction and Rehabilitation Sector Development Program, community members asked for training, as they feel it will improve the quality of the project. Any capacity development for the community would result in a better project output. It was mentioned during the various discussions that there are too few trained people at the district and/or implementation level.

k. Monitoring

Monitoring of social safeguard performance is varied. In the Bihar State Highways II Project, the NGOs submit regular monitoring reports to the PIUs, CSCs, and headquarters. The quarterly and annual monitoring reports are all available on the Bihar State Road Development Corporation's website. All progress reports are monitored by the PMU and followed up regularly. The Assam Urban Infrastructure Investment Program Tranche 1 PMC prepares quarterly progress reports and semiannual monitoring reports. However, at the time of the study, implementation of various subprojects was yet to start. The North Karnataka Urban Sector Investment Program also has its monitoring systems in place. The ULB does the internal monitoring of projects. NGOs submit quarterly monitoring reports to the PMU. Monitoring reports are also available on the website.

In general, based on the project documentation that was examined, monitoring reports are available. The reports indicate that ADB feedback is very important in streamlining social safeguard implementation and making

it more effective. Follow-up on the monitoring reports is also essential. In most cases, feedback from ADB remains with the executing agency, and there is not always evidence of corrective actions.

D. Common Constraints in Institutional Capacity for Safeguards Management

When the full spectrum of safeguards management is considered—design, implementation, and tracking—it can be seen that the expected end result, effective management of environmental and social risks associated with infrastructure projects, depends on four things:

- the capacity of the project designers and the safeguard implementers—i.e., their knowledge, skills, available time, institutional processes, and available resources;
- challenges related to the technical complexity of the project;
- the vulnerability and sensitivity of the receiving environment and the local communities that may be exposed to the project; and
- the proximity of managers to the project site.

Unquestionably, project technicalities and the project setting are the main factors determining the relative ease or complexity of safeguard design and implementation, but the institutional capacity must be able to effectively handle the safeguard requirements of both simple and complex projects. The most complex projects probably have the greatest environmental and social risks, but this can never be an excuse for deficient safeguard system design and implementation. In the end, the measure of safeguard effectiveness, for any kind of project, is a real reduction in or prevention of negative environmental and social impacts at the project site, to a level that is acceptable to all stakeholders.

The national consultations, case studies, and the comparative analysis described in the previous sections helped to clarify the weaknesses in the ADB safeguard implementation process and the associated institutional capacity needs in Bhutan, India, and Nepal. These are further examined and are used to inform the development of remedies that address both the technical aspects of safeguard design and implementation and the capacity to effectively implement the safeguard system, to make the process more meaningful.

1. Capacity Needs for Environmental Safeguard Design, Implementation, and Tracking

As has already been noted, there is considerable variability in the degree of effective implementation and tracking of environmental safeguards between the three countries and between the projects. Of the three countries, Bhutan and India have the most evolved environmental safeguard systems, in terms of environmental safeguard awareness and technical competency within all delivery layers of projects, and the most comprehensive system of documentation. During the study period, the team did not witness any safeguard tracking system managed by the PMUs or PIUs. Reporting of safeguard performance is done on a quarterly, semiannual, or annual basis, depending on the project safeguard category. ADB's South Asia Department has commenced development of a tracking system which, when implemented, will result in real-time tracking of safeguard performance and will also act as a repository for all safeguard-related information. In the meantime, the Nepal Resident Mission is trialing a tracking system that is exemplary in its clarity and potential for near-real time status checks. The India Resident Mission also operates a tracking system which, while useful, is not fully instructive on the information inputs required and is not accessible to everyone. Bhutan does not have a resident mission and all projects are managed from Manila.

There are at least five layers in the development and implementation of environmental safeguards:

- ADB staff (in resident missions and headquarters) and specialists, who provide guidance on the design of environmental safeguards, in conjunction with government proponent agencies and their consultants, and who also monitor and assess compliance;
- the executing and implementing agencies (the borrowers)—who may have agency-based

environmental safeguard units, or may create safeguard positions within the PMUs—report to ADB on safeguard implementation; the PMUs may be based at project sites or may be remote from project sites, which creates challenges;
- Supervising consultants, who often act as a bridge between the PMUs and the contractors, providing a safeguard monitoring and reporting function to the PMUs;
- the contractors, who usually assign site engineers to handle environmental safeguards, often as a secondary task; contractors are supposed to self-monitor and report on environmental safeguard compliance on a daily, weekly, or monthly basis; and
- local communities, which may assume the default position of being the on-site safeguard monitors, often without adequate skills, and knowledge of the EMP, and lacking in reporting tools and competencies.

Each layer has its own implementation challenges. Furthermore, the functional links between the layers can be blurred, which often causes one agency or entity to rely on others for safeguard implementation and monitoring without having explicitly transferred responsibilities. Individuals and staff in all safeguard entities in all countries would benefit from more training on the technical aspects of environmental safeguard approaches for specific issues and locations, as well as the most suitable monitoring approaches to ensure compliance.

All countries' environmental management legislation and regulations capture the notion of environmental safeguards. This is seen simply as the mitigation measures required to reduce negative environmental impacts to an acceptable level. While the legislation and regulations guide the EIA process and associated documents and may be adequate to meet ADB criteria for project review and approval, subsequent follow-up on compliance is not rigorous. Some government agencies may assume that ADB projects "look after themselves," because they often have more stringent standards and more adequate budgets for environmental safeguards, whereas the government environment departments tend to be short of staff and financial resources. Consequently, the environmental regulatory authorities—especially those in India and Nepal—tend to not be very engaged with environmental safeguard monitoring once environmental clearances have been issued.

In contrast, the government is very involved in the required forest clearances for infrastructure projects, and these can become tied up in bureaucracy for 2–3 years in some cases, leading many agencies and projects to avoid forest areas as much as possible. Forest clearances usually generate revenues for the forest department in the three countries examined, so negotiations over tree replacement rates and replanting sites can be protracted, and in some cases tree planting funds transferred to the forest department are not tracked and followed up by the implementing agencies. Implementing agencies in all three countries mentioned that forest clearances are one of the main bureaucratic hurdles in the environmental safeguard process.

Although certain locations and project activities present very specific requirements for technically sound environmental safeguards, many projects lack site-specific environmental management plans because of a tendency to borrow details from previous project documents. This is especially problematic in challenging project sites, such as where vegetation clearance and sediment and erosion controls are needed. As a consequence, project staff, supervising consultants, contractors, and local communities do not fully understand what is required to prevent or solve environmental issues at the project site.

The following approaches are suggested:

- More rigorous development of the EMP, with a cross-checking of environmental issues and impacts for all combinations of activities and locations;
- verification of these specific details by ADB, the project staff, and the community, so that the key stakeholders in the environmental management process have the same understanding and expectations;
- inclusion of the site-specific environmental safeguards in contract covenants with the contractors, and review of all such details with the project staff, contractor, and local communities before construction;

- a project walk-through, in which problem areas—either in the project footprint or along project alignments—are observed and flagged for specific environmental safeguard treatment before land clearing and construction starts; and
- more explicit attention to the process for establishing offsets (compensation for habitat lost to a specific project), especially the responsibilities of stakeholders in selecting and establishing the offset.

To support these approaches, the project bid documents could be more explicit about the need for contractors to define site-specific environmental safeguards in their proposals, and to provide technical approaches, as well as adequate budgets that reflect the additional materials and labor required to properly implement them. Otherwise, contractors will continue to avoid the time and expense of environmental safeguard implementation—a problem observed especially in India and Nepal—and the project staff and supervising consultants will not have much recourse if specific environmental safeguard measures and budgets are unclear. Furthermore, although most of the contractors are small and might find it difficult to engage a dedicated environmental officer, this capacity needs to be developed and made available to such contractors. Leaving the site engineer responsible for environmental safeguards may conflict with getting the engineering job done quickly and maintaining the contractor's margins.

A more subtle issue that was apparent at several project sites is the link between work activity sequences and environmental issues. This is especially the case with highway projects. For example, retaining walls were built long after the road had been cut through a hill or mountain; the need to revegetate road shoulders was not addressed until long after the road had been constructed, leaving soil exposed to erosion; and the management of hazardous materials, dust, and standing water at the worker camps was left until near the completion of the project.

The local community needs to be made more aware of environmental safeguards and their options for reducing construction-phase annoyances. At most, there was a sense that construction noise, dust, and poor site drainage are the prices to be paid for eventual improved services and infrastructure. Most of this reflects the fact that these communities are exposed to such annoyances in their daily lives. However, if they are made aware of the environmental safeguard options, they could prevent incremental negative effects in their living and working areas. Local community committees can be the focal point for such awareness raising, given the monitoring and oversight role that is often placed on them in community-driven projects. The local community committees also need to be more closely associated with the environmental safeguard planning process and have full access to all the documents, including the contract covenants that articulate implementation of environmental safeguards. Most community committees that were consulted felt disadvantaged in not knowing all the project details, the requirements for environmental safeguards, and the technical options in specific situations. They were, therefore, in a weak position to challenge contractors or project staff on perceived deficiencies. Some do not get much support from government regulatory agencies.

Work site safety needs attention. Most projects are quite lax in ensuring that workers use all the available personal protection equipment, especially the wearing of helmets and safety boots. While this problem appears to reflect the workers' choice, it nonetheless puts them at risk, and therefore compliance needs to be improved. Many work sites also lack adequate barriers and safety warnings for the public. This was especially evident in India and Nepal, but was less of an issue in Bhutan where many project work sites are remote from local communities.

Environmental safeguard monitoring and reporting also need attention. Many lapses in the environmental monitoring protocol were evident at project sites.[33] Most contractors are obliged to self-monitor and -report, and tend to repeat daily observations on environmental safeguard implementation without much variability in observations or comments. Such behavior was evident in some of the contractor reports in all three countries, and suggests that they are ticking the boxes to be seen to be

[33] Deficiencies included sampling at inappropriate times and in inappropriate locations (e.g., sampling for dust after a rainfall, and sampling too close to or too far away from the source of noise, such as heavy equipment).

compliant with environmental safeguard requirements. Furthermore, in several cases environmental infractions noted by supervising consultants were not fixed, or were fixed too slowly, and were subsequently cited as outstanding issues in quarterly reports. A time frame for fixing environmental problems would avoid this situation.

Sediment sampling is not undertaken at most project work sites, yet a significant amount of soil is excavated and moved. There are instances where tunneled muck sediments are being disposed of without checking for contamination. Monitoring variables therefore need to be examined and adjusted according to project-specific activities and conditions, and monitoring procedures need to be more rigorously applied and documented, including details of the location and timing of samples, which greatly influence the monitoring results.

For some projects, the remoteness of many of the subproject locations discourages frequent site monitoring and resources are inadequate for diligent monitoring. More local community involvement in monitoring environmental safeguard implementation could increase the effectiveness and efficiency of such monitoring. For this to happen, local community members should be properly trained and are aware of the key environmental issues that need attention.

There is scope for more research and innovation into technical approaches to addressing challenging environmental problems at work sites. For example, much more can be done with the application and configuration of local vegetation to enhance slope stability. This is especially true in Bhutan, where slope stabilization using vegetation is based on the experience in Nepal.

ADB resident missions track environmental safeguard implementation inconsistently. In some cases, tracking is done by officers in the resident missions according to their own methodologies and formats (as is evident in India). In other cases, there is a more systematic and comprehensive environmental safeguard tracking system in which various attributes are tracked to give a safeguard compliance score. In all cases, however, the tracking system requires accurate and timely inputs from the project work sites, and this can be the weak link in the environmental safeguard accountability system, no matter how it is set up. If the ADB officers do not visit the sites very often, and the contractor, supervising consultant, and project safeguard reports are not very accurate, the tracking system will not yield useful information.

There is a need to overhaul the way project-specific environmental safeguard requirements are documented, from location-specific safeguard design to contractor review processes and sign-off, safeguard implementation effectiveness, and implementation of remedies to lingering environmental issues. This safeguard tracking system needs to be established and housed both at ADB headquarters and in the resident missions, and readable from both locations, with provision for easy access to all documents as uploadable attachments. The system needs to include some technical assessment of the fixes that may have been required to address lingering environmental issues, not just the fact that they were implemented. In other words, it is important to also learn as much as possible about the effectiveness of the technical aspects of mitigation measures. The experience with the trial safeguard tracking system in Nepal can be examined to inform the suggested improvements, which would focus mostly on a digital monitoring system.

2. Capacity Needs for Social Safeguard Design, Implementation, and Tracking

Effective delivery of a project depends on the institutional capacity of the proponent. While the three countries have different policies and legislation on resettlement and land acquisition, and some project-specific differences are evident in individual countries, the constraints on institutional capacity for social safeguards are similar.

The officers and staff of the different projects examined in this study have been trained to various extents in social safeguard planning, design, and implementation. However, this can only be translated into actions and results on the ground if the safeguard officers responsible for the projects are more empowered. The training of individuals and groups must result in better delivery of social safeguards to ensure that nontitleholders are compensated, a proper grievance redress mechanism is established for cases where there are stakeholder grievances, and project design is improved, to minimize

project impacts on land and structures. The capacity needs of the various stakeholders responsible for project social safeguards are described in the following paragraphs.

a. Executing Agency or Project Authority

The executing agency is primarily responsible for the delivery of the project. In all three countries, executing agency staff are aware of most of the technical and engineering requirements of the project, but need a clearer understanding of ADB's social safeguard principles, especially with regard to nontitleholders, vulnerable groups, consultation processes, and grievance redress mechanisms. It has been observed that executing agency officers seldom attend training programs for social safeguards, mainly due to lack of time.

There are several deficiencies in the social safeguard capacities of executing agencies, including (i) inadequate skills to address safeguards due to lack of knowledge in dealing with social safeguard implementation requirements (including the need to take all the stakeholders into confidence and have detailed consultations with them, and to understand the review mechanisms for monitoring social safeguard performance); and (ii) inadequate commitment of human resources for social safeguards.

Executing agencies are often not ready to implement a project when the loan is approved. Thus, after project implementation begins, PMUs and PIUs still need to be established and staffed, as in the case of the Assam Urban Infrastructure Investment Program; and resettlement plans still need to be prepared, as in the case of the Electricity Transmission Expansion and Supply Improvement Project. The biggest challenge for all executing agencies is compiling land acquisition plans before the resettlement plans are prepared.[34]

Capacity-building programs for executing agencies need to focus on planning, implementation, and managing the social safeguard components in a timely and efficient manner. Capacity development has become all the more important because some of the executing agencies do not have enough experience in handling ADB-funded projects (this was most evident in Nepal, in the case of the Electricity Transmission Expansion and Supply Improvement Project, and in India, in the case of the Assam Urban Infrastructure Investment Program).

In most cases, officers trained in social safeguards cannot implement them because of political and policy constraints, or because the areas are already built up. For example, ADB's safeguard principles state that temporary impacts due to a project will be compensated. This can prove difficult to implement in cities with densely populated commercial areas such as Bangalore or New Delhi. If water pipelines are being laid, business operations and access will be disturbed; however, executing agencies find it difficult to estimate the compensation required for all the shops along the project alignment, as books of accounts need to be examined. In framing the resettlement framework and entitlement matrix for a project, these issues need to be discussed; otherwise, the executing agency will frame a resettlement framework and entitlement matrix that it will be unable to implement.

Due to the larger number of ADB-funded projects in India, compared to Nepal and Bhutan, and the many states involved, capacity development of executing agencies there can be an overwhelming task. A further difficulty for project implementation in India is the frequent transfer of officers, and the resulting discontinuation of institutional memory.

b. Project Management Offices or Units

Fully staffed PMUs or PMOs and the involvement of project authorities from the initial stages of project preparation through project implementation create ownership and commitment. The PMUs coordinate work between the executing agencies and the PIUs. In all projects in Bhutan, there was a high level of involvement by the PMU. In Nepal, this commitment was missing in at least the Electricity Transmission Expansion and Supply Improvement Project. In India, the Bihar State Highways II Project showcased an excellent involvement of the PMU in the project, while the Assam Urban Infrastructure

[34] Land acquisition plans are required to estimate the extent of land to be acquired and to estimate the number of people and families likely to be impacted, due to land acquisition required for a project. The land acquisition process is also lengthy, and is one of the main causes of project delays, due to nonavailability of encumbrance-free land at the start of project construction.

Investment Program was at the other end of the spectrum, with no social safeguards officers.

In most of the projects, PMUs are unable to deal with all social safeguard issues, especially those involving nontitleholders, due mostly to the lack of understanding of the resettlement framework and entitlement matrix that had been agreed upon by the executing agency and ADB. In some PMUs, especially in India, the officers are deputized from other departments. Frequent transfers jeopardize the effectiveness of training imparted at this level. Furthermore, every PMU is project-specific, so training must be given for each project. This is a challenge, especially in India, due to the size and number of PMUs involved. Dedicated social safeguards personnel do not remain in place throughout the project period, leading to limited retention of institutional knowledge. However, in the Bihar State Highways II Project, the PMU social safeguards officer has been holding the post for the past 5 years, which is very rare. This is largely because the chief executive officer of the department has ensured that transfers are limited. Projects such as the North Karnataka Urban Sector Investment Program, which involves a nodal urban development agency for urban projects in Karnataka, do not have dedicated social safeguards officers as permanent staff.

In Nepal, in the Electricity Transmission Expansion and Supply Improvement Project, the Environmental and Social Studies Department (ESSD) of the Nepal Electricity Authority (NEA) is responsible for conducting social and environmental safeguards studies. There are full-time safeguard staff at the ESSD. The EIA of the Dumre–Damauli project proposed that staff from the ESSD are included in the Dumre–Damauli environmental management unit (EMU) to monitor the construction phase of the project. The ESSD is a good platform to ensure that social safeguard requirements are complied with. However, interaction between the NEA and the ESSD needs to be strengthened, especially if the officers of the ESSD are to be part of the PMU. The idea is good, but operational issues need to be streamlined to make the ESSD's inputs useful. It was also noted that the ESSD social safeguard officer did not have any training on ADB safeguard requirements.

The PMOs of the projects in Bhutan have consultants dealing with social safeguards. However, their inputs are intermittent, depending on the project's requirements. Any capacity development in Bhutan will therefore need to include the consultants.

c. Project Implementation Units

The PIUs deal directly with implementation issues. The degree of social safeguard capacity varied from project to project and in the three countries that were studied. Projects such as the Bangalore Metro Rail Transit System Project do not have any PIU in the institutional setup, while in others, such as the Assam Urban Infrastructure Investment Program, the PIU is yet to be established, even though civil works have already started. The Bihar State Highways II Project, on the other hand, has a well-established PIU. In some cases, engineers from line departments take care of social safeguards; therefore, there is a need to train all the PIU officers, especially those that could potentially be responsible for social safeguard implementation, to sensitize them to the social safeguard implications of their projects.

d. Design Consultants

The design consultants are primarily responsible for mitigating resettlement and land acquisition impacts through good project design. All options for minimizing impacts must be looked at during the design phase. This requires good coordination between the social and engineering design teams to avoid social problems during project implementation. For example, in the Assam Urban Infrastructure Investment Program, two of the subproject sites have yet to be finalized; at one site, it was realized that there is a problem with nontitleholders, so an alternative option is being looked at. If these issues had been addressed early in the project cycle, the project would not have been delayed. The project sites also need to be identified after due consultation with the community and the executing agency in the initial stages of the project.

The design consultants, in most cases, are also responsible for preparing the social safeguard documents. If impacts are not correctly assessed and documented in the resettlement plan, they will ultimately show up during implementation, leading to delays while they are surveyed and mitigated.

The design consultants need to be trained in resettlement plan and indigenous people plan preparation so that

the social safeguard documentation is clear and the implementation thereafter is more effective.

e. Nongovernment Organizations and Community-Based Organizations

The NGOs and CBOs are a link between the PIU and the community. They verify the details regarding affected people and prepare the micro plan, and ensure that all assistance and compensation is provided. They also ensure that affected people are trained according to their choice of livelihood and skill levels. The constraints faced by NGOs and CBOs are as follows:

(i) NGO staff have very little exposure to social safeguard training, even though they will implement the resettlement plan.
(ii) NGOs do not have adequate resources to provide regular training to their own staff.
(iii) When the NGOs are mobilized, tasks such as land acquisition are often not completed, yet most of the NGO work becomes meaningful only on completion of land acquisition. The schedule and the work of the NGOs is disrupted, leading to delays. Work delays lead to payment delays, as the payments are linked to deliverables and milestones. Without payment, the NGOs cannot sustain human resources in the field for their core activities.
(iv) NGOs have asked for the PIU and NGO for the same project to be trained together on social safeguard implementation so that resettlement implementation issues can be properly resolved.
(v) In projects in remote areas, especially in the mountain regions of Bhutan and Nepal and the interior areas in India, monitoring by the executing agency and ADB can be infrequent, and NGOs and CBOs are left without much guidance from the head offices. By the time the executing agency and ADB visits are made and corrective measures undertaken, much of the R&R implementation has already happened. The NGOs find it challenging to change course mid-implementation.
(vi) CBOs lack adequate knowledge about the social safeguard aspects of the project. The CBOs should have detailed information on the project requirements in terms of impacts on local communities and the compensation or benefits that people will receive for losses. They also need to have information on the social safeguard process requirements, including the need for consultations and processes for addressing grievances. Training for these groups will greatly strengthen the ability of the CBOs to deliver their mandates more efficiently and effectively. The CBOs voiced the need for training to take place in their towns and villages, so that as many people as possible could participate. In some cases, it was seen that a few community leaders who were politically dominant were playing an active role. Getting more local people involved and informed would help to counter political influences.
(vii) There is also a risk that a few CBO members who have some knowledge of the project will claim to have all the required information, and may dominate all proceedings related to the project. There is also a tendency for political affiliations to interfere with proper implementation of the project. In such cases, it is likely that those with political influence will get the project implementation work and the corresponding financial benefits, while others are overlooked. The project authorities must ensure that the appropriate and correct project information is disseminated through CBO training so that people or groups with specific political affiliations do not benefit.
(viii) CBOs lack of funds for the functioning of the organization and for undertaking any additional community work that can be beneficial to the larger community beyond the direct project beneficiaries, such as for building the bridge at Lekkhani village in Baglung, which guaranteed the community cooperation needed to implement the project. Thus, it is necessary to consider how to allocate separate resources in project and local government budgets for broader community development that can help avoid obstruction of the project and subsequent delays.

In conclusion, well-trained NGOs and CBOs are necessary for successful implementation of resettlement plans. Furthermore, NGOs and CBOs must be paid on time and adequately trained by the PIU and PMU. Summaries of the institutional setup and training needs by project and country are in Tables 37–39.

Table 37: Institutional Setup and Training Needs in Case Study Projects in Bhutan

Indicators	Urban Infrastructure Project	Road Network Project II	Dagachhu Hydropower Development Project
Institutional Setup			
Project management unit (PMU) staffed with social safeguard officer	In place	In place, under the project management office	A commissioner for resettlement for the project has been appointed. The resettlement commissioner for this project is the *Dasho Dzongdag* (chief administrator) of Dagana Dzongkhag (district administration). The resettlement activities are carried out under his directions and guidance.
Project management committee (PMC) staffed with social safeguard officer	...	In place	...
Project implementation unit staffed with social safeguard officer	In place	In place	...
Nongovernment organization (NGO) in place for implementation	The PMU, with the support of the PMC, is implementing the project. There is no NGO.	Not applicable for the project. The *dzongkhag* or *dungkhag* (subdistrict administration) will be responsible for implementing the resettlement and rehabilitation activities.	The *dzongkhag* resettlement committee is responsible for implementation of the resettlement plan.
Capacity Building and Training			
Specific social safeguard training	The officers have had exposure to training on gender, but not specifically on the Asian Development Bank's social safeguard requirements.	There has been no specific training on social safeguards for the officers.	There has been no specific training on social safeguards for the officers.

... = not applicable.
Source: Authors.

The institutional structures are well staffed in all the projects. The projects are well managed and the safeguard specialists are in place. There is a high degree of accountability for project delivery at all levels, and all the officers were well aware of ADB's social safeguard requirements. All projects are implemented by the PMU, PIU, or PMC. There are no NGOs involved in implementation. There is a need for specific social safeguard training for the staff handling ADB projects. There are 42 approved projects, so future capacity development for safeguard officers and specialists at all levels can help in the implementation process.

The best institutional setup can be seen in the Bihar State Highways II Project, with all the levels being staffed with the necessary social safeguard officers. The North Karnataka Urban Sector Investment Program is also functioning well. In both of these projects, there is a good level of awareness of safeguard requirements at all levels of the project, from the PMU to the NGO. The Assam Urban Infrastructure Investment Program has no PIUs, and the PMU has two or three officers who are handling administration and finance. The Bangalore Metro Rail Transit System Project has no separate officer for social safeguards. Capacity development programs have been taking place for the different levels in the Bihar State Highways II Project and the North Karnataka Urban Sector Investment Program. As a result, there is a very good level of understanding of the overall requirements of the ADB safeguard requirement in these projects. In the Assam Urban Infrastructure Investment Program, there will be a need for regular training for social safeguard awareness as and when the officers are mobilized. For the Bangalore Metro Rail Transit System Project, there has been no specific training conducted on the ADB safeguard requirements.

Table 38: Institutional Setup and Training Needs in Case Study Projects in India

Indicators	Bangalore Metro Rail Transit System Project	North Karnataka Urban Sector Investment Program	Assam Urban Infrastructure Investment Program	Bihar State Highways II Project
Institutional Setup				
Project management unit (PMU) staffed with social safeguard officer	None	In place	None	In place
Project management committee (PMC) staffed with social safeguard officer	None	In place	In place	In place
Project implementation unit (PIU) staffed with social safeguard officer	None	In place	None	In place
Nongovernment organization (NGO) in place for implementation	None	In place, and doing effective work on awareness and training.	None	In place, providing excellent support for implementation.
Capacity Building and Training				
Specific social safeguard training	There is no training on social safeguard.	Regular training is being given at all levels for social safeguards.	No training is being given on social safeguards. There are no officers to train the PMU, PIU, or NGO.	Social safeguard training has been given by the Asian Development Bank to various officers since March 2010 (also to the manager technical, and the general managers and their deputies).

Source: Authors.

The Second Small Towns Water Supply and Sanitation Sector Project and the Rural Reconstruction and Rehabilitation Sector Development Program are well-staffed with the necessary social safeguard specialist in place. However, in the Electricity Transmission Expansion and Supply Improvement Project, there is no clarity on the role of the social safeguard specialist within the PIU or PMU. Capacity development is required for all the project staff. In the Second Small Towns Water Supply and Sanitation Sector Project, the WUC also indicated that training at the grassroots level will help the implementation of the project.

3. Summary of Common Capacity Constraints

The common capacity constraints can be summarized as follows:

- In most cases, the specified social safeguard officers are not in place within the project institutional setup.
- Officers are transferred frequently, leading to problems in efficient project implementation.
- Social safeguards capacity-building programs have been held, but this is not done systematically. In many cases, those implementing safeguards do not receive training. A training schedule with appropriate content on social safeguards should be developed, maintained, and disseminated among project units. Lack of such a systematic approach may waste time and resources.
- Sometimes, officers who need training cannot attend training, due to lack of time, interest, or not being identified for the opportunity.
- NGOs and CBOs, who are the pillars of successful project implementation, have very little access to training opportunities.
- Social safeguard training should be ongoing, rather than a one-time activity, especially when staff permanency cannot be guaranteed.
- The social safeguard knowledge is not institutionalized within a project due to frequent staff transfers.
- Projects in remote areas generally do not receive sufficient guidance and suffer a syndrome of "out

Table 39: Institutional Setup and Training Needs in Case Study Projects in Nepal

Indicators	Second Small Towns Water Supply and Sanitation Sector Project	Rural Reconstruction and Rehabilitation Sector Development Program	Electricity Transmission Expansion and Supply Improvement Project
Institutional Setup			
Project management unit (PMU) or project management office (PMO) staffed with social safeguard officer	There are three social development officers deputized for the project.	The PMU full-time staff include one senior resettlement officer and one sociologist.	There are no designated social safeguard officers.
Project management committee (PMC) and/or design and supervision consultant staffed with social safeguard officer	There are five social development specialists looking after 21 towns.	...	...
Project implementation unit (PIU) staffed with social safeguard officer	The project implementation support unit (PISU) is within the town project office (TPO). The PISU has two social mobilizers.	District implementation support team is in place, with a safeguard specialist.	...
Nongovernment organization (NGO) in place for implementation	There are 21 NGOs for the project and all have been mobilized; the towns also have a water users committee.	Village infrastructure construction coordination committee will be responsible for implementing the resettlement plan.	Implementation is done by the executing agency.
Capacity Building and Training			
Specific social safeguard training	There is a need for social safeguard training at all levels. There are several social safeguard specialists working in remote areas of the country who need to be trained on the safeguard requirements of the Asian Development Bank (ADB). Training also must be provided at the level of water users committee and NGOs. Training has been given by the project management committee (PMC) and some basic training on documentation has been provided by ADB.	There has been no specific training on social safeguard for the officers.	There has been no specific training on social safeguard for the officers.

Source: Authors.

of sight, out of mind." Issues therefore tend to be picked up late in the project cycle and corrective measures are suggested after much of the work is completed.

E. Convergence of Social and Environmental Safeguards: Lost Opportunities?

The environmental and social safeguard processes tend to evolve in parallel through the project definition and development phases, and in many cases the same local stakeholders are involved, although they are engaged with different consultants with separate goals and different pacing. More coordination between the environmental consultants and the consultants responsible for defining the required social safeguards would bring efficiencies and further clarity and organization to local stakeholder engagement.

The environmental consultants are required to consult with local stakeholders to determine their perceptions and use of habitats that might be affected by the project (especially forest areas and wetlands); their anecdotes regarding presence and seasonality of important wildlife, birds, and fish in the possible zones of influence of the project; and trends in habitat and environmental degradation over recent times, as well as seasonality of all

these parameters. The other primary concern is to inform the local community about the technical aspects of the project, the possible impacts, and proposed solutions, and to log their concerns regarding environmental parameters. Furthermore, the project proponent is obliged to consult with the local communities again once the EIA and EMP have been drafted, so that stakeholder feedback can again be received, logged, and responded to. This process is intended not only to avoid adverse environmental impacts, but also to ensure that environmental attributes that are important to the local community are completely mitigated or offset to their satisfaction. The environmental consultations may occur over several years and will be primarily concerned with environmental conservation. This process is also an opportunity to establish a grievance redress mechanism that will address environmental issues and concerns related to all project phases in a timely and effective manner.

For the social safeguard process, the engagement with local stakeholders can be much more politicized, complicated, and fraught with concerns about landownership, tenure, and land use, and the fairness, transparency, legality, and timeliness of compensation. This social engagement can be tortuous and difficult for everyone involved (consultants, project proponent, local government, and the local community), depending on how many people are affected, how many may have to be resettled, and the potential scale of loss of private land, infrastructure, and community services. Whereas the environmental safeguards engagement with these same people may be relatively straightforward, the social safeguards engagement may always be seen as a form of negotiation from the start, with the outcomes not always clear, even at the apparent end of the process, and much higher levels of tension.

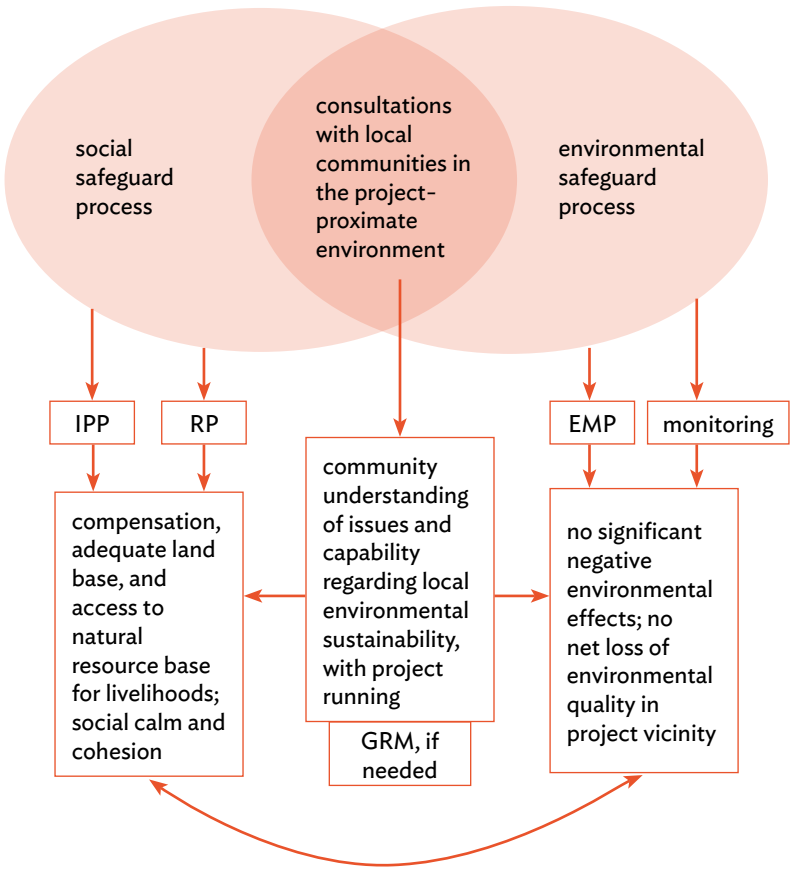
It is primarily because of these differences that the two safeguard processes with the same stakeholders are undertaken by different people and in different places. The EIA process usually considers various social impact indicators, including loss of access to land and changed livelihoods. These must be documented in the same file as the full spectrum of environmental impacts and mitigation measures. This is, for example, evident in the Nepal projects, and is also required by the Electricity Transmission Expansion and Supply Improvement Project in Bhutan. However, although the convergence of social and environmental safeguards may be occurring in the documents it is not necessarily happening in the field during consultations with local communities.

It can be argued that opportunities are lost with this parallel track for the environmental and social safeguard processes. First, the environmental safeguards consultant could be much more involved with the social safeguards consultations. The attributes of landownership and use, and access to natural resources that become evident through dialogue on social issues would help understand the natural habitats, trends in environmental degradation, and local dependencies that can explain many features of the physical and biological environment. This understanding would be helpful in developing the EIA. In addition, the discussion of resettlement needs and options, which are primarily the responsibility of the social safeguards consultant, would be much better informed if the environmental considerations and natural resource implications of alternative resettlement sites—the function of the environmental safeguards consultant—are known. Habitat offsets, if required, could also be factored into any discussion of alternative resettlement locations, as the proximity of a future settlement site and new habitat offsets, which would usually be closed to public access, could be a critical decision factor. This convergence is shown graphically in Figure 46.

Social safeguards consultations can also explore the possibility of new jobs or functions for local people that might result from proposed environmental mitigation measures, such as those related to construction of environmental mitigation measures and interventions, environmental custodianship (e.g., for parks, protected areas, and waterways), environmental observations and monitoring, and the provision of environmental services (e.g., watershed protection for various water infrastructure projects). This entry point to local stakeholders from the environmental safeguards side could help with the social safeguards discussions regarding resettlement, perceived lost income, and loss of access to sites, bringing environmental management opportunities to the table.

Finally, more convergence of the social and environmental safeguard process with the same stakeholders could set the stage for creation and development of local community environmental committees, which could then

Figure 46: Possible Convergence of Environmental and Social Safeguard Processes and Linked Results



EMP = environmental management plan, GRM = grievance redress mechanism, IPP = indigenous peoples plan, RP = resettlement plan.
Source: ADB.

be mobilized and trained for environmental mitigation tasks and environmental monitoring. The social issues dialogue would help identify the dynamics and degree of cohesiveness in the community. Newcomers, such as environmental consultants, for example, need to be made aware of these scenarios in order to ensure proper understanding of how the community works to properly integrate environmental management tasks.

Environmental and social safeguards cannot effectively be addressed by one person, and this study does not propose such a solution. The idea is to have a convergence of processes in the field with a common set of stakeholders, especially during project preparation, when contact is first made with local communities and solutions are developed. This may take more time from the environmental and social safeguard specialists, and more coordination between them. There will continue to be many aspects of the social safeguard process where the nature of the work requires an independent specialist. These include land acquisition, resettlement of affected people, and livelihood restoration, especially during the implementation stages of a project when the safeguard roles are handled by a project management consultant (PMC) or a government implementing agency. At this stage, more effort is generally required for social safeguards than for environmental safeguards.

Greater coordination of environmental and social safeguards roles would increase the awareness of all safeguard issues and help identify common solutions benefiting both areas. Joint social and environmental consultations with the same local stakeholders can help clarify the environmental implications of various social safeguard options (e.g., resettlement site options), and the social consequences of various proposed environmental mitigation measures (e.g., alternative locations for replanting trees, leaving access roads in place, or grassing over muck disposal sites).

III. Moving Forward: Making Safeguard Design and Implementation More Meaningful

A. Summary of Shortcomings: What Can Be Fixed?

The case studies and comparative analyses noted in previous sections are instructive in not only pointing out the safeguard shortcomings, but also in identifying reasonable expectations of what can be achieved for each safeguard attribute. By looking carefully at safeguard measures that are exemplary and working effectively in each country, and examining the context and dynamics that contribute to their effectiveness, we can understand how to rectify safeguard measures that are lagging. This may involve changing technical approaches and/or work sequences, reassigning roles and responsibilities, addressing regulatory gaps, or adding resources.

This section reviews the comparative analysis of the case studies and the institutional capacity assessment, isolates the environmental and social safeguard shortcomings, and proposes long- and short-term remedies to these shortcomings.

1. "Fixable" Environmental Safeguard Shortcomings

a. Lack of Site-Specific Details in Environmental Management Plans

This is a serious but relatively easy-to-address shortcoming that was quite prevalent in the case study projects. It stems mostly from the use of previous environmental management plans (EMPs) with little critical review. The EMPs may be relevant to the sector but are not fine-tuned to the specific technical details of the project and the specific sites for the project under development. The lack of site-specific details may also reflect inadequate field surveys that do not demonstrate an understanding of the challenges presented by specific project sites, and a lack of experience in refining the technical aspects of mitigation in the particular project context.

Detailed field surveys, which are a mandatory requirement of project development and the environmental impact assessment (EIA) and initial environmental examination (IEE) process, need to determine the vulnerabilities of the receiving environment and the practicality of possible solutions to issues at specific sites. They require individuals with a lot of field expertise and technical knowledge. Finding the most appropriate people for the task may be very challenging.

The lack of site-specific details in EMPs can be remedied by creating a detailed matrix in the EIA or IEE phase that includes all project interactions with all project sites during the preconstruction, construction, and operation phases for all vulnerable receiving environments. The matrix would highlight mitigation needs with the aid of a map or satellite image, and clarify the technical aspects of each mitigation measure to ensure that all sites are addressed.

Essentially, this involves determining what will be applied where, and how. The matrix creates the discipline to ensure that all issues at all sites are addressed. It is also the only way to determine appropriate budgets for mitigation measures. Further details can then be filled in by the project manager and contractor to create site plans that would corroborate the site-specific mitigation measures and allow for their scheduling within the work sequence.

Ensuring that site-specific details are included in the EMP requires quality control by the author, the proponent, and the Asian Development Bank (ADB). While previous

EMPs can inform the process, details should not be copied into new project documents. A preconstruction walk-through for all proposed project work sites with the project manager, supervision consultants, contractor, and representatives of the local community would help clarify and solidify site-specific environmental safeguard details. Provision also needs to be made for adjusting environmental safeguard technical details if work experience at specific sites suggests the original plans need to be revised.

b. Lack of Community Awareness of Project Details

The level of community awareness of project details is quite inconsistent between projects and countries. Lack of community awareness is a serious shortcoming that should be addressed. More community awareness of the technical details of a project can allay fears about the project and build more constructive partnerships between stakeholders and project proponents.

ADB processes require a varying number of consultations between project proponents and local communities depending on whether the project is categorized A, B, or C for safeguards. Nevertheless, consultation is an ongoing process throughout the project cycle which can be done in both formal and informal settings. The real issue, however, is what information is conveyed during consultations, and to what extent the project proponent is patient enough to explain all technical details and possible environmental consequences of project components at specific sites. Most of the interaction with local communities hinges on social issues and the examination of resettlement requirements. These tend to be more difficult and politicized than a discussion that focuses merely on project technicalities and possible environmental consequences. Sometimes swaps, payouts, and other forms of compensation trump the community concerns about environmental consequences, or at least overshadow them. This, in itself, would be a justification for more convergence of the environmental and social safeguard consultant roles early in project definition and appraisal.

To increase the level of community awareness about projects, the most effective communication tools should be used to convey the messages about the project in consultations with local communities. These include the detailed EMP matrix, conceptual and physical models of the project, and photographs and satellite images. A two-way communication flow must be established and maintained, and the concerns and local knowledge about the environment in the proposed project location should be listened to, discussed, catalogued, and entered into the consultation record. The consultation process can then devise possible solutions to real environmental issues and local perceptions of issues, both of which are real to local communities.

c. Absence of a Role for Local Communities in Mitigation and Monitoring

This is a logical extension of the previous issue. It is perhaps obvious that local communities can have a role in mitigation, for example in the construction and operation of specific measures and providing local services, but it does not seem to be common practice. The local community has a vested interest in the effectiveness of mitigation measures and, if properly instructed, can have a significant and useful role. Their proximity to project sites, availability, and affordability (compared to contractors) should all be seen as positive factors. Many construction tasks and site preparation works related to mitigation could be assigned to local communities. Furthermore, if local communities are more involved in developing mitigation measures, the knowledge they gain on the technical aspects of the mitigation measures would enable them to be more involved in monitoring the effectiveness of the measures.

The main barrier to such engagement by project proponents and contractors is the need to organize local community groups and deal with the vagaries and unpredictability of local politics, dynamics, and obscure vested interests. However, investing time in understanding these factors, organizing individuals, and more actively engaging local communities is likely to be a net positive action for both the effectiveness of the mitigation measures and the timeliness of monitoring data.

d. Inadequate Implementation of Environmental Management Plan

The most critical safeguard attribute is whether the proposed mitigation measures are being implemented and the degree of compliance with the EMP. Worker camp conditions, worker safety, sediment stabilization, and erosion controls appear to be the most challenging mitigation measures and the ones that show the lowest rate of compliance. In general, worker conditions and

safety are not prioritized in South Asia, and there is a level of acceptance by workers of the hazards related to their jobs. In addition to lagging compliance with safety norms, there is also a general lack of worker safety manuals in the workers' languages.

Sediment stabilization and erosion controls present many challenges, especially where very steep topography defies simple technical solutions. Sediment stabilization needs can be pervasive, occurring in many locations and frequently as cuts are made into slopes, loose soil is constantly moved, and muck disposal can result in huge volumes that need to be cleared frequently from work sites. Solutions may be seen by contractors as time-consuming and expensive, and are complicated by poor work sequencing if contractors lack experience or are careless. There is also a serious requirement for technical competency based on the contractor's experience in other challenging locations.

Addressing poor EMP compliance rates should be straightforward given that the supervising consultants, project proponent or manager, and ADB should all be monitoring EMP compliance quite frequently. The monitoring reports cite these issues, but if ADB only receives them on a quarterly or semiannual basis, then there is a significant lag time between EMP lapses and their reporting. This places more onus on the contractors, project proponent, managers, and supervising consultants, all of whom may have more interest in getting the project constructed.[35] In addition, government regulatory monitors may have infrequent access to the project, inadequate resources, and little power to stop the work and ensuring fixes. They may also have little interest in promptly informing ADB or the regulatory authorities about lack of EMP compliance.

Ways to address this problem include local community awareness of the project, environmental issues, and expected mitigation measures, and a mechanism to alert ADB immediately of present or emerging issues. The alert mechanism is similar to the idea of a "hotline" or SMS alert system, which can be monitored, allowing real issues that need to be addressed right away to be separated from frivolous or trivial issues that do not. Grievance redress mechanisms are meant to provide this function, but this study could not determine their effectiveness.

A simple hotline or SMS system, if practical, could increase EMP compliance rates and preclude a lot of environmental issues, and could be directly linked to the grievance redress process.

e. Inconsistent Environmental Monitoring

Environmental monitoring is critically important, as it is the only way to understand if the project's mitigation measures are effective or if there are unanticipated environmental impacts. Such monitoring can be technically complex with regard to (i) selecting the appropriate parameters; (ii) establishing robust sampling methodology and suitable instruments; (iii) selecting the most appropriate locations, degrees of replication, and thresholds; and (vi) establishing a sampling sequence to correctly detect seasonal variability in parameters. Those tasked with environmental monitoring must have a sound understanding of the technical literature on environmental monitoring, experience in the field, and a solid scientific background in interpreting data, but many projects have difficulty finding people with these competencies.

While environmental monitoring can be technically complex, it can be effectively delegated to appropriately trained project management staff and local community members. Thresholds and decision points should be agreed during the planning stages of a project and worked into the monitoring protocol so that any incipient environmental degradation due to the project can be addressed immediately. Monitoring reports also need to be very clear on when deficiencies in environmental safeguards were detected, what the process for contractor notification was, when the issues were remedied, and the effectiveness of the remedies.

f. Inadequate Attention to Community Health and Safety Issues

Many of the observed project work sites had lapses related to community health and safety, such as lack of signage, easy public access to work sites, and disruption of community infrastructure and services. The local communities' pervasive acceptance of safety risks and disruption contribute to this ongoing problem, and community members will continue to face significant risks, including death, from poorly controlled project construction activities.

[35] However, ensuring selection of contractors who have previous proven experience with design and implementation of environmental safeguards would help.

Construction companies and contractors need to be pushed to invest more time and resources in minimizing community health and safety risks and strengthening monitoring and enforcement. There is too much complacency about these issues, and local communities are not always knowledgeable about their rights and responsibilities or effectively mobilized.

g. Lack of Access to and Use of Documented Experience from Other Projects

Most of the case study projects make little reference to papers, manuals, or guidelines from other projects or other countries. The work practices observed at most project sites suggest that they are not benefiting from experiences elsewhere. This is because (i) companies and contractors tend to be conservative in their work practice, sticking with those they are familiar with; and (ii) few lessons or guidelines have been developed from projects because they take time and resources to develop, and are not widely circulated as they are not readily understood.

The main information needs related to environmental safeguards that were evident from this study pertain to safeguard design, especially land clearing, and bioengineering and other forms of slope and sediment stabilization; worker camp management; health and safety issues; work sequencing; and safeguard quality-control processes. These could be addressed by developing user-friendly guidelines that are applicable to most infrastructure project situations in South Asia. However, encouraging uptake of new practices needs be supported by training, follow-up, and adequate budgeting for what may be new practices for most contractors. Simple environmental economics can be used to demonstrate that it is less costly to introduce new practices that prevent environmental degradation than to correct the problem using an engineering or construction best practice intervention after it has occurred.

h. Little Reference to and Accountability for National Environmental Standards and Guidelines

While it is clear that all projects must conform to the national and state standards and guidelines that apply to different project construction and operation features, most environmental monitoring data are collected and reported by the project proponent with little reference to regulatory standards. There are several reasons for this: (i) reporting formats are not always set up to benchmark the results against standards; (ii) contractors resist reporting that standards have been exceeded because it suggests that work should stop while remedies are put in place; (iii) monitoring data are manipulated by averaging the date and removing the outliers to reduce the value of individual parameters; and, more generally, (iv) most government agencies have insufficient resources to carry out frequent sampling and analysis.

The obvious solution to this problem is increased sampling by regulatory agencies to avoid the conflict of interest in analysis and reporting of results that currently pervades the environmental monitoring process. However, most government agencies would need additional funds for the people, equipment, and transport costs required to undertake frequent, objective, and pertinent environmental monitoring.

i. Inaccessibility and Inadequacy of Environmental Management Plan and Monitoring Documents

The EMP and monitoring documents are not easily accessed and do not appear to be used at project work sites by site managers to guide the implementation of environmental safeguards, check their effectiveness, or flag lack of compliance and the status of remedies. In most cases, these documents are prepared by people who do not have a direct work connection to the project sites, and they remain in a digital format, which cannot easily be used on a day-to-day basis. It is not clear whether the people who prepare these documents discuss the implications with the site supervisors. There therefore tends to be a disconnect between the documented environmental safeguard process and the people who are supposed to implement the safeguards and check on their effectiveness.[36]

To remedy this situation, a detailed EMP matrix, appropriate maps and satellite images, and the suggested updated site-specific environmental management plans could all be made simple, informative, and work-site

[36] There are exceptions, such as the highway project in Bhutan, where there was a high level of awareness of all environmental safeguard requirements and their effectiveness at different stages of the project.

friendly for daily use. More frequent meetings should also be held between supervising consultants, project managers, and contractors to discuss the details of environmental safeguards and their monitoring in a meaningful way that ensures proper implementation and effectiveness. This means giving more profile and prominence to environmental safeguards as ongoing responsibilities.

j. Confusion about How to Implement Environmental Safeguard Roles

In most cases, the environmental safeguard roles are noted in the EMP, but the functional relationship between different individuals remains unclear. The link between those in the project proponent's office, the supervising consultant, and the contractor is often only shown as a line in a graphic indicating an undefined link or reporting flow. The site supervisor for the contractor is often conflicted between getting the project built and maintaining some role in implementing and monitoring the effectiveness of environmental safeguards, which are seen as extra tasks and a drag on completing the project with the least cost. In addition, the front-loading of environmental safeguard supervision and oversight during the development of the EIA and EMP sometimes leaves inadequate human and financial resources for the significant inputs required during the construction and early operational phases. This is not always the case, however, as some complex projects, such as hydropower, have explicit budgets and consultants identified for specific environmental safeguard tasks well into the operational phase.

More clarity is required on environmental safeguards roles, but it is also important to establish the nature of the relationships between all individuals in the different entities that have environmental safeguard responsibilities. This means determining the reporting requirements, levels of authority, frequency of engagement, and purpose and documentation of meetings and agreements made.

k. Inadequate Contract Specifications for Environmental Safeguards

The EMP provides the main guidance on environmental safeguards, and if well developed and detailed, it can provide sufficient guidance to the project manager and contractors. However, the EMP is not always included as a contract document, for example as an appendix to a construction contract or a covenant to contract requirements. In many cases, it is unclear what environmental safeguards the contractor is supposed to deliver, what maintenance of construction best practices it is meant to adhere to, and whether these are budgeted for. Sometimes, the EMP is provided as part of the bid documents, but there is no explicit accountability for all the environmental safeguards required in the contractors' proposals. The contractor is therefore unable to follow through on all safeguards in the contract with specificity and accountability, and they remain unclear add-ons.

The solution is quite straightforward. The EMP site-specific matrix, with its actions, time lines, and estimated budgets for all required environmental safeguards, needs to be consistently included in bid documents, and budgeting of all safeguard requirements needs to be explicitly included in all contracts. The contractor should be made aware of the requirements in the bid documents, and subsequent meetings can be held between the project management and the contractor to clarify everything. In many cases, keeping environmental safeguards in the ongoing dialogue and frequently checking on their status will reinforce the contract specifications for environmental safeguards and allow quick resolution of any contested items or unclear tasks. The main philosophy is to instill the notion that environmental safeguards are a mainstream part of project construction, rather than an add-on.

Once environmental safeguards are more clearly specified in contracts, accountability for all items will have a firmer legal footing and it will be easier for the project managers to keep them on track. The contracts should also make the work sequencing for all environmental safeguards very clear by, for example, requiring slope stabilization measures to be developed before significant hill cuts are made for access roads.

2. "Fixable" Social Safeguard Shortcomings

Most of the social safeguard design and implementation issues identified during the case study analysis can be remedied. The few cannot readily be addressed

relate to country systems. These would require further consultations to effect policy and legislative changes that would support better social safeguard implementation at the national level.

a. Clarifying ADB's Safeguard Principles and Requirements at the Start of the Project

Safeguard frameworks are sometimes agreed upon without fully understanding their implications. A plethora of unanticipated problems can then arise when the resettlement plan is implemented, especially when addressing entitlements of nontitleholders. The resettlement frameworks for the projects that were examined did not elaborate the relocation criteria of displaced nontitleholders. For affected people with no legal title to assets, ADB policy requires compensation for impacts on any improvements or income-generating activities that the affected party may have established. The policy also encourages special assistance for vulnerable people to ensure that they do not become worse off than they were before the project. Usually, no alternative space is provided by the client for these people to move to, and people are unwilling to move as they have nowhere to go, causing project delays and the risk of social unrest.

Bhutan has a policy of providing land to those who lack title to land and may be affected by a project. Nepal does not recognize nontitleholders. In India, after the implementation of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, which also covers sharecroppers and agricultural laborers, it remains to be seen how nontitleholders are rehabilitated. However, some exceptions to the rule have also been noted, and these really vary from project to project, depending on the availability of resources and opportunities. For example, in the Karnataka State Highways Improvement Project, India, which is funded by both ADB and the World Bank and not included in this study, the entitlement matrix provides for alternative sites for nontitleholders to rebuild their houses and shops. The project also provides for residential squatters, by providing a house in a resettlement colony or developed plot. For commercial squatters, an alternative shop of about 9.3 square meters or assistance for income-generating assets valuated up to Rs30,000 was allowed. If the executing agency is unable to provide alternative government land for such relocation schemes, then other assistance needs to be explored during the formulation of the entitlement matrix.

The assistance to nontitleholders can be agreed by ADB and the client at the time of framing the entitlement matrix, so that there is no ambiguity during project implementation. Provisions for nontitleholders need to be carefully thought through, to avoid detrimental effects on both the project and affected people.

b. Careful Planning and Social Impact Analysis

In the Assam Urban Infrastructure Improvement Project Tranche 1, the resettlement plan that had been prepared during project processing had to be completely revised because the project site changed. This stemmed from unavailability of land and the client's unwillingness to move the nontitleholders. It is important to determine the potential encumbrances while selecting sites for the project early on; not doing so can lead to delays in project implementation. Identification of project sites can be guided by stringent application of the social safeguard checklists used for categorization, examination of local land records, and a quick field check to gauge the ground realities. This should be done by the executing agency, design and supervision consultant, or project preparatory technical assistance consultants.

c. Adequate Funding for Safeguard Implementation

In the solid waste management subproject in Dibrugarh under the Assam Urban Infrastructure Investment Program, due to a lack of counterpart funding, only 75% of the compensation amount had been paid for the land acquired. The project will not be able to start construction work at the site until all the payments have been cleared. Thus, funding for land acquisition and resettlement work must be adequate and budgeted correctly, and provisions must be made for payment.

d. Delays in Land Acquisition due to Unrealistic Time Lines

Understanding the land acquisition process and the time required, as well as the various methods of settlement, is the basis for effectively undertaking any infrastructure project. There should be sufficient time allotted for project land acquisition planning to avoid delays in project implementation. Project team

members should have proper understanding of country-specific requirements for compliance matters. Leveling off in terms of expectations and time lines need to be established between lender and borrower from the start of each project. The study found that more time is usually required than is suggested by ADB to prepare the land acquisition plans. For example, in the Bihar State Highways II Project, the land is being acquired under the emergency clause of the Land Acquisition Act, 1894; despite this, it took at least 2 years to acquire the project site. In Bhutan, land for the Urban Infrastructure Project was acquired through land pooling, which took almost 3 years to complete.

e. Lack of Social Safeguard Officers in Project Institutional Setup

In many of the projects examined, there is no dedicated social safeguard specialist. In some cases, the role is combined with the environmental portfolio. However, all projects with Category A and B impacts need dedicated officers.

f. Inadequate Staff Training on Social Safeguards

For all projects that were examined, social safeguard orientation is required. This step has already been initiated in ADB, especially in India. The staff of executing agencies, PIUs, and PMUs, who are mostly engineers, need to be trained and sensitized on the need for social safeguards. This must be an ongoing process. In many instances, only the people at the top management levels go for social safeguard training. While this is encouraging and helps raise awareness at higher management levels, it is also important to provide engineers, especially at the PIU level, with training in ADB and project safeguard requirements, since these individuals are directly involved in the implementation of resettlement plans.

g. Training for Nongovernment and Community-Based Organizations

NGOs and CBOs who deal with communities need training on (i) meeting safeguard documents and ADB requirements; (ii) conducting consultations regarding project impacts and benefits, and the assistance to be provided; (iii) identifying the different categories of impacts, affected people, and vulnerable groups; (iv) conducting joint verification of the affected people along with the PIU; (v) distributing identification cards; (vi) generating micro plans; (vii) identifying the skill levels of affected people for livelihood restoration; (viii) relocating displaced people; (ix) registering grievances and monitoring their resolution; and (x) monitoring resettlement and rehabilitation implementation. These organizations work with limited funds and usually cannot send their workers for training on a regular basis. Training, especially CBOs, needs to be conducted near the community so that more can attend. To make training meaningful, the trainers have to reach for the community (not the other way around). Although NGOs and CBOs are hired specifically for implementation and usually having the required experience, their staff still need training on the specific project requirements, and the type and extent of impacts they will have to deal with.

h. Frequent Staff Transfers and Loss of Project Training Knowledge

The project implementation process suffers from frequent transfers of qualified staff, some of whom have been trained on social safeguard aspects. Incentives or mechanisms need to be developed to ensure that staff involved in social safeguard implementation are retained for the duration of the project.

i. Lack of Systematic Monitoring and Tracking of Resettlement Implementation Plans

In all the case study projects that were examined, social safeguards are being monitored. In some projects, it has been combined with environmental monitoring. Monitoring is undertaken either by the PMC or external consultants. The issue, however, is the inadequate follow-up on the monitoring reports by the executing agency. The monitoring reports are sent to ADB on a quarterly or semiannual basis depending on the project safeguards categorization. In some projects, by the time ADB receives the monitoring reports, much of the implementation has already been done. A project quality control system needs to be established to ensure prompt action on any noncompliant item in the monitoring reports.

j. Lack of Sharing of Good Practices

Many of the projects that were examined follow good practices. There is considerable scope to further improve social safeguard implementation performance by

regularly exchanging best practices and staff between similar projects within the region. This is being done through ADB's tripartite portfolio review meetings in India, where ADB and the Government of India regularly come together to enhance the project implementation performance of executing agencies through cross-learning and sharing of best practices.[37] The same can be done across the region.

B. Proposed Remedies

The case study analysis and comparative assessment indicate a wide range of deficiencies and shortcomings with both social and environmental safeguard implementation. While some are country-specific or may relate to certain projects within a country, many are common to most projects in the three countries examined. The fixes for the observed shortcomings are presented here as a suite of remedies that can be packaged into an action plan over the next 3 years. These include (i) improving technical information related to safeguards, (ii) adjusting processes and work sequences, (iii) clarifying roles and responsibilities, and (iv) providing targeted training to build up safeguard competencies at all delivery levels in all project phases.

Targeted training on the technical aspects and processes related to safeguard design and implementation and cultivating a core of practitioners in South Asia are short-term measures that can raise the awareness and competency of safeguard practitioners to improve safeguard implementation and make safeguard documentation more consistent.

Longer-term remedies will require process changes, including in how safeguards are identified, budgeted, and codified in contracts, as well as corollary policy and regulatory changes in the borrowing countries. ADB projects should not continue to operate mostly in their own realm, with the state environmental and social regulators remaining hands-off at worst, or at least complacent, with no national or local pressure to fix environmental degradation caused by these projects.[38]

The longer-term remedies require a shift in mindset toward taking environmental management requirements more seriously. This process can be supported by more environmental economics arguments on the net economic benefits of preventing environmental degradation through properly designed and well-funded safeguard measures, compared with remedying environmental problems later or ignoring them, with associated accrual of costs over time.

The longer-term process for social safeguards improvements is more complicated and needs to be hinged on notions of equity, fair and transparent processes, and compassion and humanity for people—many of whom are marginalized or disadvantaged—who are suddenly faced with change and uncertainty about the future.

1. Environmental Safeguards

Improved design and implementation of environmental safeguards for infrastructure projects in South Asia should result in a visible and measureable reduction in environmental issues during infrastructure project construction and operation. Monitoring programs should be able to detect this and the proposed safeguard tracking system should clearly document both a higher degree of compliance with required safeguards and their improved effectiveness. In an ideal situation, service and infrastructure projects should be executed with maximum positive social benefits; minimum negative environmental impacts; and, in some cases, environmental enhancements.

Therefore, the main goals of the proposed remedies for environmental safeguards are (i) improved systems and protocols for designing, implementing, and monitoring environmental safeguards; (ii) increased skills and competencies of all project stakeholders associated with environmental safeguard design, implementation, and monitoring; and (iii) an effective ADB-wide environmental safeguard tracking system to facilitate information exchange between ADB processing and implementation teams.

[37] ADB. 2011. *Facilitating Infrastructure Development in India: ADB's Experience and Best Practices in Project Implementation.* Manila.

[38] Social safeguards may be an exception, as usually these cannot be so easily ignored.

The two main approaches to achieve these goals are targeted capacity building using theme-specific manuals, and the development of safeguard tracking system protocols to suit the needs of the countries and ADB. Both prongs should involve engagement of all project stakeholders, including ADB staff, government agencies (regulators, and executing and implementing agencies), project staff and associated consultants, contractors, and local communities. The intention would be to bring all project stakeholders to the same level of understanding and expectations regarding environmental safeguards. This would help address some of the confusion and loss of accountability currently evident with different project safeguard structures, responsibilities, and protocols.

The proposed areas in which training should take place include environmental safeguard design, safeguard responsibility management, environmental monitoring and reporting protocols, work site safety, environmental safeguard implementation sequencing, environmental safeguard contract covenants and pre-work walk-throughs, and options for renewable energy applications in infrastructure and service projects.

Training modalities could include

- dissemination of project environmental safeguard best practices by using successful projects as training resources for other countries and projects,[39]
- undertaking project site audits in which effective and ineffective environmental safeguard practices are detailed and examined,
- use of scenario development and mock exercises to develop and test skills in environmental safeguard design and sequencing, and
- all-inclusive training involving representatives of all project environmental safeguard stakeholders to develop a better understanding of the various stakeholder responsibilities and perspectives.

The overall intention is to ensure that all observed constraints and challenges in the design and implementation of environmental safeguards in infrastructure projects in Bhutan, India, and Nepal are addressed, either through training of the appropriate participants or through the development of protocols, systems, and associated manuals.

Table 40 clusters the environmental safeguard issues and constraints identified in the case study projects, aligns them with proposed remedies, and identifies how to set them in motion.

The expected outcomes of these measures should include at least the following:

(i) An effective environmental safeguard tracking system for ADB's South Asia Department. This should be a controlled-input and read-only environmental safeguard tracking system in operation at ADB headquarters, and in the India and Nepal resident missions within a few years of initiation of the activity, with all ADB projects loaded and up-to-date.
(ii) Improved systems and protocols for designing, implementing, and monitoring environmental safeguards, such that existing and new ADB projects in all three countries have documented improvements in environmental safeguard design and higher compliance rates, evidenced by clear and timely monitoring reports.
(iii) Increased skills and competencies of all project stakeholders associated with environmental safeguard design, implementation, and monitoring. All training participants should be better able to design, implement, and monitor environmental safeguards. This would be evident from training evaluations, associated project documentation, and training effectiveness interviews.

These outcomes would need to be verified by reviewing the content and access procedures of the safeguard tracking system and cross-checking with hardcopy safeguard compliance reports from projects in each of the three countries. They can also be checked through review of the ADB internal reports for the projects and the project environmental safeguard compliance and

[39] This would involve sending staff to other locations to provide training, or undertaking project exchanges, with exchanged staff embedded in projects for 2-week periods.

Table 40: Environmental Safeguard Issues and Constraints

Issue or Constraint	Proposed Remedies	Getting Started
Gaps in design of environmental mitigation measures Lack of appropriate approaches for site-specific challenges Lack of technology transfer between projects and countries Poor sequencing of mitigation measures	Develop a comprehensive manual on environmental safeguard design, implementation, and sequencing, which will address all possible infrastructure project activities and all possible location and seasonal challenges in the three countries.	Review the environmental management plans (EMPs) and compliance reports from the three countries, and the case studies in this report, to develop an outline for the manual. Flesh this out in consultation with government agency representatives and practitioners in the three countries. A technical oversight committee could be formed to guide this process in a workshop setting. The manual could be used in subsequent training and could provide source material for those who will design and implement environmental safeguards.
Gaps and weaknesses in national legislation compared to the Asian Development Bank (ADB) safeguard policy, which can reduce the effectiveness of safeguard measures and generate confusion for project teams during implementation	Conduct a detailed review of national environmental laws and regulations and the ADB safeguard policies and practices to inform recommendations to fill gaps in national legislation and create a harmonized environmental safeguard modality.	Review all relevant laws, regulations, and standards in Bhutan, India, and Nepal, building on the analysis in this report. Identify gaps and suggest how to fill them to make the national legislation more effective, seeking guidance from national environmental legal specialists in a workshop setting.
Ongoing lack of understanding or lack of attention to the budget requirements for effective environmental mitigation	Develop budget guidelines for environmental safeguard design and implementation.	Catalogue the full suite of environmental mitigation measures that would apply to all projects in the loan portfolio, and critically assess reasonable expenditures to implement all such measures. Brainstorm with the technical oversight committee to elaborate the type, pacing, appropriate level of effort, and reasonable cost of environmental mitigation measures in each country.
Conflicts between the entities constructing the projects due to tight time lines and budgets, and the need to set aside time and effort to mitigate environmental impacts and monitor and document corrective measures	Analyze conflict-of-interest issues within environmental safeguard implementation, monitoring, and reporting to better rationalize environmental safeguard responsibilities.	For each country, conduct an organizational analysis of the responsibilities and relationships between all entities in the design and delivery chain for environmental mitigation measures with technical committees in a workshop setting. Examine conflicts and enhancement opportunities, clarify reasonable roles for each entity, and recommend how to close gaps in implementation and accountability in the environmental safeguard process.
Varying capacities for design, implementation, and management of environmental mitigation measures	Deliver training courses in all three countries on environmental safeguard design, safeguard responsibility management, environmental monitoring and reporting protocols, work site safety, environmental safeguard implementation sequencing, environmental safeguard contract covenants and pre-work walk-throughs, and options for renewable energy applications in infrastructure and service projects.	Courses for government, executing and implementing agencies, contractors, and local communities should be developed with suitable training materials and training-of-trainers to build in-country training capacity and sustainability of the training effort. Training modalities would include theoretical approaches, field work, exchanges, and secondments for on-the-job training. Local trainers should be selected 6 months before training starts.
Low local community awareness of the needs and opportunities related to site-specific environmental mitigation measures, including the community's potential role in	Prepare a manual that can be easily understood by local communities to support holistic awareness raising and training for environmental safeguard design,	In various locations in each of the three countries, develop and deliver a simplified training module on environmental safeguard design and implementation practices that

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Table 40 *continued*

Issue or Constraint	Proposed Remedies	Getting Started
implementation and monitoring of mitigation measures	implementation, and monitoring. Such a manual can be used by the project team for ongoing as well as new projects.	would suit local communities already exposed, or about to be exposed, to infrastructure and service projects, to enhance their role in environmental safeguards due diligence. These may work best with ongoing projects so that site visits can clarify the issues and approaches.
Inconsistent competence and diligence of project contractors with regard to environmental mitigation responsibilities	Design and test a 1-day training program with a focus on project contractors (site engineers responsible for environmental safeguard implementation and monitoring). Provide it to nongovernment organizations (NGOs) for them to implement and disseminate through training-of-trainers, so that contractors are exposed to better practices.	Once these elements have been completed and the roles and responsibilities of project contractors with regard to environmental safeguards have been further clarified, develop and deliver 1-day sessions to NGOs who are responsible for monitoring the activities of contractors. This could be interactive, with brainstorming, organizational analysis, and simulations, to sharpen the focus on the fulfillment of daily environmental safeguard responsibilities. It could also be well supported by training manuals aimed at contractor responsibilities, including how to develop site-specific EMPs.
Often inadequate monitoring programs for measuring both the compliance and effectiveness of mitigation measures	Establish environmental monitoring protocols for sampling, interpretation, and reporting to support assessment of the effectiveness of environmental safeguards.	Develop a best practice environmental monitoring guidance manual that is specific to environmental safeguard compliance and effectiveness monitoring requirements, drawing from examples in the region, and elsewhere, with a focus on practicality, utility, and accuracy. This document could then inform the training described above.
Lack of a common understanding of the EMP design and site-specific requirements, for both the local stakeholders and those responsible for implementation	Establish the procedures and protocol for project, community, and contractor EMP review, environmental safeguard walk-throughs, and signing off, before project construction begins.	Develop a guidance document for undertaking pre-project walk-throughs to create a common understanding among all implementers and stakeholders of the EMP requirements, site-specific issues and suitable remedies, and clarity of the implementation sequence. This document could be used in the training described above.
Often inadequate follow-up and checking of the degree of forest replanting required to compensate for project clearing	Develop forest clearance follow-up protocols for full accountability of these environmental offset measures.	Work with the forestry departments and environmental agencies, to clarify the steps in defining, implementing, and monitoring compensatory reforestation schemes that are usually part of the EMP of infrastructure projects. Examine the options for compensation, e.g., planted area versus the number of trees, and different categories of plantable land. Brainstorm and develop recommendations in a workshop setting.
Ongoing gaps, inconsistencies, and lack of accountability on the part of the contractor in terms of compliance with mitigation measures	Develop guidelines on environmental safeguard contract covenants, required bid documentation, contractor technical and financial proposal responses (specific to environmental safeguards), and environmental safeguard budgeting.	Examine process and contractual issues related to environmental safeguard design, implementation, and accountability, leading to recommendations for closing gaps and improving the accountability process. This could be undertaken in a workshop setting with government agencies, and representatives from contractors and executing and implementing agencies in each country or in a setting that allows the sharing of experiences and ideas from all three countries. Recommendations could be disseminated in the training proposed above.

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Table 40 *continued*

Issue or Constraint	Proposed Remedies	Getting Started
Often lax attention to both worker and local public safety in and near project work sites	Develop guidelines on project work site and public safety.	Review work site safety and develop best practice guidelines for application in all three countries. Disseminate the guidelines in the training identified above.
Inadequate documentation of developing capacity for environmental mitigation design and implementation	Develop an ADB training database to identify people trained, their skills and responsibilities, and the training courses they have participated in locate trained people for jobs. Conduct selected 6-month follow-up interviews.	Establish a simple database of individuals trained in safeguards, trainees, training materials, and venues. Establish a mechanism to collect and enter data. Develop a follow-up interview mechanism to evaluate training effectiveness and implementation of lessons learned. This could be developed in collaboration with the resident missions and ADB headquarters.
Difficulty in accessing knowledge products that would improve environmental safeguard design and implementation in South Asia	Develop a document collection on all aspects of environmental safeguards for uploading from the ADB website.	Collect and categorize suitable environmental safeguard documentation, post it on the ADB website, and provide decentralized access on the resident mission websites.
Missed renewable energy opportunities in project design and implementation	Develop guidelines on opportunities for incorporating renewable energy technologies in infrastructure and service projects.	Review and summarize all the opportunities for renewable energy use during project construction and in the operation of infrastructure and service projects. This could be reinforced with a workshop approach with executing and implementing agency engineers, with brainstorming of all project scenarios to identify opportunities and technologies. The resulting guidelines could be disseminated as part of the proposed training program.

Source: Authors.

progress reports. Training evaluations and the use of training effectiveness follow-up interviews 6 months after training would further clarify the degree to which the proposed outcomes have taken hold. However, achievement of these outcomes would require that ADB staff in all locations have the time and interest to populate the safeguard tracking system and keep it up-to-date. Furthermore, the proposed guidelines and related training must be pertinent to all project types and locations in Bhutan, India, and Nepal. Training participants should be able to incorporate new skills into their routine safeguard work. As such, training participants should have environmental safeguard implementation and monitoring responsibilities to which new skills and knowledge can be applied.

2. Social Safeguards

Improving and streamlining safeguard implementation is a difficult task because each country has its own context of laws and legislation within which projects are implemented. All the projects that were examined follow the ADB safeguard policy.

Implementation can be enhanced through training programs involving field visits and the development of safeguard tracking systems based on country requirements. The objective would be to bring all stakeholders involved in resettlement plan implementation to a common level of understanding of ADB's safeguard policy principles and how to implement them effectively. Guidelines and implementation manuals need to be developed based on the knowledge of implementation challenges specific to each country.

Training modalities to improve social safeguard implementation could include

(i) comprehensive training for all stakeholders, preferably including one person from each delivery layer in a project—executing agency, PIU, PMU, design consultant, and NGO—to

provide an opportunity to trouble-shoot during the training sessions;

(ii) separate training for CBOs, such as the water users committees, to raise awareness of people at the grassroots level and mobilize them into the project fold;

(iii) delivery of training in different regions and at training centers close to project areas to facilitate attendance and site visits during training;

(iv) simple manuals with easy-to-read steps for implementation, supported, if needed, by training conducted in local languages;

(v) exchanges, especially to examine well-implemented projects; and

(vi) training of trainers to build up the human resource base of safeguard trainers and ensure that the training process is continuous, given that it may not be logistically possible for ADB staff to sustain regular training programs in all three countries.

The proposed social safeguard training program could include

- developing a training manual addressing (i) the scheduling of resettlement and rehabilitation implementation, (ii) identification of project-affected people, (iii) issuance of identity cards, (iv) completion of negotiations for land acquisition and project area scoping, (v) finalization of entitlements, (vi) payment of compensation and assistance and other entitlements according to the entitlement policies, (vii) relocation and resettlement in alternative houses or colonies, (viii) construction of resettlement colonies and vendor markets, (ix) relocation of community assets, (x) site clearance, (xi) updating of the database, (xii) protection of project areas, (xiii) public consultation, and (xiv) grievance redress procedures;
- reviewing national and state land acquisition legislation and regulations applicable to infrastructure projects and interpreting them accurately to develop implementation guidelines linked to the training manual;
- providing guidance on how to address differences between the requirements of the ADB safeguard policy and country legislation for calculation purposes, i.e., replacement cost of land and other assets acquired by the project and addressing nontitleholders;
- understanding the tasks of verification and the updating exercise, including revision of the inventory of affected people, common property resources, and other movable and immovable assets; updating the database; and disseminating of information about the project;
- understanding how to determine prices and negotiate for land acquisition, and the steps to take if negotiations fail; disbursement of compensation and assistance;
- developing guidelines on (i) relocating affected people and identifying suitable income-generating programs for them; (ii) ensuring an adequate budget for resettlement and rehabilitation and factoring an annual incremental index for all assistance, as well as a budget component for community development (where applicable) that goes beyond the project; (iii) conducting due diligence, including a review of the land acquisition and resettlement process in ongoing and completed projects, and documentation of negotiated settlements; (iv) consultation and redressal of grievances; and (v) conducting and reporting monitoring social safeguard performance and follow-up on corrective actions; and
- developing a database of people trained and their tenure in their projects after completion of training.

Table 41 summarizes the major issues and constraints faced during social safeguard implementation, the remedies required to address them, and the steps to initiate social safeguard capacity building.

3. Improving Safeguard Tracking

A safeguard tracking system is being developed at ADB headquarters for South Asian projects to ensure a common platform for tracking the safeguard implementation status and compliance. It will include indicators for environmental safeguards, resettlement, and indigenous peoples. The following four elements are

Table 41: Social Safeguard Issues and Constraints

Issue or Constraint	Proposed Remedies	Getting Started
Delays in resettlement plan implementation, as resettlement is dependent on the timely completion of the land acquisition process, which is often allocated insufficient time	Review the time line for this component. The time taken varies, depending on the act or legislation under which the land is being acquired. Ensure sufficient time is given to complete land acquisition correctly.	A study of the time required for land acquisition in the different countries is proposed, taking into account all possible constraints. This can then be used as a guide for understanding the time required before a project can be implemented, so that realistic time lines can be proposed.
Different interpretations of replacement cost in the Asian Development Bank (ADB) safeguard policy and borrowing country laws	Define a method to be used for calculating replacement cost that is acceptable to both the government and ADB.	Equivalence analysis between national laws and the ADB Safeguard Policy Statement. Identify feasible options to bridge the gaps and/or differences between the two policies.
Unexpected demands to rehabilitate nontitleholders can be imposed on the executing agency even though these were not agreed upon during the development of the resettlement plan	Define rehabilitation and resettlement measures to address impacts on nontitleholders that are agreeable to the executing agency and ADB. The executing agency will need to have the entitlements for nontitleholders approved by ADB before implementation to conform to the ADB safeguard policy.	Examine modalities for assisting nontitleholders in the context of the three countries.
Insufficient grasp of ADB SPS leads to the inability to examine equivalence with national laws pertaining to social safeguards	Provide adequate training on ADB social safeguard requirements in relation to country systems.	Training programs must be conducted for all stakeholders involved in ADB-supported projects. Training manuals outlining ADB requirements for different stakeholders should be prepared and disseminated. Trainers need to be identified and the number of programs per region worked out by the ADB resident missions.
Multiplicity of organizations involved in implementation, with overlapping terms of reference	Review roles of all implementation stakeholders. Provide a clear mandate per role and establish a clear set of guidelines.	Develop terms of reference with clear responsibilities for each stakeholder involved in implementing resettlement and rehabilitation. This should be done with the resident missions and project teams, project management units (PMUs), project implementation units (PIUs), nongovernment organizations (NGOs), and community-based organizations (CBOs) currently involved in the implementation of ADB projects.
Design changes after completion of the resettlement plans, leading to delays and lack of consultation with the community on any changes to project sites	Ensure that extensive consultations with the affected people are undertaken prior to finalizing any changes to project design.	Ensure that the project siting has been agreed with the design consultants and the executing agency, and discussed with the affected people. Develop guidelines on undertaking meaningful consultation during project planning phases, as well as in the advent of any unanticipated changes to project design. The guidelines will also include systematic documentation of all consultation processes.
Lack of proper understanding of the project-specific resettlement plan implementation processes	The executing or implementing agency needs to assess the training needs related to project-specific resettlement implementation issues for all the implementing stakeholders.	Training programs need to be developed in consultation with the PMU, PIU, NGOs, and/or CBOs.

continued on next page

Table 41 *continued*

Issue or Constraint	Proposed Remedies	Getting Started
Lack of proper scheduling of resettlement implementation activities	The executing or implementing agency needs to put in place a detailed project implementation schedule, with proper sequencing of tasks. The executing or implementing agency should hire the NGOs or CBOs only after the resettlement details are finalized so that the NGOs or CBOs can start their work without delay.	Develop a social safeguard implementation manual for sequencing of tasks. Identify people to be trained and training agenda
Frequent staff transfers and loss of institutional memory hamper resettlement and rehabilitation implementation	Explore options to retain project staff for the duration of the project.	ADB should discuss with the executing agency how to retain officers involved in social safeguard implementation in the PMU and PIU.
Ensuring livelihood restoration is done properly, through adequate research on the affected community and available options in the area during the development of the resettlement plan	The NGOs or CBOs will need to assess the training needs of the affected community to ensure a meaningful livelihood restoration program is developed. Guidelines should be developed to evaluate the livelihood restoration programs.	Guidelines to assess and evaluate livelihood restoration programs need to be developed for use by NGOs and CBOs. Consider how to link the affected people with cooperatives for skills development.
Lack of effective monitoring of project implementation progress	A project quality control system needs to be established to ensure prompt action on noncompliant items noted in the monitoring report. The executing agency and ADB must ensure projects in remote areas are properly monitored through site visits.	A checklist of items to be included in and tracked by the quality control system must be developed by the executing agency and ADB. An online and readily accessible system for flagging noncompliant items is also required. The executing agency and ADB must ensure that their safeguard specialists visit remote projects to understand implementation issues and suggest corrective actions. Feasible field visit checklists should be developed in consultation with executing agencies and resident missions.
Social safeguard training not carried out systematically	A training schedule with appropriate social safeguard content should be developed and discussed among the various projects within specific countries.	Resident missions should develop a schedule of training in discussion with the executing agencies. The in-house training provided by executing agencies should be done in parallel and should not overlap with the training provided by the resident missions. The modality of training delivery (by sector, state, or region) is to be decided by the executing agencies and resident missions.

Source: Authors.

required to maintain a near-real-time view of the status of project safeguards:

- An administrative checklist to ensure that all required steps and documentation for each project's requirements for environment, resettlement, and indigenous peoples are adequately implemented and/or completed;
- a safeguard compliance and effectiveness measurement mechanism that tracks the implementation of safeguard measures, their effectiveness, and required fixes and their implementation;
- timely input of the required information, based on firsthand checking of those inputs, with a rigorous system for controlling access and information content; and
- easy access by all concerned entities (ADB, government, and executing and implementing agencies), at least on a "read-only" basis, to the safeguard tracking data, so that everyone is informed.

The experience with safeguard tracking in India and Nepal is being incorporated into a technical consultancy at ADB headquarters, which is developing the key indicators for the parts of safeguard development and implementation. These include safeguard screening, submission and revision of safeguard framework and planning documents, recommendations and endorsement, implementation performance, safeguard reporting, and project completion.

The developing system will allow all requisite records to be attached to the database. This, in turn, will allow checking of the effectiveness of safeguard implementation and the status of required remedies, so that both the administrative requirements and knowledge of the actual utility of all safeguards can be contained in one system and accessed with relative ease.

C. Next Steps

The study has identified a set of interrelated environmental and social safeguard issues in the planning to the implementation phases of selected representative projects in Bhutan, India, and Nepal. ADB's South Asia Department has taken these issues on board and has approved technical assistance funding to mobilize the proposed action plan, focusing on capacity development of all stakeholders involved in the project planning and implementation phases, and streamlining procedures to enhance the application of ADB safeguards.

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APPENDIX

Details of the Case Study Projects

Bhutan

Dagachhu Hydropower Development Subproject: Green Power Development Project, ADB # 37399-013. ADB Approval: 29 Oct 2008

Rationale: Bhutan has substantial clean and renewable hydropower capacity. Theoretical potential hydropower is 26,760 MW, of which only about 6% is being used. Of the total 1,500 MW installed, 80% is exported to India after meeting domestic consumption. Power exports account for the largest source of government revenue in the form of taxes and dividends from hydropower companies. Despite the nation having net power surplus for export, most rural residents do not have access to electricity. Only 40% of rural households use electricity as their main source of lighting, as compared to 96.4% of urban households. Expansion of rural electrification will provide access to more remote rural areas where the costs of investment, operation, and maintenance will be higher due to low population density and unfavorable terrain. The Dagachhu hydropower development is a demonstration public–private partnership facility in line with the Hydropower Development Policy, which is to promote private and foreign investments for hydropower generation in Bhutan. Further technical assistance support will be provided to develop government capacity for hydropower export.

Description: The Green Power Development Project has two components: (i) regional clean power trade, and (ii) renewable energy access for the poor. Under the first component, the Dagachhu hydropower development (a 126-megawatt [MW] run-of-river type) aims to export power from Bhutan to India through the existing grid to India. The rural electrification component will provide access to electricity sourced from hydropower to 8,767 households and facilities with grid extensions, and electricity sourced from solar energy to 119 remote public facilities (e.g., schools, health clinics, and other community facilities) on an off-grid basis. The Dagachhu hydropower development will be promoted by a joint venture company between Druk Green Power Corporation in Bhutan and Tata Power Company in India through a public–private partnership. The rural electrification component will be mainly served by Bhutan Power Corporation, a public utility service company.

Safeguard Categories: Environment: B, Involuntary Resettlement: B, Indigenous Peoples: C

Expected Environmental and Social Issues (expressed at beginning of project): The environmental impacts of the rural electrification infrastructure proposed by the project were assessed by IEE in accordance with ADB's Environment Policy (2002) and Environmental Assessment Guidelines (2003). The overall conclusion is that through implementation of the mitigation measures, no significant negative impacts will result from the location, design, construction, or operation.

A short resettlement plan was prepared to guide the acquisition of land (the land-for-land option was chosen by all affected people who have already identified the land they wish to be awarded) and the compensation for the loss

of crops. The resettlement plan was implemented accordingly. No indigenous peoples will be negatively impacted. All relevant stakeholders, including affected communities and affected people, were fully consulted during project preparation. They were consulted to define appropriate compensation rates and a course of actions including scheduling, and were requested to select cash compensation or the alternative land to be awarded as replacement for the land acquired by the Dagachhu facility.

Progress (from latest data on ADB website, August 2014): Dagachhu plant's installed capacity was optimized and increased by 10% from 114 MW to 126 MW and will be physically completed by 31 December 2013. One turbine can be operated by February 2014 and full operations expected by May 2014 (in fact, a bit delayed, as of August 2014). Bhutan Power Corporation has already achieved the target number of households to be electrified under the project. A total of 8,777 households were newly electrified by 31 December 2012 and some additional work is ongoing.

Urban Infrastructure Project: ADB # 44240-013. ADB Approval: 29 Nov 2011

Rationale: Unprecedented urban growth coupled with inadequate urban infrastructure has resulted in a shortfall of basic urban services for Bhutan's urban residents. Infrastructure requirements across urban centers vary, but access to water, sanitation, solid waste management, and urban transport are often inadequate. The government's Tenth Five-Year Plan identifies the need to invest in urban infrastructure and management in Bhutan's two major municipalities Thimphu and Phuentsholing and other larger urban centers to ensure sustainable urban management. Thimphu's development strategy identifies four primary issues in the infrastructure and environment sector: (i) water supply, (ii) wastewater collection and treatment, (iii) drainage and flooding, and (iv) solid waste collection and disposal. Following Thimphu Municipality, Phuentsholing Municipality is the second largest urban center in Bhutan. Its urban development plan identifies congestion and poor urban mobility as a key issue that restricts the municipality's growth. There is only one entry and exit point for the core area, which results in traffic congestion from local traffic and trucks transporting goods to and from Thimphu, and containers carrying raw materials and finished goods to and from the Pasakha industrial area. Bypass roads and bridges are required to divert traffic and reduce congestion. Samdrup Jongkhar Municipality (SJM) has recently been designated the fourth municipality of Bhutan. Structure and local area plans identify the need to improve road infrastructure, which is unplanned; water supply, which has insufficient capacity to meet current demands, lacks treatment, is of poor quality, and does not meet potable standards; water distribution, which is badly deteriorated with high leakage; sanitation, which is currently restricted to on-site facilities not properly maintained; and drainage, which is primarily an open drain system. Nganglam, which was designated the growth center of southeastern Bhutan and identified as a nationally important urban center with large industrial development potential, has not adequately invested in urban infrastructure. Nganglam's investment plan identifies urban expansion to the planned Rinchenthang town with water supply and urban transport as priority urban infrastructure needs. The project is consistent with government plans and strategies, and with the inclusive social development objective of ADB's Bhutan country partnership strategy, which aims to improve urban infrastructure services, upgrade city planning, and strengthen the planning and management functions of municipalities.

Description: The project will support the Government of Bhutan's efforts toward sustainable urban development in its two largest municipalities (Phuentsholing and Thimphu) and two emerging urban centers (SJM and Nganglam Town). It will have four outputs: (i) water supply and sanitation (WSS) infrastructure rehabilitation and expansion, (ii) mobility improvement, (iii) urban management strengthening, and (iv) project management and capacity development. This will lead to sustainable access to urban services in Chukha, Pemagatshel, SJM, and Thimphu districts (*dzongkhags*).

Safeguard Categories: Environment: B, Involuntary Resettlement: C, Indigenous Peoples: C

Expected Environmental and Social Issues (expressed at beginning of project): Draft EMPs were prepared as part of the three IEEs,, one each for Thimphu Municipality, SJM, and Phuentsholing Municipality. An environmental assessment

and review framework (EARF) was prepared to guide planning studies and detailed design of future investments in preparation of future financing. There are no specific details on environmental issues on the website.

The project will avoid land acquisition and resettlement impacts. A resettlement framework was prepared in accordance with the ADB SPS, 2009 and government laws to guide planning studies and detailed designs of future investments in particular to guide any land pooling, if required. All costs related to land acquisition and resettlement and/or rehabilitation will be borne by the government. The project will have no impacts on indigenous peoples and so ADB's requirements are not applicable. The communities will be involved in consultations for project planning, implementation, and any safeguard issues, with special attention given to include the poor and female-headed households.

Progress (from latest data on ADB website, August 2014): Procurement is ongoing for two contracts: (i) bridge works in Phuentsholing, and (ii) design-build-operate contract for wastewater treatment plant for Thimphu (in fact construction had started on several components as of August 2013).

Road Network Project II: ADB # 39225-022. ADB Approval: 10 Nov 2009

Rationale: Accessibility is Bhutan's key development issue. The trunk road network is dependent on a single east-west national highway running through the northern part of the country. The absence of a similar east-west highway running through the south has constrained travel in the southern part and hence development opportunities, including potential trade with India. Limited provision of feeder roads adds to the isolation of remote southern rural areas. The proposed project will construct critical sections of the southern east-west highway, which will facilitate industrial development in the southern areas and integrate them more effectively with their primary markets in India. Improved road safety and control of overloading and vehicle emissions are also required for the safe and efficient use of road assets with minimal adverse environmental impacts.

Description: The project will upgrade or construct five critical sections (about 180 kilometers [km]) of the southern east-west highway, including: (i) Manitar–Raidak, (ii) Raidak–Lhamoizingkha, (iii) Pangbang–Amshingwoong (Nganglam), (iv) Tsebar–Mikuri–Durung Ri, and (v) Samdrupcholing–Samrang. These proposed road sections provide access to the border crossings and have significant regional implications. Road improvement and construction works under the project include construction of roadways, including longitudinal drainage structures, installation of culverts and bridges, construction of new bridges and cross-drainage structures, and structures for resettlement and rehabilitation. The project will also enhance overall sector management capacity by providing (i) equipment necessary for the Government of Bhutan to enhance sector capacity in areas such as (a) quality survey, design, and construction; (b) road safety; and (c) control of overloading and vehicle emissions; (ii) on-the-job training for social and environmental requirements through detailed design and construction supervision consultants; and (iii) technical assistance to support the capacity building of the Department of Roads, including (a) enhancing knowledge of and skills in modern road technologies, especially with environmental considerations; and (b) enhancing and optimizing the road asset management systems. Expanded road transport capacity in the southern region will facilitate efficient and safe transport in the southern region of the country and with India and through India to Bangladesh and Nepal. This will promote industrial development in the southern economic hubs and increased regional trade through increased passenger and freight transport on the country's road network and regional transport and distribution system.

Safeguard Categories: Environment: A, Involuntary Resettlement: B, Indigenous Peoples: C

Expected Environmental and Social Issues (expressed at beginning of project): Some of the road segments fall inside environmentally sensitive areas. Most of the impacts are short term, reversible, and confined to the construction stage of the project. Most of the impacts can be minimized and addressed through mitigation measures that have been included in the engineering design and the EMP, which follows the principles of environmentally friendly road construction

advocated by the Department of Roads. All necessary mitigation costs have already been included in the engineering works. Both the EMP and the engineering costs were further updated after the detailed design studies were carried out and the updated EMPs were approved by ADB in July 2011.

Updated resettlement plans were prepared. Proof of compensation for some of the contracts was provided before civil works commencement of relevant sections. No impact on indigenous peoples is envisaged. Group discussions were undertaken with different stakeholders.

Progress (from latest data on ADB website, August 2014): Overall work progress to date is 76.47% (NH01, 82.29%; NH02, 50.93%; NH03, 86.22%; NH04, 74.99%; NH05, 47.68%; FR01, 100%; and FR02, 76.14%).

India

Bangalore Metro Rail Company Limited: Bangalore Metro Rail Transit System Project, ADB # 43912-014. ADB Approval: 31 Mar 2011

Rationale: Development of urban transport is one of the focus areas of urban infrastructure under Strategy 2020. The strategy also envisages the Asian Development Bank (ADB) helping developing member countries (DMCs) move their economies onto low-carbon growth paths by modernizing public transport systems. ADB can assist DMCs and their municipalities to address a range of environmental problems resulting from rapid urbanization. This includes supporting cleaner modes of transport.

Description: The scope of the project is to implement a metro rail project in Bangalore, including the development of 42.3 kilometers (km) of metro rail, 40 stations, 2 station depots, signaling, an electro-mechanical system, and all ancillary facilities and rolling stock. The metro alignment for the city would follow two main transit corridors: (i) an east-west corridor of 18.1 km starting at Byappanahalli and terminating at the Mysore Road terminal; and (ii) a north-south corridor of 24.2 km, starting at Nagasandra and terminating at Puttenahalli. Of the planned length, 8.82 km near City Railway Station, Vidhana Soudha, Majestic, and City Market will be underground sections, and the rest will be elevated.

Safeguard Categories: Environment: B, Involuntary Resettlement: C, Indigenous Peoples: C

Expected Environmental and Social Issues (expressed at beginning of project): The project is expected to contribute to significant environmental improvements for Bangalore city. A decrease in noise and air pollution along with reduced average fuel consumption is expected because of reductions in projected traffic growth volumes on the transit corridors (in a without-project scenario). Temporary adverse environmental impacts are expected largely during the construction phase of the project involving elements such as the elevated and underground sections of the metro rail alignment, stations, maintenance depots, and casting yards. Noise reduction measures include installing soundproof walls and soundproofing pads, and air quality monitoring equipment will be placed all along the alignments. Groundwater levels and quality are to be monitored during construction.

Social issues include acquisition of land and properties, cash assistance for rehabilitation, and appropriate compensation packages. Cash assistance to include a shifting allowance, inconvenience allowance, right to salvage material, transitional allowance, rental income loss allowance, business premises re-establishment allowance and a business loss allowance. Bangalore Metro Rail Corporation (BMRC) to meet the cost of restoring the affected portions of public property, including a school, hospital, park and religious structure. Affected slums to be rehabilitated through a new housing scheme developed in the Peenya area, with registrations in the name of women of the household (in compliance with international best practices). Public consultation required, with suggestions and comments from the community to be incorporated in the project design and execution.

Progress (from latest data on ADB website, August 2014): The infrastructure for phase 1 (43.2 km) is completed; well-functioning institutional and operational arrangements for managing the mass rapid transit (MRT) system; financially bankable structure is developed and implemented.

Karnataka Urban Infrastructure Development and Finance Corp. Limited (KUIDFC): North Karnataka Urban Sector Investment Program Tranche III, ADB # 38254-053. ADB Approval: 22 Aug 2012

Rationale: The proposed investment program is highly relevant to ADB's country strategy and program (CSP) for India, which rests on the three pillars of (i) pro-poor growth for reducing income poverty, (ii) social development for reducing human poverty, and (iii) good governance for leveraging and maximizing the impact of development.

Description: Upgraded urban infrastructure. Strengthened municipal management and project implementation capacity, leading to improved access to better urban services in 8 urban local bodies (ULBs). Expected improved quality of life in program ULBs and increased economic growth relative to the whole state.

Safeguard Categories: Environment: B, Involuntary Resettlement: B, Indigenous Peoples: C

Expected Environmental and Social Issues (expressed at beginning of project): The initial environmental examinations (IEEs) show that net environmental benefits are positive and large, including (i) improved urban environment from sewerage subprojects leading to improved public health, (ii) reduced flooding through drainage improvements, and (iii) improved water quality through lake development schemes. Investments around heritage sites will support tourism through improved management, parking, and sanitation. Any impacts during construction and operation will not be significant as larger facilities will be built in low density and nonsensitive areas. The environmental management plans contained within the IEEs will form part of the bidding and contract documents.

The project is designed to minimize land acquisition and resettlement impacts and facilities will be accommodated mostly within government-owned land or the public right-of-way. The proposed sewerage treatment plant in Yadgir requires 22.25 acres of private agricultural land affecting seven households (37 affected people). The implementation of the resettlement plan will be monitored by the project management unit (PMU) and program implementation unit with assistance from the supervision consultant and nongovernment organization (NGO). Safeguard reporting from the PMU to ADB will be done on a semiannual basis. There is voluntary land resettlement for the Sindhanur impounding reservoir. KUIDFC has noted (i) open negotiations with the landowners, and (ii) alternative project location options in the event negotiations do not succeed. For Gadag, where the section of the raw water transmission pipeline is to be laid in the shoulder of the State Highway 45, no works will begin in relevant sections until compensation has been paid as per ADB's approved resettlement plan for Loan 2705.

Progress (from latest data on ADB website, August 2014): Not provided on website.

Assam Urban Infrastructure Investment Program Tranche 1, ADB # 42265-023. ADB Approval: 18 Nov 2011

Rationale: Currently, only 30% of the population of about 1.0 million in Guwahati city, the capital of Assam, has access to piped water supply, and the rest depend on localized individual ground water sources, and water vendors who charge high rates. The city is divided into four water supply zones. Water supply projects in north and south-central zones are financed by the Japan International Cooperation Agency (JICA). In south Guwahati, water supply in the west zone is financed under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), and the proposed ADB assistance is

for the south-east zone. In addition to Guwahati, Dibrugarh also suffers from prolonged local flooding during the annual monsoon, due mainly to poor drainage. Because of the lack of sewerage and inadequate solid waste management, much of the area in the two cities drainage system becomes choked and severely polluted with untreated wastewater.

Description: The multitranche financing facility (MFF) adopts a strategic and integrated approach to sustainable urban environmental improvement in Guwahati and Dibrugarh, Assam, including water supply, wastewater treatment, solid waste management, drainage and a bus rapid transit corridor. Project 1 will support MFF management and implementation, including equipment, logistics, and the consultants to assist the program management unit (PMU) in detailed design, construction supervision, and related training and capacity building. Project 1 will provide improved and sustainable urban services at the standards set by the government in the cities of Guwahati and Dibrugarh in Assam through the delivery of improved and increased water supply, solid waste management, and drainage infrastructure (reduced flooding).

Safeguard Categories: Environment: B, Involuntary Resettlement: B, Indigenous Peoples: C

Expected Environmental and Social Issues (expressed at beginning of project): No details provided on the website; public consultations were provided for.

Progress (from latest data on ADB website, August 2014): Both the program management consultant and design and supervision consultants are fully operational and helping the PMU in the project administration. The government has been requested to expedite the process of engaging key positions in the PMU. One package involving construction of six storage reservoirs and allied works in Guwahati has already been awarded. The contractor has been mobilized in the field and preparatory works, a geotechnical survey of the sites is ongoing while construction of an approach road has commenced at one reservoir site. Another package involving construction of transmission main pipelines and allied works for water supply project in Guwahati has also been awarded and has commenced preparatory works. For the design, build, and operation of intake works, raw water rising main, water treatment plant, clear water pumping stations and allied works in Guwahati, preparation of the bidding documents is still ongoing. The contract for the construction of DTP drain box culverts and allied works in Dibrugarh has been awarded and preparatory works will commence soon. The bidding process for the design, build, and operation of a 100-metric ton processing plant and a 60-metric ton sanitary landfill site, and allied works in Dibrugarh was targeted for April 2014 (after receipt of the environmental clearance).

Bihar State Road Development Corporation: Bihar State Highways II Project, ADB # 44425-013. ADB Approval: 20 Sep 2012

Rationale: The project will scale up the original project by further expanding the highway upgrading component from 356 km to 610 km. It will help achieve the full extent of the improvements envisaged under the original project by covering additional geographic areas in north and south Bihar, increasing the number of project beneficiaries in poor villages, and optimizing access to the state highway network. It supports the Government of Bihar's priority to implement improvements quickly to ensure that the development impact of the state highway network is optimized and its benefits are reaped in a timely way. The project meets ADB eligibility criteria for additional financing as it (i) remains technically feasible, economically viable, and financially sound; (ii) is accorded high priority by the government; (iii) is consistent with the project's development objectives; and (iv) is consistent with the current country partnership strategy (CPS).

Description: The project will expand the original Bihar State Highways II Project output by rehabilitating and upgrading about 254 km of state highways in Bihar identified under the Bihar State Highways Development Program (BSHDP). These severely deteriorated highway sections are located in the very poor north and south parts of the state. The project will involve upgrading existing roads to two lanes, strengthening existing pavement, strengthening culverts and bridges,

and constructing new bridges and cross-draining structures. Consulting services will be provided to supervise the implementation of civil works. The project will support a more efficient and safe state road transport system supporting sustainable economic growth in Bihar.

Safeguard Categories: Environment: B, Involuntary Resettlement: A, Indigenous Peoples: C

Expected Environmental and Social Issues (expressed at beginning of project): Not evident on the website.

Progress (from latest data on ADB website, August 2014): Works are ongoing. Physical progress: State Highway-83, 2.3%; State Highway-86, 4%; State Highway-87, 4%; State Highway-88, 2.1%. The executing agency has identified additional plantations for State Highway-83 and State Highway-86. Traffic data collection has all been completed. Development of the traffic analysis zone system has been completed. The road safety specialist conducted exhaustive reviews of field conditions and produced road safety audits for Bihar State Highways.

Nepal

Nepal Electricity Authority: Electricity Transmission Expansion and Supply Improvement Project, ADB # 41155-013. ADB Approval: 15 Nov 2011

Rationale: The current available generating capacity of 705 megawatts (MW) in Nepal comes predominantly from hydropower. At system peak time, up to 400 MW of load is shed countrywide, depending on variations in available water resources and transmission limitations. Six hydropower projects totaling 592 MW are presently under construction. Another six projects with a total capacity of 1,335 MW are planned or proposed in the near to medium term. Limited transmission capacity in the western region of Nepal has restricted additional electricity imports through the western border with India. The first large-scale cross-border transmission line with India between Dhalkebar (Nepal) and Muzarffarpur (India), with a capacity of 1,000 MW, is at an advanced stage of preparation. This will enable Nepal to import electricity from India initially and later facilitate hydropower export. However, the full benefits of this critical regional connection can be harnessed only when adequate strengthening of the related transmission infrastructure within Nepal is undertaken.

Description: The project will improve the reliability of energy supply in Nepal and strengthen the transmission infrastructure needed to promote Nepal's capacity for cross-border energy trade. It will provide support in three critical areas in the electricity supply industry, which has experienced severe underinvestment: (i) electricity transmission capacity expansion, (ii) strengthening of distribution systems including those along the Tamakoshi (Khimti)-Kathmandu transmission line, and (iii) rehabilitation of selected small hydropower plants.

Safeguard Categories: Environment: B, Involuntary Resettlement: B, Indigenous Peoples: C

Expected Environmental and Social Issues (expressed at beginning of project): Alignment of transmission lines has avoided any environmentally and ecologically sensitive areas. Out of the total length of the Tamakoshi (Khimti)-Kathmandu line, 16 km will pass through some forest areas in Chanrawati Watershed, which is host to ecosystem services transaction but is not a legally protected area. Any loss of vegetation within the right-of-way will be directly offset by reforestation activities consistent with the requirements of the government. The Nepal Electricity Authority (NEA) will ensure that ongoing reforestation initiatives within the Chanrawati Watershed will not be affected. Installation of the second circuit for the Kohalpur-Mahendranagar line will not have any significant impacts, as no new transmission towers will be required and the existing right-of-way will be maintained. Decommissioned equipment and materials from the rehabilitation of distribution substations and the small hydropower plants are not expected to cause any risk

to community health and safety as these will be stored on site until they can be safely reused and redistributed to other substations. Disposal of unusable equipment will comply with national and international requirements such as the Stockholm Convention. The environmental management plan (EMP) includes mitigation measures, monitoring, and adequate budgetary provisions for its implementation. The EMP will be part of the bidding documents and the NEA will supervise the construction contracts and EMP implementation.

The project will have limited resettlement impacts. No landowner or household will lose 10% or more of their productive assets. A detailed resettlement plan will guide the resettlement process and describe the nature of impacts, range of and eligibility for entitlements, income and livelihood restoration, rehabilitation assistance, and compensation for losses incurred. The resettlement plan details the institutional arrangements for implementation, a procedure for grievance redress, a structure for periodic and regular monitoring and reporting of project activities, detailed cost and budget estimates, and a time-bound implementation schedule. The resettlement plan will be updated as needed and publicly disclosed to interested stakeholders on the ADB and NEA websites. There are no adverse impacts on indigenous groups. People using or living along the transmission line will be temporarily impacted and restricted to using affected land for agricultural purposes. Affected people will be eligible for compensation in line with the ADB Safeguard Policy Statement requirements. No further clearance or acquisition of land will be required for the project. Project-affected people will be consulted on a regular basis as needed, in a timely, open, transparent, and culturally sensitive manner and in the local language.

Progress (from latest data on ADB website, August 2014): The various components under the project are at different stages of procurement and/or implementation. Kohalpur–Mahendranagar 132 kV second circuit transmission line project: (a) A1,L1 (Stringing of second circuit in Kohalpur–Mahendranagar 132 kV transmission line): the contract has been awarded; (b) A1,L2 (Kohalpur-Mahendranagar Substations): the package is under procurement process. 220 kV/400 kV Tamakoshi (Khimti)–Kathmandu transmission line and related facilities: recruitment of consultant to undertake this component is under process. Chapali grid substation: procurement is under process. Energy-based livelihood training has been started. Expanded electricity distribution system expansion projects in east and west (Lot 1 and Lot 2) are in the process of awarding contracts. Upgrading of distribution lines along the planned Tamakoshi–Kathmandu transmission line (Lot 3) is in final stage of procurement. Rehabilitation of Tinau (1 MW) and Sundarijal (640 kilowatts) hydropower plants: bids are expected to be invited in Q3 2014. PMU has been in place since 31 May 2012. Livelihood training has started and is expected to result in livelihood enhancement.

Second Small Towns Water Supply and Sanitation Sector Project, ADB # 41022-022. ADB Approval: 17 Sep 2009

Rationale: Based on a survey in 2002, it was reported that water availability was only intermittent in many areas, half of the gravity flow systems in the hills needed major repair, and more than half of the tube wells in the Terai were contaminated. Nepal's coverage could be considerably lower if the strict definition of access to safe drinking water were applied. Access to improved sanitation services was estimated to be only 27% in 2006 according to the World Health Organization and United Nations Children's Fund, and the Millennium Development Goal (MDG) target of 53% (67% for urban and 52% for rural) for sanitation will not be met, if the rate of increase in coverage between 2000 and 2006 is maintained until 2015. Currently, 265 towns (153 Terai and 112 hill towns) are classified as small towns in Nepal, with a total population of 3.6 million. These towns are being developed haphazardly, although they play an important role in creating economic links between the rural areas and the country's urban economy. Water supply in many small towns is deficient, both in terms of coverage and water quality. There is a serious and urgent need to improve water supply and sanitation services in small towns.

Description: The project has three components. Component 1 will develop an efficient, effective, and accountable urban water supply and sanitation sector by establishing and implementing policies, establishing service standards, and enhancing sector coordination. Component 2 will entail development of safe, accessible, and adequate water supply and sanitation facilities in about 20 small towns. Component 3 will strengthen governance and capacity for project management and operation. The project is expected to lead to improved health and economic and environmental living conditions of people in small towns in Nepal, through improved, affordable, and sustainable water supply and sanitation services which are governed and managed by locally accountable representative bodies (improved water supply services for about 240,000 people).

Safeguard Categories: Environment: B, Involuntary Resettlement: B, Indigenous Peoples: B

Expected Environmental and Social Issues (expressed at beginning of project): Not specifically mentioned on the website; public consultations have been held.

Progress (from latest data on ADB website, August 2014): Twenty-one town projects are at various stages of construction. The sanitation component has been designed and preparation for procurement is ongoing. Household latrine construction has started. Water users and sanitation committees (WUSCs) have been formed in all project towns. The Sector Efficiency Improvement Unit (SEIU) has completed assessment of sewerage and wastewater management and initiated consultation on waste water quality discharge standards. A total of 21 contracts for water supply and sanitation subprojects have been awarded (6 in 2011, 7 in 2012, and 8 in 2013) and work is under progress. Wastewater management facilities for two towns are designed and will go for bidding in Q2 2014. In total, 1,710 households are selected for output-based aid service delivery. Activities for construction of household latrines have started: 25 household latrines have been constructed in Sandhikharka. As of February 2014, pipeline laying work is ongoing in 17 towns and total 746 km pipeline is laid against the project target of 1,400 km, and 2,976 households have been connected against the target of 16,000. WUSCs have been formed in the town projects with 36% women representation on an average, mainly as treasurers and/or vice-chairs. The project management office (PMO) prepared and finalized six guidelines, which are being used by PISUs, NGOs, and design and supervision consultants.

Rural Reconstruction and Rehabilitation Sector Development Program, ADB # 40554-022. ADB Approval: 4 Dec 2007

Rationale: The country has one of the lowest road densities for a landlocked country, with some villages as far as 13 days' walk from the nearest road. The lack of connectivity is a serious constraint for economic development and social inclusion. The assessment made under the MDGs indicates the need for an additional 30,000 km of rural roads by 2015. The country currently has about 22,000 km of rural roads. Road standards vary significantly. Less than half are motorable and of this only about 60% are categorized as all-weather. The need for development of rural transport, particularly of rural roads, is thus huge and will require a major investment in the medium term. The ADB country operations business plan for Nepal for 2008-2010 foresees that substantial peace and development dividends could be gained by the economy in the coming years. The proposed Rural Reconstruction and Rehabilitation Sector Development Program builds on ADB's key role in supporting the processes for institutionalizing good governance and inclusive development for poverty reduction, to which the government has demonstrated commitment. By extending support, ADB will provide much needed resources for the state building process and poverty reduction by simultaneously (i) improving the policy environment for inclusive growth, and (ii) reconstructing and rehabilitating rural infrastructure.

Description: Improved rural roads. Developed and improved community-based supplementary rural infrastructure. Enhanced equity, employment, and income opportunities for the poor and disadvantaged. Strengthened institutional capacity of Ministry of Local Development, Department of Local Infrastructure Development and Agricultural Roads, district development committees, and communities. Improved project management. Improved connectivity, enhanced

economic and employment opportunities, and increased access to market and social services of rural communities will help to reduce rural poverty in hill, mountain, and Terai districts, where isolation and hardship are common.

Safeguard Categories: Environment: B, Involuntary Resettlement: B, Indigenous Peoples: B

Expected Environmental and Social Issues (expressed at beginning of project): The project is not likely to cause any significant environmental impacts since several safeguards are incorporated in the project design. At the selection stage, subprojects excluded those that (i) exceeded thresholds warranting environmental impact assessments, or (ii) were designated environmentally sensitive areas. Most subprojects were designed and implemented using the Look East Policy approach, which minimizes construction impact on the environment.

Resettlement plans for three core subprojects, as well as a resettlement framework for the project were prepared. All involuntary land acquisitions were compensated and those affected assisted. The required compensation was substantially completed before award of civil works contracts and fully completed thereafter, while other rehabilitation activities were continued during project construction. Subprojects did not have an adverse impact on the socioeconomic condition of indigenous peoples. The improved road network augmented access of indigenous communities to various services, including health, education, and market opportunities. The project promoted participatory approaches through the decentralized government process. Subprojects were prioritized through existing village development committee participation in finalizing district transport master plans or other sectoral development plans.

Progress (from latest data on ADB website, August 2014): A total of 43 rural roads totaling 837 km were selected for construction, of which 826 km have been completed and the remainder is being completed using government resources. Fifteen motorable bridges (405 meters) were selected, 8 (155 m) of which have been completed, and the remainder is to be completed using government resources by 30 June 2014. Construction of 364 water supply schemes has been completed. Construction of 288 trail bridges has been completed. A total of 213 supplementary infrastructure works have also been completed. Participation and representation of women in various planning and management committees almost meets the target with women 28% in village infrastructure construction coordination committees (VICCCs), 37% in Results Building Group (RBG) leadership position (33% target), and 39% women in RBGs, as against the 50% target. All district development committees have been provided with project orientation and awareness training. A total of 22,614 people received the training. Five regional workshops on these subjects have been completed. Refresher training and workshops were held. Three training sessions on water quality testing were implemented. Piloting of a sector-wide approach (SWAp) for rural road maintenance has already been started in seven pilot districts.

Safeguard Implementation: How Can We Make It More Meaningful?
Assessment of the South Asia Experience

This publication presents the (i) safeguard systems of Bhutan, India and Nepal; (ii) differences in national safeguard laws and institutional processes with the Asian Development Bank's safeguards policy; (iii) issues with safeguard design, implementation, and monitoring at the project level; (iv) effectiveness of safeguard training; and (v) capacity needs of project staff, government agencies, consultants, nongovernment organizations, contractors, and local communities involved with infrastructure projects. In the end, suggestions to make the safeguard process more meaningful have been provided.

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ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to the majority of the world's poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

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