Initial Environmental Examination

Nepal: Disaster Resilience of Schools Project

June 2018

Prepared for the Asian Development Bank

CURRENCY EQUIVALENTS

(as of 8 February 2018)

Currency unit	–	Nepalese Rupee (NRs)
NRe1.00	=	$ 0.0097
$1.00	=	NRs103.41

ABBREVIATIONS

ADB	Asian Development Bank
CLPIU	Central Level Project Implementation Unit
CSA	Concerned Sector Agency
CSSF	Comprehensive School Safety Framework
DDR	Due Diligence Report
DEO	District Education Office
DLPIU	District Level Project Implementation Unit
DOE	Department of Education
DRM	Disaster Risk Management
DRSP	Disaster Resilience of Public School Infrastructure and Community Project
DSC	Design and Supervision Consultants
EA	Executing Agency
EARF	Environmental Assessment and Review Framework
EIA	Environmental Impact Assessment
EMIS	Education Management Information System
EMP	Environmental Management Plan
EPA	Environment Protection Act
EPR	Environment Protection Rules
ES	Environment Specialist of DSC
GON	Government of Nepal
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IA	Implementing Agency
ICT	Information, Communication and Technology
IEE	Initial Environmental Examination
LAC	Local Area Committee
MOEST	Ministry of Education, Science and Technology
MOF	Ministry of Finance
MOFE	Ministry of Forest and Environment
NGO	Non-governmental Organization
NOCs	No-Objection Certificates
NRA	National Reconstruction Authority
O&M	Operation and Maintenance
PIU	Project Implementation Unit
PPTA	Project Preparation Technical Assistance
REA	Rapid Environmental Assessment
SIDA	Structural Integrity Damage Assessment
SM	Safeguards Monitor

SPS	Safeguards Policy Statement
SSDP	School Sector Development Plan
TLC	Temporary Learning Centre
TOR	Terms of Reference

NOTES

(i) In this report, "$" refers to US dollars.

(ii) The fiscal year (FY) of the Government of Nepal ends on 15 July. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2018 ends on 15 July 2018.

Table of Contents

CHAPTER I: INTRODUCTION

A. NAME AND ADDRESS OF THE INSTITUTION PREPARING THE IEE

1. The National Reconstruction Authority (NRA) is the proponent of this Project. The contact address of the proponent is as follows:

The National Reconstruction Authority
Singha Durbar, Kathmandu, Nepal
Phone No.: +977-01- 4211482, 4211465
Fax: +977-01-4211473
E-mail: info@nra.gov.np
Web: www.nra.gov.np

B. BACKGROUND

2. The fragile and young geology of the Himalaya, unstable slopes, high topographical variation, low-lying areas in the plains, extreme climatic events, and environmental degradation have made Nepal one of the most vulnerable countries in the world in terms of natural disasters, such as earthquake (11th most vulnerable country in the world), flood risks (30th most vulnerable countries in the world)[1], landslide, drought, cold and heat waves, thunderstorm, fire and avalanches. Nepal is identified as the 13th most climate change-vulnerable countries in the World.[2] Erratic weather patterns, unpredictable and intense rainfall causing flash floods, reduced snowfall at high altitudes, and increasing temperature are the results of global warming changing the climatic regime. Sitting precariously above the Nepal has witnessed massive earthquakes roughly at a gap of every half century causing significant casualties, physical damage and losses to the economy.[3] In this context, the country witnessed devastating mega earthquake in 2015, the damages and losses due to which is estimated at $7 billion, with 8,790 casualties, 22,300 injuries, and overall 8 million people were affected.[4] The earthquake damaged many private and public buildings, and damaged 7,800 school buildings at various level.

3. School safety is identified as an explicit objective in the 2016-2023 School Sector Development Plan (SSDP) being implemented by the Ministry of Education, Science and Technology (MOEST), Government of Nepal (GON).[5] SSDP is an on-going Result Based Lending (RBL) program of ADB and supported by a group of eight joint financing partners. In 2009, the Ministry of Home Affairs integrated school safety in its National Strategy for Disaster Risk Management in Nepal and designated them as the key centres for raising disaster awareness and reducing the vulnerability and exposure of communities. Comprehensive School Safety Framework (CSSF), 2017 has recognized various activities under the safe learning facilities, school disaster risk management, and risk reduction education.[6]

4. The Structural Integrity Damage Assessment Study (SIDA, 2016) estimated 2,234 schools being heavily damaged in the severely affected 14 districts of Nepal by the 2015 earthquake. These damaged schools are not in use[7], whereas 3,569 partially damaged schools are in use in these districts but require retrofitting. All of these schools are vulnerable to future seismic events.

---

1 UNDP 2004, A Global Report: Reducing Disaster Risk

2 Climate Change Vulnerability Index 2012, Maplecroft CC and Environmental Risk Atlas

3 Documented earthquakes in 1934 (8.4 magnitude), 1980, 1988, 2011 and 2015.

4 The Impact of Nepal's 2015 Gorkha Earthquake-Induced Geohazards. International Center for Integrated Mountain Development, Kathmandu, Nepal, May 2016.

5 Ministry of Education. 2016. *School Sector Development Plan*. Objective No. 6.

6 United Nations Office for Disaster Risk Reduction. *Comprehensive School Safety Framework*. March 2017.

7 Department of Education and the World Bank. 2016. *Structural Integrity and Damage Assessment*. Kathmandu; and forms the basis of categorizing climate risk impact on the project.

5. In this background, the Disaster Resilience of Schools Project (hereinafter referred as the "DRSP" or "the Project") was conceptualized to support in disaster risk reduction and meeting the school reconstruction needs. The Project aims in achieving SSDP objectives to improve the quality & access to school education and management.

C. RATIONALE AND OBJECTIVE FOR PREPARING IEE

6. The DRSP project is classified as environment Category B, which requires IEE assessment as per the provision of the Safeguards Policy Statement 2009 (SPS) of ADB.

7. The objective of the IEE assessment is to identify the impacts on physical, biological, socio-economic and cultural environment of the project area and to propose mitigation measures to avoid, minimize or compensate for such impacts by devising appropriate mitigation measures. The specific objectives of the proposed IEE include to:

- identify the major issues that may arise as a result of proposed work on bio-physical, socio-economic and cultural environment of the project area
- recommend practical and site-specific environmental mitigation and enhancement measures, prepare and implement environmental monitoring plan for the sub-project
- make sure that IEE is sufficient for the proposed project, and
- provide information on the general environmental setting of the project area as baseline data.
- Transfer the findings of IEE on potential impacts and typical mitigation measures in the project Environmental Assessment and Review Framework (EARF).

CHAPTER II: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

8. This Chapter summarizes existing policies, plans, laws, and guidelines of Nepal and safeguards policy and principles of ADB those were referred while preparing this IEE. The Chapter also informs the decision-makers and stakeholders about the legal requirements for environmental safeguards plan preparation and environmental management plan implementation.

A. ADB'S SAFEGUARD POLICY STATEMENT, 2009

1. Safeguard Policy Statement of ADB

9. ADB's Safeguard Policy Statement 2009 aims to ensure the environmental soundness and sustainability of projects and to support the integration of environmental considerations into the project decision-making process. The Policy requires that (i) impacts are identified and assessed early in the project cycle, (ii) plans are prepared and implemented to avoid, minimize, mitigate or compensate potential adverse impacts, and (iii) affected people are informed and consulted during project preparation and implementation. The environmental safeguard policy is basically guided by 11 policy principles (see Appendix I).

10. 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 not possible; and

(iii) help borrowers/clients to strengthen their safeguards systems and develop the capacity to manage environmental and social risks.

11. ADB requires environmental assessment of all projects and programs as defined by the environmental screening checklist (REA) that considers the type, size, and location of the proposed project. Accordingly, the projects are classified into Category A (with potentially significant environmental impacts most of which are irreversible); Category B (with potentially less significant environmental impacts with only a few irreversible); Category C (unlikely to have significant environmental impacts). Initial Environmental Examination (IEE) is required for category B projects. No environmental assessment is required for category C projects although their environmental implications need to be reviewed. ADB will not finance projects that do not comply with its safeguard policy statement, nor will it finance projects that do not comply with the host country obligations under international law.

12. The proposed DRSP project is classified as environment Category B as per the ADB policy. Hence, this IEE is prepared for the project.

B. NATIONAL LAWS, POLICIES, ACTS AND RULES

2. Legal Framework

a. National Legislation

13. The Constitution of Nepal 2015 defines the right of people to live in clean environment as one of the fundamental rights of its citizens (Article 30). The Article 30 (3) also confirms not to prevent making the necessary legal provisions for a proper balance between environment and development in

the development works of the nation. Article 51 f(2) calls for development of environment friendly and sustainable infrastructure. Article 51 g(1) states to protect, promote and make sustainable use of natural resources. Also Article 51 g (7) stresses to adopt appropriate measures to abolish or mitigate existing or possible adverse environmental impacts on the nature, environment or biological diversity. Proceeding from and conformable to the Constitution, the Government of Nepal has passed a series of environmental laws and policies and implementing regulations and standards. These legislations that provide the framework within which the environmental assessment is carried out in Nepal are presented in the following Table 2.1. The subprojects (individual school infrastructure) prepared under the project shall comply with these environmental laws, rules, standards, and guidelines while preparing, monitoring and reporting environmental safeguard performance of the project.

Table 2.1: The Relevant National Environmental Policies and Legal Provisions of GON

SN	Environmental Policies and Legal Provisions	Description
1	Three Years Plan, 2017-2020, GON	Requires all projects to be formulated and constructed based on methods that optimally utilize local skills and resources and generate employment opportunities. Attention is paid towards minimizing the impacts of climate change and protecting environment. It aims to minimize adverse impacts on human, property, culture, environment and economy by disasters. The policy aims to integrate disaster risk management in all development activities in order to reduce loss of human and properties.
2	National Environmental Impact Assessment Guidelines, 1993, GON	Provides guidance to project proponent on integrating environmental mitigation measures, particularly on the management of quarries, borrow pits, stockpiling of materials and spoil disposal, operation of the work camps, earthworks and slope stabilization, location of stone crushing plants, etc.
3	Climate Change Policy, 2011, GON	The policy includes climate adaptation and disaster risk reduction; low carbon development and climate resilience; access to financial resources and utilization; capacity building, peoples' participation and empowerment; study, research, technology transfer, climate friendly natural resources management and institutional set up with legal provisions and monitoring and evaluation.
4	National Water Supply and Sanitation Policy 1993	Water quality shall be monitored that is supplied to school and labor camps.
5	National Environmental Guidelines for School Improvement and Facility Management in Nepal, 2004	Provides guidance to project proponent to ensure environmental safeguards in school facility development activities.
6	Wastewater Management Policy, 2006	Government of Nepal is currently drafting a policy on Wastewater management (Draft Wastewater Management Policy 2006) to develop policy guidelines for planning, development, operation and management. Financing and delineation of role and responsibilities of different stakeholders in wastewater management. The proposed primary objectives of the policy are: a) improving sanitary condition by ensuring compliance to the wastewater standards, b) reducing morbidity and mortality rates with appropriate wastewater management, c) facilitating construction and management of storm and sanitary sewerage systems, d) improving sanitary condition of local streams, rivers, lakes and ponds and other water bodies, e) establishing coordination and integrated approach among the stakeholders for planning, construction, operation, maintenance and management of sewerage system, f) establishing partnership between the government and private sector for promotion of appropriate technologies for wastewater disposal and management and financing, and g) developing mechanism for knowledge dissemination and awareness building among the stakeholders and beneficiaries. The Policy restricts disposal of wastewater into nature or open space without treatment to a safer level.

SN	Environmental Policies and Legal Provisions	Description
7	Environment Protection Act, 1997, GON updated time to time	Any development project, before implementation, shall pass through environmental assessment, which may be either IEE or an EIA depending upon the location, type and size of the projects. Provision for dealing with pollution control, and conservation of national heritage. The IEE/EIA shall be approved by the government. The EPA (i) sets out the review and approval process of IEE and EIA; (ii) stipulates that no one is to create pollution that would cause significant adverse impacts on the environment of harm to public life and health, or to generate pollution beyond the prescribed standards; (iii) specifies Ministry of Environment being in charge to conduct inspection of approved projects to ensure that pollution prevention, control or mitigation is carried out according to the approved IEE or EIA; (iv) provides the protection of objects and places of national heritage and places with rare plants, wildlife, and biological diversity; and (v) states that any person/party affected by pollution or adverse environmental impact caused by anybody may apply to the prescribed authority for compensation to be recovered from the polluter/pollution generator.
8	Environment Protection Rule 1997 (amendment, 2007), GON updated time to time	The EPR and its schedules clearly provide various step-wise requirements to be followed while conducting the EIA/IEE study. It also obliges the Proponent to timely consult and inform the public on the contents of the proposal. Provision for dealing with pollution control, and conservation of national heritage is also present. Schedule 1 listed projects require IEE and Schedule 2 listed projects require EIA study. The criteria are based on size of projects and cost. It also lists environmentally sensitive areas where any proposal regardless of size and cost will require an EIA.
9	Solid Waste Management Act, 2068-2011	Article 4 rests the responsibility of the solid waste management under the prescribed standards with the persons or institution that has generated the waste; Article 5 mandates reduction of the waste at source and making arrangements to dispose the disposable (biodegradable? Organic?) solid waste within their own area or making arrangement for the reuse thereof and discharging the remaining solid waste thereafter; Article 9 make the institution responsible to transport the solid waste to the waste disposal facility; Article 18 provisions for the service for the solid waste management; Article 21 make local body responsible for the monitoring of solid waste management; Article 38 stipulates discharge of solid waste without the consent of the local body as an offence and Article 39 provisions for the punishment /penalty in case of offense.
10	Solid Waste (Management and Resources Mobilization) Rules, 2013	Solid Waste Management Rules has provided authority to local bodies for the segregation, transportation and disposal of solid waste as well as operation of sanitary landfill site. Local bodies may also empower the company, organization and agency, producing solid wastes, for segregating, reducing the solid wastes at its source, reuse and recycling use solid wastes and mobilize community and non-governmental organization for creating awareness for the management of the solid waste. Local bodies have also the authority to determine service charge for solid waste management.
11	Lands Act 2021–1964	The Act maintaining inventories of the lands, landowners and tenants in a modern fashion and making timely improvements in the provisions pertaining to current cultivation of the lands subject to land revenue; Article 4 provisions the registration of land parcels and maintain and inventory of the land owners. It spells for provisions of recovering land revenue; and prohibits cultivation on public lands and registration of such land.
12	Land Acquisition Act, 1977 and Land Acquisition Rules, 1969, GON	Specifies procedural details on land acquisition and compensation with an aim to minimize hardships on project affected persons/families.
13	Labor Act, 2017	Labor Act, 2074 is applicable to entity, which has been defined to include company, private firm, partnership firm, cooperatives, association or other organization ("entity") in operation, or established, incorporated, registered or formed under prevailing laws to undertake industry or business or provide service with or without profit motive. • Labor Act has provided flexibility in hiring providing different modes of hiring as per the requirement of the entity:

SN	Environmental Policies and Legal Provisions	Description
		• The entity should formulate the safety and health policy as per the Regulation or Directive. Such policy should be registered with Labor Office. • Labor Act has set out the duties of employer towards workers which include making appropriate safety and health arrangement, arrangements ensuring no adverse effect on workers from use, operation, storage or transport of chemical, physical or biological liquids, disseminating necessary notice, information and training related to safety and health arrangements, etc. It also sets out the general obligation of employer towards non-workers such as putting the signs to indicate the safety or health hazards, to manage the gas, chemicals waste of the entity so as not to cause adverse effect on local animals, people or environment, etc.
14	Labor Rule 1993	Labor Rule 1993 advises the working hour for women and minor (14-16 year old). The Regulation guides the circumstances in which non-Nepali citizen could be employed. The regulation also describes salary, benefits and welfare provisions. These are fixed by remuneration fixation committee. The Regulation also guides on compensation upon injury or death, and categorize type of disability with compensation. It also details leave and medical leave for workers.
15	Child Labor (Prohibition and Regularization) Act, 2001	It prohibits engaging children in factories, mines or similar risky activities and to make necessary provisions with regard to their health, security, services and facilities while engaging them in other activities. Child having not attained the age of 14 years is strictly prohibited to be engaged in works as a laborer. Engagement of child in works as a laborer against his/her will by way of persuasion, misrepresentation or by subjecting his/her to any influence or fear or threat or coercion or by any other means is prohibited.
16	Building Act, 2055BS	Building Act, 2055 BS (1999) has the necessary provisions for the regulation of building construction works in order to protect building against earthquake, fire and other natural calamities, to the extent possible. It has the provisions relating to design and approval of design/map of building, and states that the building shall be built under the supervision of a designer.
17	Forest Act, 1993 (amendment, 2007), GON	Requires decision makers to take account of all forest values, including environmental services and biodiversity, not just the production of timber and other commodities. It includes several provisions to ensure development, conservation, management, and sustainable use of forest resources based on appropriate planning.
18	Ancient Monument Prevention Act 1956	Digging of ground for building, water supply pipes or sewerage in an area declared as preserved monument areas shall have prior approval/permit from the Department of Archaeology (Clause 5, Article 3).
19	National Park and Wildlife Conservation Act, 1973, GON	Addresses the conservation of ecologically valuable areas and indigenous wildlife. The Act prohibits trespassing in park areas, prohibits wildlife hunting, construction works in park area, damage to plant and animal, construction of huts and house in park area without permission of authorized persons. It lists 26 species of mammals, 9 species of birds, and 3 species of reptile as protected wildlife.
20	Soil and Watershed Conservation Act, 1982, GON	Article 10 prohibits the following on land within a protected watershed area prescribed as those on which floods may occur, without the prior permission of the concerned Watershed Conservation Officer: (i) block, store or divert in anyway water from any stream, rivulet, waterfall or underground water for any purpose; (ii) cut or destroy natural vegetation and other forest products; (iii) cause accumulation and sedimentation of accumulated boulders, rocks, sand, soil, mud etc.; (iv) extraction of natural aggregates; (v) dumping of solid waste.
21	Explosive Material Act, 1962, GON	It requires prior approval of Chief District Officer to purchase and use explosives.
22	Local Government Operation Act, 2017	Local Government Operation Act, 2074, formulated in accordance with the spirit of Constitution of Nepal, grants the local level units legislative, executive and judicial rights. Local governments now have authority to manage teachers, staff and education up to the basic level—Grade 8—and oversee basic medical care. The local legislature has the power to formulate local laws in line with the Act drafts provided by the Centre, while the local judiciary can decide cases related to irrigation, daily wages and pastures, among others. The smallest units among three tiers of the government can set up their own city

SN	Environmental Policies and Legal Provisions	Description
		police force, issue land ownership certificates and collect revenue on property, besides registering births, deaths and marriages. They are also allowed to levy the taxes on house rent, entertainment, property, tourism, among others, in compliance with the tax laws of the Central and Provincial governments.
23	Solid Waste (Management and Resources Mobilisation) rules, 2013	Solid Waste Management Rules has provided authority to local bodies for the segregation, transportation and disposal of solid waste as well as operation of sanitary landfill site. Local bodies may also empower the company, organization and agency, producing solid wastes, for segregating, reducing the solid wastes at its source, reuse and recycling use solid wastes and mobilize community and non-governmental organization for creating awareness for the management of the solid waste. Local bodies have also the authority to determine service charge for solid waste management.
24	Water Resources Rules, 1993	The Regulation sets out the procedure to register a WUA and to obtain a license and sets out the rights and obligations of WUA and license holders. Rule 12 to 21 stipulates the provision and procedures of licensing for the water resource utilization; Rule 32 to 35 stipulates provisions, procedures and responsibilities for the acquisition of land and property for the development of water resources;
25	Forest Rules, 1995, GON	Elaborates legal measures for the conservation of forests and wildlife. Tree cutting clearance is required from Department of Forest. Expenses incurred for cutting trees and transportation shall be borne by the infrastructure developer.
26	Nepal National Building Code, 2060	The national Building Code of Nepal was endorsed in 2060/4/12 BS (July 2003). It deals with the strength of buildings, consideration safety and fire hazards, construction materials etc.
27	National Drinking Water Supply Standard, 2006	The Nepal Drinking Water Quality Standards and Guidelines (including standard limits, guidelines for the required frequency for water quality monitoring, and the process and schedule for measuring the standards in active use in the country).
28	Nepal Ambient Air Quality Standards 2012 (2069B.S)	Limits of the ambient air quality parameters around the construction sites
29	Nepal Noise Standards 2012 (2069 B.S.)	Noise levels for different land use categories and noise generating equipment.

b. International Environmental Agreements

14. Nepal is party to the following international environmental agreements that have broad relevance to works and environmental assessment of works under the project: (i) World Heritage Convention, 1978- for parties to ensure the protection and conservation of the cultural and natural heritage situated on territory of, and primarily belonging to, the State; (ii) Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention), 1987- conserve and wisely use wetlands (i.e. maintaining their ecological character) as a contribution towards achieving sustainable development locally and throughout the world; (iii) Convention on Biodiversity, 1992- require the environmental assessment for projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects; (iv) UN Framework Convention on Climate Change, 1992 and subsequent protocols- take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate it's adverse effects; and (v) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1996- minimize the amount of toxicity of hazardous waste generated, manage the hazardous and other wastes they generate in an environmentally sound manner and as close as possible to the source of generation. The Project shall also refer the World Bank's Environment, Health and Safety (EHS) Guidelines to follow the pollution prevention and control technologies consistent with international good practices. When host country regulations differ from these levels and measures, the Project will achieve whichever is more stringent.

CHAPTER III: DESCRIPTION OF THE PROJECT

A. PROJECT INTRODUCTION

15. DRSP Project has selected 163 schools (67 schools for first batch and 96 schools in second batch) for the reconstruction of school buildings and 138 schools (66 and 72 schools in two successive batches) for retrofitting in 14 earthquake affected districts. Annual number of active school works projected during project period is shown table 3.1 below:

Table 3.1: Annual number of active school works projected

2018		2019		2020		2021		2022	
Recon	Retrof	Recon	Retrof	Recon	Retrof	Recon	Retrof	Recon	Retrof
67		96	16		106		16		
Total		Total		Total		Total		Total	
67		112		106		16			

16. Ramechhap and Dolakha are two among the eight project districts under DRSP project. The following 6 schools were studied for the purpose of preparing this IEE:

1. Ramechhap District

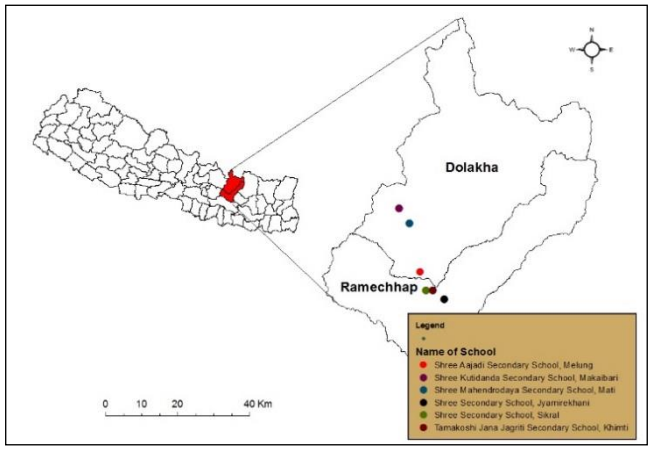
(i) Shree Secondary School, Jyamirekhani, Likhu Rural Municipality-6
(ii) Shree Tamakoshi Janajagriti Secondary School, Khimti Bazar, Likhu Rural Municipality-6
(iii) Shree Secondary School, Sikral, Gelu, Manthali Municipality-12

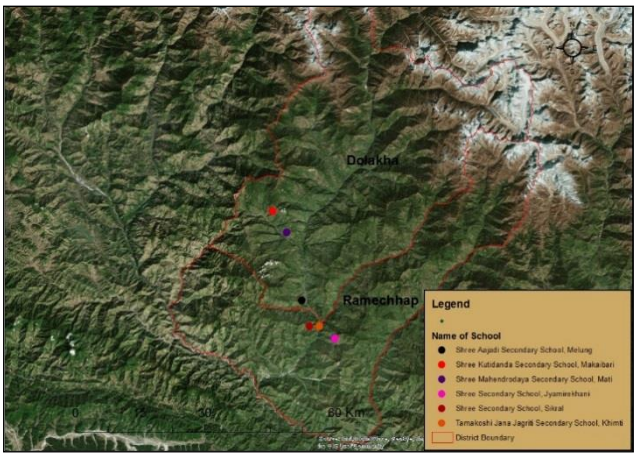
2. **Dolakha *district***

(i) Shree Aajadi Secondary School, Birauta, Melung Rural Municipality-7
(ii) Mahendrodaya Secondary School, Mati, Bhimeshwor Municipality-5
(iii) Kutidanda Secondary School, Makaibari, Bhimeshwor Municipality-12

17. Location of the six schools is shown in following map in Figure 3.1 and 3.2.

Figure 3.1: Location map of the six selected schools





B. SALIENT FEATURE OF THE SAMPLE SCHOOLS

18. Details of the proposed schools are given in the following Table 3.2.

Table 3.2: Details of the Proposed Sample Schools

S.N.	Topics	Details
A.	**Shree Secondary School, Jyamirekhani, Likhu Rural Municipality-6 Ramechhap**	
1.	Location	Likhu Rural Municipality-6 (then Khimti VDC-7), Ramechhap, Province No.3
2.	Land area	3652.58 sq.m. (7-2-3-2)
3.	Demolition area	650.95 sq.m.
4.	New built up area	616.2 sq.m.
5.	Total no. student	410
6.	Total no. of teachers	15
7.	**Building details**	
	Existing blocks	RCC building (1), Toilet (2),
	Proposed blocks	classroom block (with nine rooms), classroom blocks with seven rooms, toilet
	Other structure, facilities	entry gate, fencing, retaining wall, water supply facility with provision of water tank, septic tank with soak pit, green space, electricity
8.	Project cost	Nrs.52,645,458.32
B.	**Shree Tamakoshi Janajagriti Secondary School, Khimti bazaar, Ramechhap**	
1.	Location	Likhu Rural Municipality-6 (then Khmti VDC-1), Ramechhap
2.	Land area	3204.00 sq.m. (6-6-3-0.27)
3.	Total built up area to be demolished	464.51 sq.m.
4.	Demolition area	612.85 sq.m.
5.	New built up area	551
6.	Total no. of teachers	21
7.	**Building details**	
	Existing blocks	5 classroom buildings, 2 toilets
	Proposed blocks	22 room combined block, 12 room classroom block
	Other structure, facilities	green space, fencing, entry gate, water tank, septic tank and soak pit, electricity facilities
8.	Project cost	Nrs.74,815,774.22
C.	**Shree Secondary School, Sikral, Gelu, Ramechhap**	
1.	Location	Manthali Municipality-12, Gelu (then Gelu-1), Ramechhap, Province No. 3
2.	Land area	2758.2 sq.m. (5-6-2-3.95)
3.	Demolition area	255 sq.m.
4.	Total no. student	450
5.	Total no. of teachers	11
6.	**Building details**	
	Existing blocks	3
	Proposed blocks	classroom block with 12 room and classroom block with nine rooms
	Other structure, facilities	boundary wall, entry gate, water tank, septic tank and soak pit, electricity facility
7.	Project cost	Nrs.58,265,885.56
D.	**Aajadi Secondary School, Melung, Dolakha**	
1.	Location	Melung Rural Municipality-7 (then Melung VDC-4), Birauta, Dolakha, Province No. 3
2.	Land area	1382.87 sq.m. (2-11-1-3.87)
3.	Demolition area	287.6 sq.m.
4.	New built up area	656.09 sq.m.
5.	Total no. student	300
6.	Total no. of teachers	18

S.N.	Topics	Details
7.	**Building details**	
	Existing blocks	office block, classroom block with truss, TLC
	Proposed blocks	three story classroom block with nine rooms, toilet
	Other structure, facilities	Fencing, entry gate, water tank, septic tank and soak pit, electricity facility
8.	Project cost	30879613.14
E.	**Shree Mahendrodaya Secondary School, Bhimeshwor Municipality, Mati, Dolakha**	
1.	Location	Bhimeshwor Municipality-5, Mati, Dolakha, Province No. 3
2.	Land area	4950.75 sq.m. (9-11-2-3.25)
3.	Demolition area	333.18 sq.m.
4.	New built up area	1113.55 sq.m.
5.	Total no. student	291
6.	Total no. of teachers	20
7.	**Building details**	
	Existing blocks	classroom block, office block, TLC
	Proposed blocks	combined block with 22 rooms
	Other structure, facilities	Fencing, entry gate, water tank, septic tank, soak pit, green space, electricity facility
8.	Project cost	Nrs.46,359,116.94
F.	**Shree Kutidanda Secondary School, Bhimeshwor Municipality, Makaibari, Dolakha**	
1.	Location	Bhimeshwor Municipality-7, Dolakha, Province No. 3
2.	Land area	10298.8735 sq.m. (20-3-3-2.46)
3.	Demolition area	235.76 sq.m.
4.	New built up area	1113.78 sq.m.
5.	Total no. student	349
6.	Total no. of teachers	18
7.	**Building details**	
	Existing blocks	12
	Proposed blocks	combined block with 14 classroom, 1 floor admin, 4 lab and 1 library, 1 toilet block
	Other structure, facilities	Fencing, entry gate, water tank, septic tank, soak pit, playground, electricity facility
8.	Project cost	Nrs.50,638,353.46

Note: Master plan drawings of all these six schools are presented in the following pages. All subprojects will include toilet.

C. DESIGN CONSIDERATION

19. The project has followed the "Guidelines for Developing Type Design for School Building; and the Nepal: Post Earthquake Reconstruction of Schools, 2016" to design the school buildings. The key considerations for developing the type design are (i) identification of the needs to be met, (ii) architectural and space planning requirements, (iii) integrated disaster risks and environmental sustainability, (iv) Child, Gender and Differently–abled (CGD) friendly, (v) materials and construction technology, (vi) structural design, (vii) site infrastructure and landscape design considerations, (viii) basic landscape design, and (ix) climate smart design considerations.

20. Similarly, the relevant provisions of the national building codes of Nepal are considered in space allocation of classrooms, access, multistoried, library, laboratories, school administration, teacher/staff room, sanitary facilities as well as circulation and social spaces.

21. The disaster resilience for various hazards is integrated in different steps of the school building design and construction process, e.g. for earthquake, storms and strong wind, floods and landslide, fire safety, and lightening. The first step is site consideration avoiding subsidence/fill areas, water-logged, swampy or marshy areas near river, rock falling areas, tree hazards, and electric high-tension line.

22. Various considerations are taken for ensuring environmental sustainability. Issues considered at different steps of the design and construction includes soil and environmental conservation, water conservation, waste disposal and recycling, energy conservation and use of renewable energy, use of locally available materials, land use planning with hazard mapping, and greenery development.

D. MATERIALS USED

23. Raw materials for building construction will be brick, cement, tiles, paints, steel bar and wire for concrete reinforcement, and galvanized steel and PVC pipes for water supply. Steel bars and cement are available in the local market. Coarse and fine aggregates will be produced at site from excavated materials, collected from quarries, or purchased from the licensed quarry operators. Steel sections have replaced use of wood for door and window frames.

E. TEMPORARY LEARNING CENTRES (TLC)

24. The schools may lack sufficient number of classrooms to run classes for all students during construction period. To overcome this problem, TLCs could be establishment within the school compound or in the vicinity of the area. Since Shree Secondary School, Jyamirekhani, Shree Secondary School, Gelu and Shree Aajadi Secondary School, Birauta does not have enough land to establish TLC within their school compound. Hence, they will have to temporarily acquire the private land on lease.

F. WASTE GENERATION DUE TO WORK IMPLEMENTATION

1 Solid Waste

25. Biodegradable and non-biodegradable wastes will be generated from the work as well as school operation. Hence, proper method to minimize waste generation, reusing or recycling, and disposal of residual waste needs to be established. Open dumping of waste must be restricted, which may generate vectors (mosquito, flies, rats, scavenging birds) and diseases.

2 Wastewater

26. School design have provision of septic tank with soak pit. Adequate surface drainage will be provided for rain water collection and use.

G. MACHINERY AND EQUIPMENT

27. Types of machines and equipment required for building construction are concrete pump, excavator, loader, concrete mixture, vibrator, wielding machine and compressors.

H. PROJECT IMPLEMENTATION SCHEDULE

28. The estimated completion period of each school subproject is estimated at 2 years (including both hardware and the software components of the project). Implementation will consist of 3 month pre-construction phase, and 18 months construction phase. The rest of the time will be utilized with the implementation of the software component. The overall project implementation schedule is shown in the following table 3.3. The copy of master plan for each school subproject is presented in the Appendix.

Table 3.3: Project Implementation Schedule

SN	Activities	(QTR) 2018				(QTR) 2019				(QTR) 2020				(QTR) 2021				(QTR) 2022			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1.	**Reconstruction and Retrofitting of School Buildings**																				
1.1	Detailed engineering designs and bidding documents																				
1.2	Procurement of civil works contracts for reconstruction of school buildings																				
1.3	Award of civil works contracts																				
1.4	Construction																				
2.	**Management Activities**																				
2.1	Recruit design and supervision consultant (DSC)																				
2.2	Finalize land acquisition																				
2.3	Complete civil contract packages																				
2.4	Implementation of Environmental and Social Safeguard requirements																				
2.5	Annual/Mid-term review																				
2.5	Project completion report																				
Inputs of Environment Specialist in Synchronization with Project Activities																					
a.	Support to CLPIU																				
b.	Support to DLPIU																				
c.	Preparation of Semi Annual Environmental Monitoring Report																				
d.	Inputs from Environment Monitor																				

CHAPTER IV: DESCRIPTION OF THE ENVIRONMENT OF THE PROJECT AREA

29. The following sections presents the baseline information on the existing physical, biological, socio-economic and cultural environment of the subproject areas.

A. PHYSICAL ENVIRONMENT

1 Topography and Altitude

30. Six schools selected for this IEE study lie in the central mid-hills of Nepal. The topography of school area is characterized by valley, ridges and hill slopes. Tamakoshi Janajagriti Secondary School lies in river valley near the confluence of Tamakoshi River and Khimti Khola. The other five schools lie on the moderate to steep sloped terrain. The altitude of Tamakoshi Janajagriti Secondary School in Khimti bazaar is at lowest elevation among the six schools at 550m amsl. Kutidanda Secondary School at highest elevation in Bhimeshwor Municipality is at 1,500m amsl.

2 Soil

31. Although there are micro-level variations, the school areas exhibits two distinct soil types in a broad sense. They are (i) colluvial, and (ii) alluvial. Soils of the school sites are predominantly developed by the colluvial depositions. They are characterized by moderately deep, sloppy, stony and well drained. The structures vary from sub-angular blocky to granular with good percolation. The dominant color is red Awith textures ranging from Silt Clay (SC) to Loam (L). The alluvial soils are developed around Khmiti bazaar of Tamakoshi Janagariti Secondary School site. Soils here are deposited by Tamakoshi river and Khimti river.

3 Land Use Pattern

32. Land use pattern of the surrounding area of the school sites were observed and noted during field survey. It was found that the landuse patterns were dictated by topography (elevation and slopes), climate, soils and availability of irrigation facility. Accordingly, lands in the surrounding areas of school sites are forests, agriculture, settlements, grazing land and others (streams, rock out crops etc). The forests are dominated by mixed type of *Shorea robusta, Pinus roxburghii*, *Alnus Nepalensis* and *Schima wallichi* species. Agriculture is another important land use practice in the surrounding areas of school site. The major crops grown are rice, wheat, maize, millet, pulses, oilseeds and vegetables. Besides cultivation of crops, farm grown trees such as fodder, fuel and fruit species are grown around settlement areas. The farm grown trees are mostly used for fruits, fodder, fuelwood, and maintain micro-climate, and conserve soil and water. There are few patches of grazing lands where open livestock grazing is practiced.

4 Climate

33. These six schools area enjoys sub-tropical to warm temperate types of climate. These types of climate are found mostly in between 800-2,000 meter elevation in the mid-hills of Nepal.

5 Rainfall

34. In general, the rainy season in the project area starts from June and ends in September. During the rainy season, monsoon blows across the Bay of Bengal and delivers about 80% of the annual rainfall.

In the dry season, the northwest wind brings dry cold wind bearing little moisture and accounts for the remaining 20% of the annual rainfall. The average annual precipitation of the years (1996-2002) recorded at Manthali Station (in Ramechhap district) is 1183.36 mm. While the record of 2004-2008 at the same station shows average annual precipitation 903.88 mm. The lower average annual precipitation value from 2004-2008 indicates the amount of rainfall is getting lower than the previous years. According to locals, the rainfall pattern is changing with decreasing rainfall and drying up of the natural springs. Average annual rainfall is 2043.5ml in Dolakha.

6 Temperature

35. Temperature in the sample school area varies with elevation. Temperature decreases with increasing altitude. The months of April, May, June and July are the hottest months with maximum temperature reaching upto 37.7ºC in April. December and January are the coldest months with minimum temperature falling down to 11ºC in December.

7 Geology

36. According to the geological study, the school areas lie in the Seti Formation, Midland Group. The Seti Formation is represented by phyllite and quartzite. According to engineering geology, the school sites are characterized by weathered rocks of phyllite, and colluvial and alluvial deposits. Generally low height cut slope is found on hill slope. This is attributable to soil depth and strength of the rock and geo-tectonics. The school areas are found to be alluvial and colluvial deposit. Alluvial deposits are pale grey in color. The clasts of the alluvial deposits are generally schist, phyllite, quartzite, which are rounded to oval in shape. Colluvial deposits are commonly brown in colour with angular to subangular clasts. Minor slope instabilities are observed in lower sides of Kutidanda, Mahendrodaya and Aajadi Secondary School in Dolakha district, but are not of high risk.

37. Specific information on seismic hazard of the school sites are not available. Such type of information is available only in regional basis (Figure 4.1). Both Dolakha and Ramechhap district has experienced significant impacts of Gorkha earthquake. Epicentre of the aftershock of the earthquake was in Sunkhani of Dolakha district. More than 200 people were killed and over 2,500 were injured by this aftershock of May 12, 2015.

8 Hydrology and Drainage

a. Surface Water

38. All these six schools in Ramechhap lie within the watershed of Tamakoshi River. Tamakoshi Janajagriti Secondary School lies at left bank of Tamakoshi river in Khimti Bazar. There are small seasonal water streams in the nearby area of other remaining schools. They contain water during monsoon season and become dry during winter season. Except Tamakoshi Janajagriti Secondary School, other school sites lie at hill slopes and ridges hence there is less problem of water logging. Such topographical features have good external

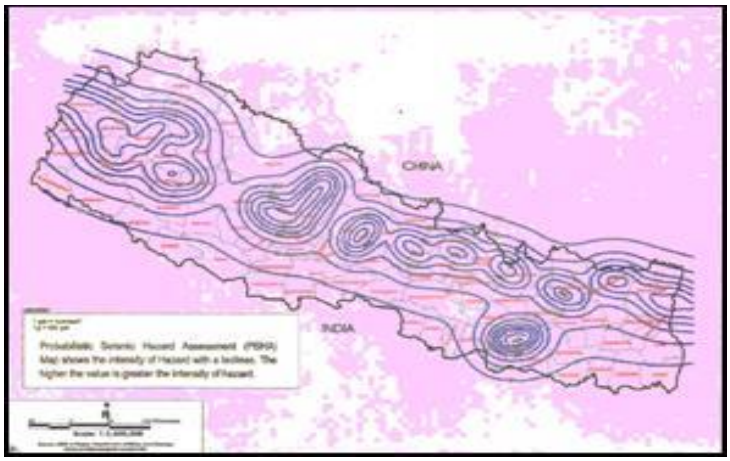


Figure 4.1: Probabilistic Seismic Hazard Map

drainage patterns hence no external drainage problem is faced. Besides, these school sites have not faced any internal drainage problem.

b. Ground Water

39. The schools lie in the hilly ecological region of Nepal where the potentiality of ground water resources is limited.

c. River Flooding

40. Local stakeholder informed that river flooding was reported to be common during the monsoon in Tamakoshi and Khimti Rivers, but there's no risk of flood and river bank cutting to Tamakoshi Janajagriti School in Khimti Bazar. There's no risk of flooding in the remaining five schools.

9 Water Quality

41. Although the secondary information on water quality of the rivers and rivulets in the nearby areas of school sites are not available, it is assumed that the quality of these water resources appears to be good. There are no chemically polluting industries and other sources of pollution in the surrounding areas of the schools. These are being widely utilized for drinking, washing and irrigation purposes.

10 Air and Noise Quality

a. Air Quality

42. Though there is a lack of secondary information on air quality for the school sites, the ambient air quality is expected to be within the National Ambient Air Quality Standards (NAAQS) of Nepal as there are no industries and traffic volume is very low. Due to similar reasons noise levels in the school area is expected to be within permissible standards prescribed by the Ministry of Forest and Environment (MOFE).

b. Noise Quality

43. There are no industries in the surrounding area of above mentioned schools. Air pollution is caused by fugitive dust from vehicle movements particularly over unpaved roads, and construction activities and wind action on unpaved exposed surfaces. Gas emissions come from household cooking, open burning, and moving vehicles. Emissions from these sources are scattered/spread apart both in terms of locations and timing. No major or concerning noise pollution exists in the school vicinities.

B. BIOLOGICAL ENVIRONMENT

1 Forest

a. National Parks and Protected Areas

44. The sample schools do not lie within any national park, wildlife reserve, conservation area, hunting reserve, including their buffer zone area, other protected areas or any other kind of environmentally sensitive areas.

b. Forest and Vegetation

45. Vegetation coverage in Ramechhap district is 34.58% (541.02 km²) forest, and 15.82% (247.34 km²) bushes and grassland[8]. It includes all types of vegetation without differentiating between dense and open/degraded forests. According to local informants, the forest vegetation cover in the district is in

[8] Ramechhap District Profile, 2072 (2015)

increasing trend after the handover of forests to Community Forest Users Groups (CFUGs). Similarly, Dolakha district has 46,022.82 ha (21.41%) forest area out of 214,870ha total area of the district.

c. Community Forest

46. There are community forests (CFs) in the surrounding area of the schools. These forests are the sources of fuel-wood, fodder, litter, timber and other non-timber forest products (NTFPs). They are managed by the community and known by the name of Community Forests. After the promulgation of Forest Act, 1993 and Forest Rule and Regulation 1995, the Rangers and Forest Guards of the Range Posts have become busy in campaigning for Community Forestry awareness, identifying the forest users for different community forests and in forming Forest User's Group (FUG). According to the present forestry sector policy, the management responsibility for protecting, harvesting and regenerating the community forest have been given to FUGs. CFUG can use 75% of the income from community forest for the community development activities and the rest 25% for the community forestry development activities.

Table 4.1: CFUG within ZoI of Schools

S. N.	School and Concerned Ward of Rural Municipality/ Municipality	Name of Community Forest Users Group in the Ward
1.	Shree Secondary School, Jyamirekhani, Ward No. 6 of Likhu Rural Municipality, Ramechhap	Sallebhir CFUG, Bhalukhop CFUG
2.	Tamakoshi Janajagriti Secondary School, Khmti Bazar, Ward No. 6 of Likhu Rural Municipality, Ramechhap	Masarpakha CFUG, Patal cfug, Jyamirekhani CFUG, Aakashe CFUG, Dhanmane CFUG, Sansare CFUG
3.	Shree Secondary School, Sikral, Gelu, Ward No.12 of Manthali Municipality, Ramechhap	Bhalubatase CFUG, Panchakanya CFUG, Jalkepani CFUG, Setidevi CFUG, Seradevi CFUG
4.	Aajadi Secondary School, Birauta, Ward No. 7 of Melung Rural Municipality, Dolakha	Rumti Ramche CFUG, Karnakali CFUG, Kol dhale CFUG, Kalokhola CFUG
5.	Mahendrodaya Secondary School, Mati, Ward No. 5 of Bhimeshwor Municipality, Dolakha	Bichaur CFUG, Sundarimai CFUG, Kamalamai CFUG, Kamalamai CFUG, Barshedanda CFUG, Simsungure CFUG, Mahankal Bhagwati CFUG, Chyanse CFUG, Sitakunda CFUG, Budha Bhimsen CFUG, Khaharepakha CFUG
6.	Kutidanda Secondary School, Makaibari, Ward No. 7 of Bhimeshwor Municipality, Dolakha	Thangsa Deurali CFUG, Charnawati CFUG, Majhkharka Lisepani CFUG, Bhirmuni Devisthan CFUG, Bhasmepakha CFUG, Kupri Salleri CFUG

Source: Field Survey, 2017

47. The dominant forest types existing in the surrounding area of the schools are Sal & Salla (*Shorea robusta and Pinus roxburghii*) forests in Ramechhap district and *Pinus roxburghii* forests and Uttis (*Alnus Nepalensis*) in Dolakha district. Similarly, Chilaune (*Schima wallichi)* species is also found in surrounding areas of all schools. These forests contain diverse types of large trees, small trees and shrubs, and bushes and grasses species. They are used for timbers, fuelwood, fodder, litter, wild fruits, and other NTFPs purposes.

48. *Shorea robusta* and *Bombax ceiba* are the protected plant species found in surrounding areas of schools in Ramechhap district. *Acacia catechu* is also found along the river bank of Tamakoshi river near Tamakoshi Janajagriti Secondary school in Khimti Bazar. The first species offers high value timber and the second is valuable for commercial purposes and third is used for house building purposes. *Shorea robusta* is banned for commercial felling, transportation and export including their fruit/seed, leaf and twigs. Similarly, commercial felling, transportation and export include pod/seed; leaf, bark and wood for *Acacia*

catechu[9] are also banned. The major tree species available in the surrounding area of schools are given in Table 4.2**.**

Table 4.2: Major Tree Species found within ZoI of Schools

Local name	Botanical Name	Family	Forest Act	IUCN	CITES
Amala	*Phyllanthus emblica*	Euphorbiaceae			
Bar	*Ficus spp.*	Moraceae			
Boddhairo	*Lagerstroemia parviflora Roxb.*	Lythraceae			
Bhalayo	*Rhus spp*	Anacardiaceae			
Chilaune	*Schima wallichi*	Theaceae			
Chiuri	*Aesandra butyracea*	Sapotaceae			
Dhale Kutus	*Castanopsis indica*	Fagaceae			
Phaledo	*Erythrina stricta*	Leguminosae			
Gayo	*Bredelia retusa*	Euphorbiaceae			
Gidari-kalo	*Premna integrifolia*	Verbenaceae			
Jamuna	*Syzigim cumini*	Myrtaceae			
Kabro	*F. lacor*	Moraceae			
Khayar	*Acacia catechu (L.f.) Wild*	Leguminosae	Protected	T	3
Khirra	*Sapium insigne (Royle) Benth. Ex Hook.f.*	Euphorbiaceae			
Khote salla	*Pinus roxburghii*	Pinaceae			
Lampate	*Daubanga sonneretidoes*	Lythraceae			
Mayal	*Pyrus pashia*	Rosaceae			
Musure katush	*Castanopsis tribuloides*	Fagaceae			
Nibaro	*Ficus auriculata*	Moraceae			
Paiyun	*Prunus ceratoides*	Rosaceae			
Phaledo	*Erythrina species*	Leguminosae			
Pipal	*Ficus religiosa*	Moraceae			
Sal	*Shorea robusta Gaertn.*	Dipterocarpaceae	Protected		
Simal	*Bombax ceiba*	Borabacaceae	Protected		
Tuni	*Cedrela toona*	Meliaceae			

Source: Field survey, 2017

49. The forests on the ridge and hill slope areas play a vital role in recharging rain water and releasing it to the downhill areas where villages and farm lands are generally located.

d. Shrub and Small Tree Species

50. The school areas are rich in shrub and small tree species. They offer medicinal and aromatic values. Until recently, the values of these plant species are not harnessed for livelihood support. Easier access to these bio-diversities will enhance sources for improvement of livelihoods of the local people in the area. Apart from this, these plant species are highly valuable from soil conservation point of view. They provide close canopy cover to the ground and thereby preclude losses through surface run-off and soil erosion even during high intensity of rainfall. The dominant shrub and small tree species existing in the surrounding areas of the school sites are given in Table 4.3**.** None of them are endangered or rare species.

[9] Nepal Rajpatra Part-3, Section 51, No. 36, dated 2058/9/16 BS (December 1999)

Table 4.3: Shrub and Small Tree Species found within ZoI of Schools

Local Name	Botanical Name	Family
Ankhitare	*Walsura trijuga*	Meliaceae
Asuro	*Adhotoda vasica*	Acanthaceae
Dhairo	*Woodfordia fructicosa*	Lythraceae
Dhusure	*Colebrookea oppositifolia*	Labiatae
Ghodtapre	*Centella asiatica (L.) Urban.*	Umbelliferae
Ipil-Ipil	*Leucaena leucocephala*	Fabaceae
Jhigani	*Eurya acumiata*	Theaceae
Ketuki	*Agave americana L.*	Agavaceae
Lajjavati	*Mimosa pudica L.*	Leguminosae
Satibayer	*Rhus parviflora Roxb.*	Anacardiaceae
Sajivan/Kadam	*Origanum vulgare L.*	Labiatae
Simali	*Vitex negundo*	Verbenaceae
Vanmara	*Eupatorium adenophorum Spreng*	Compositae

Source: Field survey, 2017

e. Grass Species

51. The grass species belong to Gramineae family. They are good sources of food for wild and domestic animals. The grass species are highly effective for protecting different types of soil from erosion on the hillslopes. They are characterized by deep root system and light structure of the shoot and provide function of armoring. They are highly potential for bioengineering purposes. They can thrive in harsh condition. Until recently, their potentialities are harnessed only in natural state. The dominant grass species that were observed during field survey are presented in Table 4.4. None of them are rare or endangered or rare species.

Table 4.4: Grass Species found in within ZoI of Schools

Local Name	Botanical Name	Family
Arthunge	*Heteropogon contortus (L) Beauvois*	Gramineae
Babiyo	*Eulaliopsis binata (Retz.) C.E. Hubbard*	Gramineae
Banso	*Digitaria sps, Eragrostos sps*	Gramineae
Dubo	*Cynodon dactylon*	Gramineae
Kans	*Saccharum spontaneum*	Gramineae
Khar	*Saccharum spontaneum*	Gramineae
Salima	*Chrysopogon gryllus (L.) Trin.*	Gramineae
Siru	*Imperata cylindrical*	Gramineae
Ulla	*Themeda caudate (Ness)A. Camus*	Gramineae

Source: Field survey, 2017

2 Fauna

a. Mammals

52. The individual mammal plays vital role in balancing the existing ecosystem, dispersal of plant seed, and maintaining food chain. List of commonly found mammal species and their status in the forests in the district and around schools are given in Table 4.5.

Table 4.5: Species of Mammals found within ZoI of schools

Name			Family	CITES	IUCN	Forest Act
Local	English	Scientific				
Bandar	Monkey	*Macaca Assamensis*	Cercopithecidae	2	VU	Protected
Chituwa	Common Leopard	*Panthera Pardus*	Felidae	1	LR/nt	
Dumsi	Porcupine	*Hystrix hodgsoni*	Hystricidae			
Kharayo	Indian hare	*Lepus nigricollis*	Leporidae			
Lokharke	Squirrel	*Funambulus pennati*	Sciuridae			
Mal samproo	Yellow throated marten	*Martes flavigula*	Mustelidae	3		
Syal	Jackal	*Gangetica Canis aureus*	Canidae	3		

Source: Field Survey, 2017

Legend: LR/LC= Lower Risk/Least Concern; VU= Vulnerable; NT= Near Threatened; DD=Data Deficient; and EN=Endangered

b. Birds

53. According to local people and district profile[10], birds with local habitat and migratory nature are found in the surrounding areas of the proposed school sites. No species protected under the National Parks and Wildlife Conservation (NPWC) Act or IUCN endangered list is available in the surrounding areas of the proposed school sites. The commonly found species of birds are given in Table 4.6**.**

Table 4.6: Bird Species in the District and Around the Schools

Name			Family	CITES
Local	English	Scientific Name		
Bhangera	Sparrow	*Passer domesticus*	Passeridae	
Dhukur	Red Turtle Dove	*Streptopelia tranquebarica*	Columbidae	
Huchil	Owl Bam	*Tyto alba*	Tytonidae	2
Kaag	Crow	*Corous macrorhynches*	Corvidae	
Kalij	Pheasant	*Lophura leucomelana*	Phasianidae	
Koili	Cuckoo	*Eudynamus scolopacea*	Cuculidae	
Luiche	Jungle Fowl	*Gallus gallus*	Phasianidae	
Mayur	Peacock	*Pavo cristatus*	Phasianidae	
Sarung	Myna	*Gracula religiosa*	Sturnidae	3
Titra	Himalayan quail	*Ophrysia superciliosa*	Phasianidae	

Source: IUCN, Nepal, (2005). Nepal`s Illustrated Biodiversity Primer

c. Reptiles

54. Different types of reptiles are found in the forest and around the schools, although the locals informed that poisonous snakes are not recorded in the area, and sighting of snakes have become rare. Other reptiles like common lizards are found around the school area.

3 Aquatic Species

55. The rivers and streams of Nepal are rich in fish population. Although, the sample school areas do not have habitat for aquatic life. Tamakoshi River near Tamakoshi Janajagriti Secondary School in Khimti Bazar, Ramechhap, is a good habitat of aquatic life and fish species like Katle (*Neolissochilus hexagonolepis*) and Asala (*Schizothorax plagiostomus*) are found in abundance. The rehabilitation of schools will not impact on fish and fishermen living in the area.

[10] Ramechhap and Dolakha District Profiles, 2072 (B.S.) (2015)

4 Protected, Rare or Endangered Species

56. Most of the existing species of mammals are commonly found species except monkey (*Macaca assamensis*) which is the protected species in Nepal. The locals informed that common leopard (*Panthera pardus*)- categorized as having lower risk and not threatened is sighted sometime in the surrounding forest. *Macaca assamensis* is also seen in the forest which is categorized vulnerable in the IUCN Red List. However, the wild animals do not habitat within the subproject sites and will not be affected by subproject activities.

C. SOCIO-ECONOMIC ENVIRONMENT

1 Population and Communities

57. The Constitution of Nepal 2015 defines the right of people to live in clean environment as one of the fundamental rights of its citizens (Article 30). The Article 30 (3) also confirms not to prevent making the necessary legal provisions

58. The existing attributes of population, including household number, total population, male and female population and major ethnic groups in the concerned wards (as per new provision of local levels) of the schools are presented in Table 4.7**.**

Table 4.7: Demographic Characteristics of Concerned Wards of Schools

SN	School and concerned ward of Rural Municipality/ Municipality	Household	Total Population	Male	Female	Major Ethnic groups
1.	Shree Secondary School, Jyamirekhani, Ward No. 6 of Likhu Rural Municipality, Ramechhap	968	4,278	1951	2,327	Newar, Tamang, Magar, Chhetri, Brahmin, Sunuwar, Bhujel, Dalit (Damai, Kami, Sarki)
2.	Tamakoshi Janajagriti Secondary School, Khmti Bazar, Ward No. 6 of Likhu Rural Municipality, Ramechhap	968	4,278	1951	2,327	Brahmin, Chhetri, Tamang, Magar, Newar, Sunuwar, Bhujel, Dalit (Damai, Kami, Sarki)
3.	Shree Secondary School, Sikral, Gelu, Ward No.12 of Manthali Municipality, Ramechhap	562	2,643	1,161	1,482	Brahmin, Chhetri, Tamang, Magar, Newar, Bhujel, Dalit (Damai, Kami, Sarki), Gurung, Pahari
4.	Aajadi Secondary School, Birauta, Ward No. 7 of Melung Rural Municipality, Dolakha	533	2,249	1,000	1,249	Brahmin, Chhetri, Tamang, Magar, Newar, Bhujel, Dalit (Damai, Kami, Sarki), Gurung, Thami, Sanyasi, Gharti
5.	Mahendrodaya Secondary School, Mati, Ward No. 5 of Bhimeshwor Municipality, Dolakha	1,140	4,198	1,818	2,380	Brahmin, Chhetri, Tamang, Magar, Newar, Bhujel, Dalit (Damai, Kami, Sarki)
6.	Kutidanda Secondary School, Makaibari, Ward No. 7 of Bhimeshwor Municipality, Dolakha	862	3,364	1,521	1,843	Brahmin, Chhetri, Thakuri, Tamang, Newar, Thami, Bhujel, Dalit (Damai, Kami, Sarki)

Source: CBS, 2011 and website of Ministry of Federal Affairs and Local Development, January 2018

2 Religion and Ethnicity

59. The major religions practiced in ZoI of the schools are Hinduism, Buddhism and other religions like Christianity. Ethnic composition of the school area consists of Chhetri-Brahmin, Newar, Tamang, Magar, Gurung and others (Bhujel, Sunuwar, Thami, Damai, Sarki etc.). Although the school area comprises diverse ethnic composition, the communities live together in peace and harmony.

Table 4.8: Settlements in the Concerned Ward of Schools

S. N.	School and concerned ward of Rural Municipality/ Municipality	Settlement Names
1.	Shree Secondary School, Jyamirekhani, Ward No. 6 of Likhu Rural Municipality, Ramechhap	Khanigaun, SImldanda bazaar, Keurini, Gairi, Jyamire, Ratmata, Katunje, Simle, Dharapani, Swara
2.	Tamakoshi Janajagriti Secondary School, Khmti Bazar, Ward No. 6 of Likhu Rural Municipality, Ramechhap	Khimti bazaar, Sanghutar Bazar, Thapagaun, Arubote Tol, Sanghutar Tol
3.	Shree Secondary School, Sikral, Gelu, Ward No.12 of Manthali Municipality, Ramechhap	Sikral, Dhurpang, Ambash, Gelu, Jalkini, Kaule, Harre, Chinde, Arubote, Archale, Batase
4.	Aajadi Secondary School, Birauta, Ward No. 7 of Melung Rural Municipality, Dolakha	Jogigaun, Thamigaun, Sisneri, Simpani, Jyamire, Thadipairi, Khadkathok, Dandatol, Kalichaur, Garbe, Jambote, Bhirbari, Kotamuni, Sunabirta, Gairagaun, Dhandbari, Narayantar, Jaisigaun, Kattike, Birauta, Khanigaun
5.	Mahendrodaya Secondary School, Mati, Ward No. 5 of Bhimeshwor Municipality, Dolakha	Hoksila, Bisuntole, Mathani, Oligaun, Majhmati, Siran Mati, Pucharmati, Jilu, Jamsuda, Kaule
6.	Kutidanda Secondary School, Makaibari, Ward No. 7 Of Bhimeshwor Municipality, Dolakha	Makaibari, Sakhini,Kupri, Ukhubari, Suspa, Chothang, Charikot, Bonch, Sera, Magapauwa

Source: Field Survey, 2017

3 Occupation

60. Agriculture is the dominant occupation in the district and the villages where the schools are located. Other occupation is business, service sector, government employment, remittance and local employment in small scale trades and services. The people living in the villages still rely on subsistence agriculture, and commercial agriculture is still not developed. Some commercial farming of high value crops including oranges, pomegranate, ginger, alainchi, and vegetable has started in Khimti bazaar of Ramechhap and Maikaibari of Bhimeshwor Municipality, Dolakha.

4 Agriculture and Livestock

61. *Agriculture.* Of the total area (1564.32 km²) in Ramechhap district, 32% (50,908 ha) is cultivable; and of the total area of 214,870 ha of the Dolakha district, 12.49% (26,844 ha) is cultivable. The total area of the VDCs where the six sample schools are located is 5227.88 ha.[11] The major crops grown are rice, wheat, maize, millet, wheat, pulses, and vegetables (summer and winter). Especially, Ramechhap VDC is famous for high quality Junar (sweet orange) and pomegranate production. Melung area of Dolakha district is famous for persimmon and Bhimeshwor Municipality is famous for kiwi production. These fruits are marketed in cities, and are available in the supermarkets of Kathmandu. Other fruits grown are banana, papaya, mango in low altitude, and pear, orange and other citrus fruits in higher altitude area. The Khimti bazaar of Ramechhap and Makaibari of Bhimeshwor Municipality has potentiality of off-season vegetables farming.

[11] Ramechhap and Dolakha District Profile (DDC, 2015)

62. *Livestock.* Livestock reared the area are cow, buffalo, pig, goat and poultry. The farmers are also practicing honey bee-keeping in Khimti area.

5 Mineral Resources and Development

63. Studies in the past by the DCC Ramechhap and Dolakha have reported existence of a few non-metallic as well as metallic mineral mines in the districts. The major mineral resources recorded are iron, copper, magnesite, marble ores at different places of the districts. Besides these, other non-metallic resources of the area include slate-stones, sulphur, limestone, sand and clay.

6 Tourism Development

64. These two districts have potentiality of tourism development, which is not yet fully harnessed. Ramechhap has potential for tourism development from where wide range of river valleys, hilltops and mountain views can be seen. Kalinchwok, Dolakha Bhimsen, Shailung, Khandadevi Temple, and Jiri are some of the important religious and tourist destinations in the two districts.

7 Industries

65. There are no large scale industries in the ZoI of schools. The small scale agro-based cottage industries operating in the areas include bamboo based materials (dalo, namlo, nanglo, bhakari etc.); agriculture and livestock based products (poultry, woolen blankets, ghee and dairy cream, fruit juice, honey); and non-timber forest products based (NTFPs) such as Lokta, herbal medicines, and Ritha. Besides this, small scale handicrafts such as, handwoven woolen cloths and metallic ornaments are also produced in the area.

8 Health and Sanitation

66. The school surrounding settlement has good health facilities provided by both government and NGOs. The districts have District Hospital (DH); Primary Health Centers and Health Posts. In the nearby settlements of the school, there are small pharmacies where general medicines are available.

67. The major diseases reported in the areas include skin disease, ARI, intestinal worms, diarrhea, and gastritis. The local households have toilet facilities in the home. However, the schools lack environmentally safe disposal of existing solid wastes, and has poor sanitation.

9 Education

68. Literacy rate of Ramechhap district is 60% and female literacy rate is 40.9% in 2072 BS *(District Profile of* Ramechhap*, 2015).* Similarly, Literacy rate of Dolakha district is 62.78% and female literacy rates are 53.67% in 2072 BS *(District Profile of Dolakha, 2015)*

D. PHYSICAL FACILITIES AND CULTURAL HERITAGE

1 Infrastructure Facilities

a. Water Supply

69. According to Ramechhap District Profile, the drinking water supply used by the people of district covers 71 percent by piped water followed by others (dug well, spring -spouts, streams, and ponds), whereas 73.79 percent people in Dolakha district have access to drinking water supply. Water quality seems to be good without Arsenic. Although, fecal coliform is generally high in these water sources.

b. Market Centers

70. The major market centers in the Dolakha and Ramechhap districts are Charikot and Manthali, respectively, which are also the district headquarters. Both of these market centers are directly connected

with Dhulikhel and Kathmandu cities. Other nearest market centers from the schools are given in following table 10.

c. Communication

71. All the school areas have facility of pre-paid and post-paid mobile cell phones and inland telephone service. Mobile repairing shops are in Manthali, Charikot, Khimti bazaar where Ncell Sim Cards and NTC Recharge Cards can be bought easily. Inland/CDMA telephone service is available at Manthali, Khimti and Charikot and provides facility of local, national and international calls. The school area enjoys facility of postal services and fax.

d. Transportation

72. All the schools are accessible by Kathmandu-Dolalghat-Mude-Dolkha/Charikot-Manthali blacktopped road and rural earthen roads connect these schools with Kathmandu-Charikot-Manthali Road or Manthali-Khurkot-Dhulikhel road. A domestic airport is located in Manthali bazaar.

e. Electricity and Energy

73. Electricity, kerosene, LP Gas and Biogas are the main source of energy. Fuelwood is also used for cooking. The school areas are connected with national grid transmission line.

2 Institutions/Organizations

74. There are various social, financial, governmental and non-governmental organizations in the surrounding area of the schools.

Table 4.9: Social/Physical infrastructure/facilities and market centres in ZoI of the schools

S. N.	School and concerned ward of Rural Municipality/ Municipality	Schools	Health posts	other physical infrastructure and facilities	Market centres (with distance)
1.	Shree Secondary School, Jyamirekhani, Likhu Rural Municipality, Ramechhap	1 secondary and 3 primary school	Healthpost available	accessible with earthen road, electricity available	Khimti Bazar(10km), Dhobi (8km), Manthali (23km)
2.	Tamakoshi Janajagriti Secondary School, Khmti Bazar, Likhu Rural Municipality, Ramechhap	College	Primary Health Centre	connected to blacktopped road by 300m earthen road, electricity available	Khimti Bazar, Manthali, Devitar
3.	Shree Secondary School, Sikral, Gelu, Manthali Municipality, Ramechhap	secondary and primary schools	Healthpost available	accessible with earthed road, electricity available	Khimti, Devitar, Manthali, Sawadanda

S. N.	School and concerned ward of Rural Municipality/ Municipality	Schools	Health posts	other physical infrastructure and facilities	Market centres (with distance)
4.	Aajadi Secondary School, Birauta, Melung Rural Municipality, Dolakha	primary schools	Healthpost available	accessible with earthen road, electricity available	Bhalukhola, Devitar, Melung, Milti Khola
5.	Mahendrodaya Secondary School, Mati, Bhimeshwor Municipality, Dolakha	2 secondary school, one primary and one boarding school	Hospital available	connected to blacktopped road by 2.1km earthen road, electricity available	Charikot, Kirantichhap, Kaminichaur
6.	Kutidanda Secondary School, Makaibari, Bhimeshwor Municipality, Dolakha	primary schools	Hospital available	connected to blacktopped road by 20m earthen road, electricity, internet, electricity available	Charikot

Source: Field Survey, 2017

3 Religious and Cultural Sites

75. All these six schools have Saraswati Temple (Hindu Goddess of Knowledge) in their premises. Bhimeshowar temple (Mahadev) in Bhimeshwor Municipality in Dolakha district is a highly worshipped religious site by Hindus. Other religious sites of local importance in the surrounding areas of the schools are given in Table 4.10.

76. A close relationship exists between culture and religion. The major festivals celebrated by ethnic groups are Buddha Jayanti, Janai Purnima, Tij, Dashain, Tihar, Bala Chaturdasi, Lhoshar and Ramnawami. Most of the ethnic groups celebrate the major festivals such as Dashain and Tihar, although these are Hindu festivals. The major Buddhist celebration is Buddha Jayanti.

Table 4.10: Religious and Cultural sites within ZoI of Schools

SN	School and concerned ward of Rural Municipality/ Municipality	Institutions/ Organizations	Religious/historic archaeological sites/resources	Touristic spots	Development Potentials
1.	Shree Secondary School, Jyamirekhani	one saving and credit cooperative, ward office, mothers group, Janasahayogi Sewa Samiti	Chhitakunda Mahadev Mandir (very famous), Devi Deurali Mandir, Nageswhori Mandir, Pashupati Mandir	Thamdanda for sightseeing	horticulture development (fruits) and livestock (cow, goat), iron mine, copper mine
2.	Tamakoshi Janajagriti Secondary School, Khimti Bazar	3 saving and credit cooperative, Khimti Hatemalo Samaj, Khimti Srijanshil Samaj	Mahadev Mandir		commercial vegetable farming, goat farming, bee keeping
3.	Shree Secondary School, Sikral, Gelu	ward office, CFUG Office, agriculture cooperative, saving and credit cooperative	Khandadevi Mandir (very famous), Indradevi Mandir, Jalpadevi Mandir, Bhimsensthan, Kalikathan,	Gajapani for sightseeing	tourism and fruit farming

SN	School and concerned ward of Rural Municipality/ Municipality	Institutions/ Organizations	Religious/historic archaeological sites/resources	Touristic spots	Development Potentials
			Pashupati Mandir, Saraswati Mandir, Mahadev Mandir		
4.	Aajadi Secondary School, Birauta, Dolakha	Veterenary service centre, police post, agriculture service centre, Ilaka Forest Office, Range Post	Mahadev Mandir, Saraswati Mandir		commercial vegetable farming and goat farming
5.	Mahendrodaya Secondary School, Mati, Dolakha	ward office, cooperative office, Social Awareness Centre	Devisthan, Pashupati Mandir, Saraswati Mandir, Mahankal MANDIR, Budha Bhimsen mandir	Mahankal Sthan for religious tourism	hydropower project in nearby Charnawati Khola, picnic spost
6.	Kutidanda Secondary School, Makaibari, Bhimeshwor Municipality, Dolakha	ward office, cooperative, NEA Substation, Samaj Sewa Samiti, Charnawati Child Club, Yatri Corner Football Team, Tuberculosis Eradication Office, Red-cross, Scout	Kalinchwok Temple, Dolakha Bhismen, Mahankal Mandir	Hattichhahara (waterfall)	livestock, mineral water, industry, vegetable farming, rainbow trout fish, kiwi fruit

Source: Field Survey, 2017

Note: The listed cultural and religious sites will not be affected by the proposed subprojects.

CHAPTER V: ALTERNATIVE ANALYSIS

77. The various alternatives for project implementation considering the environmental impacts from implementation of the Project are presented in the following sections.

A. DESIGN ALTERNATIVE

78. The proposed project has been formulated for the construction of school buildings and other associated facilities. The present project is designed with due consideration of these aspects, which also considers protection of environment in the design and mitigation measures during implementation.

B. PROJECT LOCATION ALTERNATIVE

79. No significant adverse environmental impacts are found with present location of the schools. The proposed schools selected are to be reconstructed/retrofitted within the existing and properly fenced school premises, causing minimal impact on local environmental settings.

C. TECHNOLOGY, IMPLEMENTATION PROCEDURE AND RAW MATERIAL

80. The work involved is labor intensive and minimum use of mechanical equipment. Most of the construction work will be done by manual labor which will produce minimum environmental impacts. Trained human resources will be used to ensure minimum disturbance to the local environmental setting and prevent health and safety hazards.

81. The working procedures proposed are participatory one and the beneficiaries will be actively participating in all the phases of the project. Except from some mechanical equipment for excavation, most of the raw materials used will be local in nature. Similarly, as far as possible, local people will be employed for the project to trickle down the benefit of subproject implementation in the local economy.

D. NO-PROJECT OPTION

82. The no-project alternative prevents the implementation of the project. If the project is not implemented, school infrastructures including classroom building, toilet and other associated facilities will not be adequate. It limits the chances of improving learning environment to students and hence hinders the educational development of the area.

83. On the other hand, if the project is implemented, the students of the area will benefit from better learning environment. The do-nothing option may avoid some minor environmental impacts, which can be readily mitigated, at the cost of loosing opportunity to establish a better learning facility in the village, which shall support in turn in catering better education to the children of the local people. Production of learned population will later support in overall socio-economic development of the area.

CHAPTER VI: ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

A. METHODOLOGY

84. Issues for consideration by the IEE study were identified through seeking inputs from the relevant stakeholders; conducting desk study; observing and recording environmental settings through site visits; and evaluation of proposed design and construction work.

85. The zone of impacts considered is the area occupied by the proposed school and immediate surroundings of the school building within 100m periphery. ADB's Rapid Environmental Assessment Checklist (REA) was used for environmental screening and categorization of the subprojects as guided by ADB's safeguard policy (SPS 2009).

86. The impacts from implementation and operation of the project will be both beneficial and adverse. From the preliminary design and results of the REA, it is clear that implementation of the school subprojects will not have major adverse impacts due to small and localized nature of work to be completed in a short duration. Measures shall be taken to maximize the beneficial impacts, whereas mitigation measures shall be taken to avoid, minimize or compensate the adverse impacts. The potential impacts and mitigation measures are discussed in the following sections, and a summary is presented in Table 7.1.

B. BENEFICIAL IMPACTS

87. The likely beneficial impacts from the construction and operation of the schools and the proposed measures to maximize them are presented in the following paragraphs:

1 Improved Education Infrastructure and Better Learning Environment

88. **Impact.** The students will have a better school infrastructure with earthquake resilient safe classrooms, and improved basic facilities like water supply, sanitation, laboratories, libraries, and computer learning centers. Percentage of student enrolment may increase due to improvement in the learning environment and availability of better learning facilities. Improved school infrastructures will have beneficial impact upon students, teachers, and school communities. *The magnitude of the impact shall be direct, high, local, long term and* will be *highly significant.*

89. **Benefit Maximization Measure.** The beneficial impact augmentation measures are:

- The Government prepared model school typical designs shall be adopted.
- School building and other facilities shall be safe for children, and shall be disabled friendly.
- Basic services like drinking water supply and sanitation facilities shall be clean and of good standard.
- Toilets shall be separate for boys and girls at comfortable distance.
- Permanent water supply system for drinking and sanitation shall be ensured in each school.
- The open spaces in the schools shall be landscaped with gardens and covered with vegetation to improve green cover and aesthetics of the school premises.
- A system of operation, cleaning and maintenance of the school buildings and facilities shall be developed in agreement with school management committees and the other responsible stakeholders. Separate and sufficient funds shall be allocated to upkeep the school environment.

2 Employment and Income Generation Opportunity

90. **Impact.** The reconstruction/retrofitting of the schools will require a large number of skilled, semi-skilled and unskilled workers. In an average, the construction work of one school will create roughly 6,500 person-days of unskilled and 4,300 person-days skilled employment. A total of 48 skilled and 72 unskilled people will get direct employment in the construction work for at least 90 days. Employment generation for the local people will minimize seasonal migration to other parts of the country or in India. More than NRs. 37.5 million in an average will be injected in the local economy during the reconstruction of a school. The amount of money that is earned in wages will directly enhance the operation of various economic activities in the village. *This impact will be direct, of high significance, regional but short-term in nature.*

91. **Benefit Maximization Measure.** Maximize work opportunity to the local people.

3 Increased Business Opportunities

92. **Impact.** The project requires certain quantities of different type of construction materials such as cement, sand, aggregate, wood, steel reinforcement, electrical fittings, sanitary fittings, enamel paints etc. These materials shall be brought from the local or regional markets. The worker shall also buy their daily consumable goods from the local grocery and may take meal and snacks. Thus, the local businessman and suppliers shall be benefited from implementation of the project. *The magnitude of the impact shall be medium, local, short term and of high significance.*

93. **Benefit Maximization Measure.** The benefit maximization measure shall be (i) Recommend the contractor to employ local people by giving emphasis on women and vulnerable groups; (ii) Ensure equal wages to male and female; (iii) Promote use of local products and facilities, particularly consumables items.

4 Skills Enhancement

94. **Impact:** Employment in the construction work is likely to enhance skills of the workers, and large number of local semi-skilled and unskilled workers will get practical hands-on training. This will enhance their technical skills in various areas of construction industry (mason, electrician, carpenter, welder, plumber etc. which could get them good job in future, easily earning their livelihoods. *This impact is indirect, of high significance, regional and long-term in nature.*

95. **Benefit augmentation measures.** The benefit augmentation measures will be (i) Workers will be encouraged to develop skill while working with international contractors through hands-on-training; (ii) EA may organize certified skill development training for workers, increasing opportunity to get employment in semi or skilled job earning higher wage in future; (iii) Project may prepare manual in Nepali language with illustrative steps on construction procedure and quality control.

5 Appreciation of Land Value

96. The land value may increase significantly after availability of high standard educational center in the district. *The impact is indirect, medium, local and long term in nature*.

97. **Benefit augmentation measures.** Encourage local government in planned development.

C. ADVERSE IMPACTS

1 Physical Environment (Construction Stage)

a. Permanent and Temporary Land Use Changes

98. **Impact.** Land of project site, which is now owned by the schools, will be occupied with construction activities and stockpiling of construction materials. Although, since school was already there, minimal change in the existing pattern of land use is expected. *The magnitude of the impact shall be direct, low, site specific, long term and significance is predicted to be low.*

99. **Mitigation Measure.** Mitigation measures will be (i) Do not dump spoil on surrounding agriculture land or open area; (ii) Landscape the school premises and keep as much open area as possible; (iii) Plant trees around the boundary and other possible areas to increase greenery.

b. Impact on Soil and Conservation of Topsoil

100. **Impact.** Spoil will be generated from demolition of the existing structures and construction materials. Fertile topsoil may become lost if not properly collected, stored and reused. *The impact will be direct, of medium significance, site specific and long-term.*

101. **Mitigation Measure.** (i) The topsoil from the areas of cutting and areas to be permanently covered will be stripped to a specified depth and stored in stockpile storage area located away from water course and drainage areas. The stockpile will be designed such that the slope does not exceed 1:2 (vertical to horizontal), and the height of the pile is to be restricted to 2m. Stockpiles will not be surcharged or otherwise loaded and multiple handling will be kept to a minimum to ensure that no compaction will occur. The stockpiles will be covered with gunny bags or tarpaulin. Such stockpiled topsoil will be returned to cover the disturbed area; (ii) Leakage of fuel, lubricants and chemicals on soil will be avoided by storing them on impervious surface with proper peripheral drainage; (iii) Grit chamber and oil sump will be provided in the chemical storage area to collect and remove waste material and oil before discharging water into natural drainages. The existing retention pond could also be utilized for sediment control; (iv) Spoil generated during construction will be used in reclaiming low lying areas.

c. Impact due to Solid Waste and Stockpiling of Construction Material

102. **Impact.** Spoil generated during earthwork and demolition of school building needs to be managed appropriately. Similarly, solid waste produced by considerable number of construction workers can create sanitary problem in the vicinity of the school building, particularly if they resort to open defecation. *Magnitude, extent and duration of the impacts are rated as direct, medium, site-specific and short-term respectively with medium significance*.

103. **Mitigation Measure.** Following mitigation measures will be adopted (i) Haphazard disposal of construction materials will be strictly prohibited; (ii) Reuse the spoil and other materials. Maintain proper material storage system and ensure to control littering of construction materials outside the designated places; (iii) Stockpiling site of construction materials will be designated at demarcated place such that there will be minimum disturbances for day to day school activities; (iv) Provide solid waste container inside the construction site; (v) Give health, hygiene and sanitation training to workers; (vi) Separate provision for collection and disposal of hazardous waste, if any, as prescribed by government rule and regulations.

d. Drainage and Downstream Impact

104. **Impact.** Proper drainage system from the school premises is important to avoid waterlogging, vector generation, and unhealthy sanitary condition during rainy season. *The magnitude of the impact will be direct, high, site specific, short term and of high significance.*

105. **Mitigation Measure.** (i) Provide adequate drainage system to have minimum interference with natural drainage pattern within and around the school compound area; (ii) Avoid blocking or diverting water away from natural watercourse; (iii) Waste water will not be allowed to discharge in open area; (iv) Drainage shall be discharged safely without causing soil erosion and landslide.

e. Impact on Air Quality

106. **Impact.** The main sources of dust emission during the construction, which is inorganic and non-toxic in nature, are the movement of equipment at site and dust emitted during earth work, the rate of which depends on type of soil and humidity. The dust particles are expected to settle soon and will not be carried over long distance. The dust generation will be further reduced if aggregates are procured from existing crusher industries. *The impact due to dust nuisance is likely to be direct, of low significance, confined to construction area, and short-term during construction.*

107. Exhaust from project vehicles and equipment during construction phase may result in marginal increase in the levels of SO_2, NOx, SPM, CO and unburnt hydrocarbons. It may, therefore, be deduced that construction activities may cause changes in the SPM levels locally. *The impact will, however, be reversible, low significance, local and short term in duration.*

108. **Mitigation Measure.** (i) Good engineering practices will be adopted along with use of good quality fuel and regular maintenance of equipment and vehicles; (ii) Water sprinklers will be used to suppress dust particles in construction area and at dust generating equipment; (iii) Material transportation and dust generating construction activities will be scheduled to avoid impacts to communities living nearby the area; (iv) construction material will be covered during transportation or at storage sites; (vi) Workers will be provided with face mask and goggles to protect them while working in high dust areas.

f. Impact on Noise Levels

109. **Impact.** Heavy construction traffic for loading and unloading, fabrication, drilling and breaking, and handling of equipment and construction materials may generate noise (refer Table 6.1). The areas affected will be those close to the construction site. At the peak of the construction, marginal increase in noise levels at 85-90 dB (A) is expected to occur locally at the construction site. *The impact due to noise nuisance is predicted to be direct, of low significance, confined to construction area, and short-term.*

Table 6.1: Typical Noise Levels of Construction Equipment

Particulars	Noise Levels dB (A)	Particulars	Noise Levels dB (A)
Earth Movers		**Stationary Equipment**	
Front End Loaders	72-84	Pumps	69-71
Backhoes	72-93	Generators	71-82
Tractors	76-96	Compressors	74-86
Trucks	82-94		
Material Handlers		**Stationary Equipment**	
Concrete mixers	75-88	Pumps	69-71
Concrete pumps	81-88	Generators	71-82

110. **Mitigation Measure.** (i) Cushions and good silencers or cover will be provided to suppress noise from equipment and vehicles; (ii) equipment and vehicles will be regularly maintained; (iii) construction equipment will be kept at considerable distance from settlements; (iv) workers will be provided with ear-muffler and earplugs while working in high noise area; (iv) schedule the noise generating work only during day time and duration and frequency of operation of construction equipment will be minimized.

g. Impact on Water Quality

111. **Impact.** The major source of water pollution during construction will be from spillage of chemicals and oil/lubricants, washing of vehicles in water bodies, cement slurry from concrete mixtures, and open defecation by workers. *The impact on water quality is predicted to be direct, of low significance, confined to construction area, and short-term.*

112. **Mitigation Measure.** The proposed mitigation measures are following: (i) Seepage and spilage of chemicals, oil and lubricants will be avoided by storing them on impervious surface with proper drainage; (ii) Water conserving technologies will be used during construction; (iii) Washing of vehicles in water bodies will be restricted; (iv) Construction materials shall be stockpiled on impervious surface with drainage and treat before discharging in natural water bodies; (vi) Sanitation facilities (pit toilets, or toilets with soak pits and septic tanks will be provided in labor and construction camps and work area.

h. Handling of Construction Material and Safety of Workers

113. **Impact.** Handling of construction materials, particularly chemicals will always possess risk to the workers handling them. Any leakage or spillage may enter soil and water body, thus contaminating water and damaging productivity of soil. *The impact on water quality is predicted to be direct, of low significance, confined to construction area, and short-term.*

114. **Mitigation Measures.** (i) All workers employed on mixing cement, concrete etc., will be provided with protective footwear and protective goggles. Workers, who are engaged in welding works, would be provided with welder's protective eye-shields; (ii) Workers engaged in stone breaking activities will be provided with protective goggles and clothing and will be seated at sufficiently safe intervals; (iii) The use of any toxic chemical will be strictly in accordance with the manufacturer's instructions; (iv) A register of all toxic chemicals delivered to the site will be kept and maintained up to date by the Contractor. The register will include the trade name, physical properties and characteristics, chemical ingredients, health and safety hazard information, safe handling and storage procedures, and emergency procedures for the product.

i. Pressure on Existing Public Roads

115. **Impact.** Transportation of construction material is expected to add only little increase in traffic in the local roads. *The magnitude of the impact shall be medium, duration shall be direct, short term, the extent shall be local, and the impact will be of low significance.*

116. **Mitigation Measure.** The mitigation measures to be adopted will be (i) Install various appropriate traffic sign boards at public places wherever seems necessary; (ii) Avoid office hour to transport construction materials through heavy trucks/vehicles; (iii) Entry of heavy vehicles shall be restricted as far as possible at least for office/school hours.

j. Closure of Construction Camps

117. **Impact.** The contractor is required to properly remove all temporary structures built for operation of construction and workers camps. While doing so, the land will be brought back to original state. *The impact is predicted to be direct, of low significance, confined to construction area, and long-term.*

118. **Mitigation Measures.** (i) Contractor will prepare site restoration plans for approval by the Engineer. The plan will be implemented by the contractor prior to demobilization; (ii) On completion of the works, all temporary structures will be cleared away, all rubbish burnt, excreta or other disposal pits or trenches filled in and effectively sealed off and the site left clean and tidy, at the contractor's expense, to the entire satisfaction of the Engineer; (iii) Residual topsoil will be distributed on spoil disposal area, barren areas as identified by the Engineer in a layer of thickness of 75mm – 150mm with proper turf and vegetation.

2 Physical Environment (Operation and Maintenance Stage)

a. Impact Due to Generation of Solid Waste

119. **Impact.** Solid wastes could be biodegradable or non-degradable, which will be generated during operation of the schools. The degradable solid waste may spread different types of diseases if allowed to decay at the open for a long time. The collected waste needs to be segregated and reuse or recycle by selling to the local scrappers. Biodegradable waste needs to be collected separately and may be used for composting. Compost fertilizer thus produced can be used for the greenery, plantation within the school premise. The waste which cannot be recycled or reused should be finally disposed at appropriate area and properly covered by soil. *The magnitude of the impact will be direct, medium, local and long term.*

120. **Mitigation Measure.** (i) Waste generated from the school will be segregated and kept in different containers; (ii) Provide separate solid waste containers, for organic, inorganic reusable/recyclable and hazardous solid wastes.

b. Issue of E-Waste, Heavy Metals, Hazardous Waste Management

121. **Impact.** Operation of school building may produce waste such as broken glass and sharps, rusted machine parts and tools, old or broken furniture, used computers etc. which needs to be managed by the school. Haphazard disposal of these wastes could lead to injury and aesthetically unpleasing environment. *Magnitude, extent and duration of the impact are rated as medium, local and long-term respectively.*

122. **Mitigation Measure.** (i) Properly store and manage grease, paints and other construction materials; (ii) Install separate container for hazardous waste inside the school compound; (ii) Convert it to non-hazardous waste after treatment and then only send it to the disposal site designated by local authority; (iii) Give health, sanitation & hygiene training to students and workers; (iv) Promotion of recycling and reusing of recyclable and reusable material.

c. Drainage Management and Impact on Water Quality

123. **Impact.** Lack of proper drainage of storm water and sewerage may cause ponding of water resulting in muddy area and proliferation of vector disease in the area. Similarly, sewage generated from the school toilets should be managed through construction of septic tanks and soak pits. *The impact will be moderate, local in extent and long term in duration.*

124. **Mitigation Measure.** (i) The rainwater could be managed for recharging groundwater; (ii) Excess water will be drained out through the drainage system; (iii) Keep school premises clean and periodically spray insecticide for controlling vector disease.

d. Impact on Air Quality and Noise Level due to Vehicular Movement

125. **Impact.** The movement of vehicles and human activities around the subproject sites may create noise and dust although to a limited extent. Noise might be generated during school operation and gathering of students. *The magnitude, extent and duration of the impact are rated as low, local and long-term, respectively. The impact is expected to be of low significance.*

126. **Mitigation Measure.** (i) Use silencers to minimize sound of vehicles/machineries; (ii) Pre-informing the neighbors in case of event producing disturbing sound; (iii) Cover all the open space with vegetation; (iv) Do not allow vehicles (older than 20 years) to operate; (v) Restrict use of horn near school area.

e. Water Demand/Supply

127. **Impact.** The subproject shall ensure adequate quantity of water for drinking and sanitary purposes. Water demand will be high especially in construction as well as operation period. *The magnitude of the impact is predicted as indirect, local and long-term, and will be highly significant.*

128. **Mitigation Measure.** Project shall fulfill the water demand with provision of (i) sump well & pump if water has to be lifted from low lying rivers and springs; (ii) Water storage tank; (iii) Supply of water from other available sources; (iv) Practice rain water harvesting.

f. Disaster Management (Fire, Earthquake)

129. **Impact.** Disasters, both natural and man-made, such as fire, earthquake, landslide could risk the life of people mainly student, teachers and others in the schools in the absence of proper emergency rescue mechanism. *The magnitude, extent and duration of the impacts are rated as low, site-specific and long-term respectively. The impact is found to be of high significance.*

130. **Mitigation Measures.** (i) Design shall include factor for ensuring seismic resistant school building following the National Building Code (NBC); (ii) Ensure provision of emergency exist; (iii) Install fire alarm system and firefighting system; (iv) Adopt necessary measures on fire safety; (v) Train student leaders and volunteers on tackling safety measures during emergency; (vi) conduct regular safety drills in the school; (vii) Paste posters and telephone numbers of staff to be contacted during emergency; (viii) keep first aid box ready in the school. Also, efforts shall be placed to address disaster risks through (i) creation of disaster management committee in each school. The committee will be composed of teachers, students, and other school staff with designated disaster management coordinator; (ii) schools, through the disaster management committee to draft site-specific manual and a "teacher's handbook" for disaster risk reduction, in consultation with teachers, students, parents, school staff, and local authorities; (iii) conduct orientation on disaster preparedness guidance, ideally every start of school year; (iv) schools to provide or require the students to prepare disaster preparedness/survival kits (including flyers/brochure) at the start of the school year.

g. Solar Power

131. **Impact.** The project will receive a technical support to install solar photovoltaic cells and energy efficient lights in the school buildings. The solar system will improve environment through use of energy efficient measure and use of renewable energy. However, few issues like disposing of old batteries, disposing of CFL bulbs (if led bulbs are not used), and O&M of solar system have to be managed for minimizing adverse impact. *Magnitude of the impact due to use of solar energy shall be moderate, the extent shall be site specific and the duration shall be long term. The impact is of low significance from adverse environmental impact perspective.*

132. **Mitigation Measure.** (i) Employees/students/teachers will be encouraged to use water and electricity in an efficient way; (ii) use led bulbs instead of CFL; (iii) Establish a mechanism for disposal of old batteries and acidic water.

3 Biological Environment (Construction and Operation Stage)

a. Loss of Vegetation and Impact on Wildlife

133. **Impact.** The sub-project area does not have significant patch of forest and wildlife. The sub-project area is characterized by sub-tropical type of vegetation, and the proposed expansion will result in cutting of few trees. Some protected animals like *Panthera Pardus (leopard), Macaca Assamensis (langur), Martes flavigula (yellow throated Martin), and Gangetica Canis aureus* (fox) is reported to be found in nearby forests. *Despite of this, the impact on flora and fauna is predicted to be of low significance.*

134. **Mitigation Measure.** (i) plant trees at the periphery and garden of the school in order to increase green cover in the area; (ii) restrict the workers in killing or harassing of birds and wildlife; (iii) securely fence the school area; and (iv) regularly mow the grass.

4 Socio-economic and Cultural Environment (Construction Stage)

a. Land Acquisition, Compensation and Reinstatement of Community Structures

135. **Impact.** The new reconstruction and retrofitting of schools will be done within the existing school premises. Hence, there will be no need to acquire land and property. However, land is some of the school is also planned to be acquired voluntarily. Similarly, the contractor could dispose spoil and stockpile construction *material* on the agriculture land or in someone's property. *The impact is predicted to be direct, of high significance, local, and long-term.*

136. **Mitigation Measures.** (i) Any land acquired voluntarily shall follow the established practice as guided by resettlement framework; (ii) Contractor shall sign a MOU with landowner for depositing construction *material* or temporary deposition of spoil. The MOU shall be reported to the site engineer and include in monthly report.

b. Occupational Health and Safety

137. **Impact.** Workers from outside the village will be working in the project. They will be directly exposed to the risks of occupational injury or accident, including risks from dust, gaseous emission, noise and vibration. *The* workers will be staying in labour camps that can be prone to unsafe and unhygienic conditions if not maintained properly. *The impact is predicted to be direct, of high significance, local, and short-term.*

138. **Mitigation Measures.** (i) The contractor will arrange proper camping facility with rooms with good ventilation, natural light, fan and mosquito net. Contractor will give priority to employ local workers, particularly poor and vulnerable people, which will reduce the need of establishing labour camp. Clean drinking water supply, toilets and solid waste management system will be availed to the workers in their camps; (ii) contractor will restrict use of firewood for cooking and heating and will supply kerosene or gas in the mess of workers; (iii) contractor will supply food items to the camps giving priority to local products; (iv) all *workers* will be insured; (v) contractor will prepare and implement a safety plan approved by the Engineer; (vi) safety gears will be supplied by the contractor to all workers in sufficient number depending upon the nature of work, and make mandatory to use them; (vii) fire fighting facility and first aid box will be kept in camps and work sites with facility of a health assistant standby at call; (viiii) arrangement will be made by the contractor with local hospital or health post in case of emergency; (ix) Adequate security arrangement with fencing and lighting will be arranged around camp sites and material storage areas to ensure that unauthorized people and animals do not enter in the area and get exposed to the potential hazards of construction activities.

c. Socially Undesirable Activities

139. **Impact.** The workers may use alcohol and other forms of intoxication, gambling, quarrel with locals, disrespect local culture and religion, and may promote socially undesirable activities in and around the project area. *The impact is predicted to be direct, of medium significance, local, and short-term.*

140. **Mitigation Measures.** (i) Restrict movement of workers out of camp after certain hours in the night; (ii) restrict use of alcohol and gambling in the camp; (iii) supply water supply, daily consumable items, communication facility in the camp so as not to create additional pressure on the local services; (iv) orient workers to *show* respect to local tradition and culture; (v) prepare a code of conduct for all project staff, orient them and monitor that these are effectively followed by all; (vi) assign a public relation officer by the

project to keep close and regular consultation and coordination with local communities; (vii) regular follow up and monitoring on workers behaviour and take appropriate measure on defaulters.

d. Properties of Archaeological Importance

141. **Impact.** The schools may fall within world heritage sites, although within their own premises. There could be possibility of unearthing some structures while excavating foundation of structures, and damage them knowingly or unknowingly. *The impact is predicted to be direct, of high significance, local, and long-term.*

142. **Mitigation Measures.** (i) ADB's chance find procedure shall be applied; (ii) The contractor will take reasonable precaution to prevent his worker or any other staff from removing and damaging any such article or thing and will, *immediately* upon discovery thereof and before removal, acquaint the Engineer of such discovery and carry out the Engineer's instructions for dealing with the same, awaiting which the work shall be stopped 100 m all directions from the site of discovery; (iii) The Engineer will seek direction from the Archaeological Department before instructing the contractor to recommence work on the site.

e. Gender and Child Labor

143. **Impact.** Gender discrimination may occur as the contractor may not be sensitive towards gender equity. For sake of low wage, contractors may use women and sometimes child as labour. Construction area may not be gender friendly with required facilities. *The impact is predicted to be direct, of high significance, local, and short-term.*

144. **Mitigation Measures.** The Project will ensure to (i) provide equal wage to male and female for similar nature of work; (ii) restrict use of child below 16 years of age in labor work (as per ILO standard); (iii) provide *female* friendly construction environment with separate toilet for women, and if possible, child care facility for women with young babies, and suitable work categorization for women.

f. Health and Sanitation

145. **Impact.** Construction workers may practice open defecation due to lack or inadequate number of toilets facility. Built up toilets may be drained out to water bodies or even in irrigation canals. This may lead to contamination and cause disease. Proper management will be required for bio-degradable and non bio-degradable *wastes* generated in camps and project sites. Unmanaged waste may induce health hazard by spreading communicable disease as the area is hot and humid. In such environment, bacterial and vector disease could spread beyond control. *The impact is predicted to be direct, of medium significance, local, and long-term.*

146. **Mitigation Measures.** The Project will ensure to (i) Provide sufficient numbers of and separate toilets in camps and work sites for both male and female; (ii) Dispose construction debris at designated spoil disposal site; (iii) Garbage collection system will be initiated by establishing bins at places in the construction area.

g. Infection of STDs and Other Communicable Diseases

147. **Impact.** Workers with increased income may get indulged in prostitution and unsafe sex, which may not be socially acceptable to local people. Such undesirable activities may lead to possibilities of transmission of infectious diseases like STDs and HIV/AIDS. *The impact is predicted to be indirect, of high significance, local, and long-term.*

148. **Mitigation Measures.** (i) restrict alcohol, gambling and socially undesirable activities by workers living in labor camps, and instruct them not to indulge in such activities if they are living outside of labour camp; (ii) arrange awareness program to the workers and local communities on HIV/AIDS and STDs; (iii)

erect posters on safety practices to prevent from STDs; (iv) distribute free condoms to workers as a part of educating them.

5 Socio-economic and Cultural Environment (Operation and Maintenance Stage)

a. Impact on Social Facilities

149. Increased number of students, teachers and visitors in the area requires further strengthening of social security *system* in the project area, since there may be increase in demand of social service and consumable goods. *The magnitude of the impact shall be moderate, the extent shall be local and the duration shall be long term. The impact is moderately significant.*

b. Traffic Congestion and Management

150. Due to the increased inflow of the students and visitors in the school, there might be more pressure on traffic management. During the school operation hours, there will be influx of students and their activities in the school area. By which, there might be congestion within school building, playground and school compound area. It may also create noise pollution negatively affecting peaceful atmosphere in the surrounding area. The magnitude, extent and duration of the impacts are rated as low, local and long term respectively. The impact is of low significance. However, since most of these schools lie in rural areas where the existing traffic is very low, traffic problem may not be significant. *The magnitude, extent and duration of the impacts are rated as low, local and long term respectively. The impact will be of low significance.*

c. Safety of Students

151. The construction activities during the school operation hours may cause accident and injury to the students. Hence, safety risk will be significant. The project shall (i) keep the work area properly barricaded and made inaccessible to children, (ii) safety signages shall be placed at work areas alerting students to maintain safety measures, (iii) students shall be oriented regularly on safety measures to be maintained while work is on-going, (iv) first aid facility shall be kept ready at site in case of accident and injury.

CHAPTER VII: ENVIRONMENTAL MANAGEMENT PLAN

A. OBJECTIVE OF EMP

152. The basic objective of EMP is to:

(i) to ensure that all mitigation measures and monitoring requirements will actually be carried out at different stages of project implementation and operation – pre-construction, construction and operation and maintenance;

(ii) recommend a plan of action and a means of testing the plan to meet existing and projected environmental problems;

(iii) establish the roles and responsibilities of all parties involved in the project's environmental management;

(iv) describe mitigation measures that shall be implemented to avoid or mitigate adverse environmental impacts and maximizing the positive ones;

(v) ensure implementation of recommended actions aimed at environmental management and its enhancement; and

(vi) ensure that the environment and its surrounding areas are protected and developed to meet the needs of the local people, other stakeholders and safeguard the interests of the common people.

153. This EMP will be incorporated into the bidding and contract documents and Bill of Quantities (BOQ), and the contractor will make available a budget for all environmental mitigation measures.

Table 7.1: Environmental Management and Monitoring Plan

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
	Beneficial Impacts								
1.	Improved Infrastructure and Better Learning Environment	D	H	L	LT	DSC/School	site observation/records/ verification of map and drawings	Once prior to implementation of the project	DLPIU
Mitigation/Augmentation Measures • Basically, the Government prepared model school typical designs shall be adhered with. • School building and other facilities shall be safe for children, and shall be disabled friendly. • Basic services like drinking water supply and sanitation facilities shall be clean and of good standard. • Toilets shall be separate for boys and girls at comfortable distance. • Permanent water supply system for drinking and sanitation shall be ensured in each school. • The open spaces in the schools shall be landscaped with gardens and covered with vegetation to improve green cover and aesthetics of the school premises. • A system of operation, cleaning and maintenance of the school buildings and facilities shall be developed in agreement with school management committees and the other responsible stakeholders. Separate and sufficient funds shall be allocated to upkeep the school environment.									
2.	Employment and Income Generation Opportunity	D	H	R	ST	contractor	discussion with local people, records	once a year	DSC
Mitigation/Augmentation Measures • Priority will be given to local peoples									
3.	Increased Business Opportunities	D	M	L	ST	contractor	discussion with local people, records	once a year	DSC
Mitigation/Augmentation Measures • Recommend the contractor to employ local people by giving emphasis on women and vulnerable groups; • Ensure equal wages to male and female; • Promote use of local products and facilities, particularly consumables items.									
4.	Skills Enhancement	IN	H	R	LT	contractor	discussion with workers, records	once a year	DSC
Mitigation/Augmentation Measures • Workers will be encouraged to develop skill while working with international contractors through hands on training; • EA may organize certified skill development training for workers in the project districts, increasing opportunity to get employment in semi or skilled job earning higher wage; • Project may prepare construction manual with illustrative steps of performing the work in Nepali language on various construction disciplines.									
5.	Appreciation of Land Value	IN	M	L	LT	-	records of land registration office, discussion	once a year	local government
	Adverse Impacts								

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
	Physical Environment								
	Construction Stage								
6.	Landslide or gully erosion on slopes that may cause risk to the school infrastructure	D	L	SS	LT	contractor	Visual monitoring	Once prior to and after rainy season	DSC
Mitigation/Augmentation Measures • Follow National Environmental Guideline for School Improvement and Facility Management for site selection, design and monitoring activities. • Avoid or maintain adequate distance from landslide or erosion areas. • Adopt right angle of cut on slopes. • Stabilize slopes by engineering and bio-engineering measures including check-dams. • Measures taken to avoid undercutting of hill toes that may cause slide. • Use check dam and channeling of water to avoid erosion and slide. • Do not exert excess load on slopes by disposing spoil.									
7.	Permanent and temporary land use changes	D	L	SS	LT	contractor/ School	Discussion with people, project and local administration office, land take data	Once prior to implementation of the project	DSC
Mitigation/Augmentation Measures • Do not dump spoil on surrounding agriculture land or open area; • Landscape the school premises and keep as much open area as possible; • Plant trees around the boundary and other possible areas to increase greenery.									
8.	Impact on Soil and Top Soil	D	M	SS	LT	contractor	Observation and inspection	Weekly during construction	DSC
Mitigation/Augmentation Measures • The topsoil from the areas of cutting and areas to be permanently covered will be stripped to a specified depth and stored in stockpile storage area located away from water course and drainage areas. The stockpile will be designed such that the slope does not exceed 1:2 (vertical to horizontal), and the height of the pile is to be restricted to 2m. Stockpiles will not be surcharged or otherwise loaded and multiple handling will be kept to a minimum to ensure that no compaction will occur. The stockpiles will be covered with gunny bags or tarpaulin. Such stockpiled topsoil will be returned to cover the disturbed area; • Leakage of fuel, lubricants and chemicals on soil will be avoided by storing them on impervious surface with proper peripheral drainage; • Grit chamber and oil sump will be provided in the chemical storage area to collect and remove waste material and oil before discharging water into natural drainages. The existing retention pond could also be utilized for sediment control; • Spoil generated during construction will be used in reclaiming low lying areas.									

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
9.	Impact due to solid waste and Stockpiling of construction materials	D	M	SS	ST	contractor	Observation	Weekly during construction	DSC
Mitigation/Augmentation Measures • Haphazard disposal of construction materials will be strictly prohibited; • Reuse the spoil and other materials. Maintain proper material storage system and ensure to control littering of construction materials outside the designated places; • Stockpiling site of construction materials will be designated at demarcated place such that there will be minimum disturbances for day to day school activities; • Provide solid waste container inside the construction site; • Give health & Hygienic training to workers; • Separate provision for collection and disposal of hazardous waste, if any, as prescribed by government rule and regulations.									
10.	Drainage and Downstream Impact	D	H	SS	ST	contractor	Observation and inspection	Weekly during construction	DSC
Mitigation/Augmentation Measures • Provide adequate drainage system to have minimum interference with natural drainage pattern within and around the school compound area; • Avoid blocking or diverting water away from natural watercourse; • Waste water will not be allowed to discharge in open area; • Drainage shall be discharged safely without causing soil erosion and landslide.									
11.	Impact on air quality	D	L	SS	ST	contractor	Observation and inspection	Weekly during construction	DSC
Mitigation/Augmentation Measures • Good engineering practices will be adopted along with use of good quality fuel and regular maintenance of equipment and vehicles; • Water sprinklers will be used to suppress dust particles in construction area and at dust generating equipment; • Material transportation and dust generating construction activities will be scheduled to avoid impacts to communities living nearby the area; • Construction material will be covered during transportation or at storage sites; • Workers will be provided with face mask and goggles to protect them while working in high dust areas.									
12.	Impact on Noise Levels	D	L	SS	ST	contractor	Observation and inspection	Weekly during construction	DSC
Mitigation/Augmentation Measures • Cushions and good silencers or cover will be provided to suppress noise from equipment and vehicles; • Equipment and vehicles will be regularly maintained; • Construction equipment will be kept at considerable distance from settlements; • Workers will be provided with ear-muffler and earplugs while working in high noise area;									

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
• Schedule the noise generating work only during day time and duration and frequency of operation of construction equipment will be minimized.									
13.	Impact on water quality	D	L	SS	ST	contractor	Observation and inspection	Weekly during construction	DSC
Mitigation/Augmentation Measures • Seepage and spillage of chemicals, oil and lubricants will be avoided by storing them on impervious surface with proper drainage; • Water conserving technologies will be used during construction; • Washing of project vehicles in water bodies will be restricted; • Construction materials shall be stockpiled on impervious surface with surrounding drainage away from natural drainage to avoid them reaching in water bodies; • Sanitation facilities (pit toilets, or toilets with soak pits and septic tanks will be provided in labor and construction camps and work area.									
14.	Handling of Construction Material and Safety of Workers	D	L	SS	ST	contractor	Observation and inspection	Weekly during construction	DSC
Mitigation/Augmentation Measures • All workers employed on mixing cement, concrete etc., will be provided with protective footwear and protective goggles. Workers, who are engaged in welding works, would be provided with welder's protective eye-shields; • Workers engaged in stone breaking activities will be provided with protective goggles and clothing and will be seated at sufficiently safe intervals; • The use of any toxic chemical will be strictly in accordance with the manufacturer's instructions; • A register of all toxic chemicals delivered to the site will be kept and maintained up to date by the Contractor. The register will include the trade name, physical properties and characteristics, chemical ingredients, health and safety hazard information, safe handling and storage procedures, and emergency and first aid procedures for the product.								
15.	Closure of construction camp	D	M	SS	LT	contractor	Observation and inspection	after completion of the project	DSC
Mitigation/Augmentation Measures • Contractor will prepare site restoration plans for approval by the Engineer. The plan will be implemented by the contractor prior to demobilization; • On completion of the works, all temporary structures will be cleared away, all rubbish burnt, excreta or other disposal pits or trenches filled in and effectively sealed off and the site left clean and tidy, at the contractor's expense, to the entire satisfaction of the Engineer; • Residual topsoil will be distributed on spoil disposal area, barren areas as identified by the Engineer in a layer of thickness of 75mm – 150mm with proper turf and vegetation.								
16.	Pressure on Existing Public Roads	D	L	L	ST	contractor	Observation and inspection	Weekly during construction	DSC
Mitigation/Augmentation Measures • Install various appropriate traffic sign boards at public places wherever seems necessary; • Avoid office hour to transport construction materials through heavy trucks/vehicles; • Entry of heavy vehicles shall be restricted as far as possible at least for office/school hours.									
Operation Stage									

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
17.	Impact due to generation of solid waste	D	M	L	LT	School	Observation	Quarterly a year	DEO/ local government
Mitigation/Augmentation Measures • Waste generated from the school will be segregated and kept in different containers; • Provide separate solid waste containers, for organic, inorganic reusable/recyclable and hazardous solid wastes.									
18.	Issue of E-Waste, Heavy Metals, Hazardous Waste management	D	M	L	LT	School	Observation, inspection and discussion	Twice a year	DEO/ local government
Mitigation/Augmentation Measures • Properly store and manage grease, paints and other construction materials; • Install separate container for hazardous waste inside the school compound; • Convert it to non-hazardous waste after treatment and then only send it to the disposal site designated by local authority; • Give health, sanitation & hygiene training to students and workers; • Promotion of recycling and reusing of recyclable and reusable material.									
19.	Drainage Management and Impact on Water Quality	D	M	L	LT	School	Observation	Quarterly a year	DEO/ local government
Mitigation/Augmentation Measures • The rainwater could be managed for recharging groundwater; • Excess water will be drained out through the drainage system; • Keep school premises clean and periodically spray insecticide for controlling vector disease.									
20.	Impact on Air Quality and Noise Level due to Vehicular Movement	D	L	L	LT	School	Observation	Quarterly a year	DEO/ local government
Mitigation/Augmentation Measures • Use silencers to minimize sound of vehicles/machineries; • Pre-informing the neighbors in case of event producing disturbing sound; • Cover all the open space with vegetation; • Do not allow vehicles (older than 20 years) to operate; • Restrict use of horn near school area.									
21.	Water Demand/Supply	IN	H	L	LT	School	Observation	Quarterly a year	DEO/ local government
Mitigation/Augmentation Measures Project shall fulfill the water demand with provision of									

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
• Sump well & pump if water has to be lifted from low lying rivers and springs; • Water storage tank; • Supply of water from other available sources; • Practice rain water harvesting.									
22.	Disaster Management (Fire, Earthquake)	D	L	SS	LT	DSC/School	Observation	Prior to implementation and once a year	DEO/ local government
Mitigation/Augmentation Measures • Design shall include factor for ensuring seismic resistant school building following the National Building Code (NBC); • Ensure provision of emergency exist; • Install fire alarm system, fire fighting system and adopt other necessary measures on fire safety; • Train student leaders and volunteers on tackling safety measures during emergency; • Conduct regular safety drills in the school; • Paste posters and telephone numbers of staff to be contacted during emergency; • Keep first aid box ready in the school.									
23.	Solar Power	IN	M	SS	LT	DSC/School	Observation	Prior to implementation and once a year	DEO/ local government
Mitigation/Augmentation Measures • Employees/students/teachers will be encouraged to use water and electricity in an efficient way; • Use led bulbs instead of CFL; • Establish a mechanism for disposal of old batteries and acidic water.									
Biological Environment (Construction and Operation Stage)									
24.	loss of vegetation and impact on wildlife/bird	IN	L	L	ST	contractor/ School	Site observation and sampling	2 times a year	DSC/DFO/ CFUG
Mitigation/Augmentation Measures • Plant trees at the periphery and garden of the school in order to increase green cover in the area; • Restrict the workers in killing or harassing of birds and wildlife; • Securely fence the school area; and • Regularly mow the grass.									
Operation Stage									
25.	Impact on wildlife due to increased human activities	IN	L	L	LT	School	Site observation	2 times a year	School/ DFO/CFUG

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
Mitigation/Augmentation Measures									
• Community and authorities will remain vigilant and alert on illegal felling of timber and killing of wildlife.									
Socio-economic Issues									
Construction Stage									
26.	Land Acquisition, Compensation and Reinstatement of Community Structures	D	H	L	LT	contractor/ school	Observation and inspection	prior to implementation of the project	DSC/DLPIU
Mitigation/Augmentation Measures									
• Any land acquired voluntarily shall follow the established practice as guided by resettlement framework; • Contractor shall sign a MOU with landowner for depositing construction material or temporary deposition of spoil. The MOU shall be reported to the site engineer and include in monthly report.									
27.	Occupational Health and Safety	D	H	L	ST	contractor	Observation and inspection	weekly during construction	DSC
Mitigation/Augmentation Measures									
• The contractor will arrange proper camping facility with rooms with good ventilation, natural light, fan and mosquito net. Contractor will give priority to employ local workers, particularly poor and vulnerable people, which will reduce the need of establishing labour camp. Clean drinking water supply, toilets and solid waste management system will be availed to the workers in their camps; • Contractor will restrict use of firewood for cooking and heating and will supply kerosene or gas in the mess of workers; • Contractor will supply food items to the camps giving priority to local products; • All workers will be insured; • Contractor will prepare and implement a safety plan approved by the Engineer including provision for emergency preparedness and response and fire safety; • Safety gears will be supplied by the contractor to all workers in sufficient number depending upon the nature of work, and make mandatory to use them; • Fire fighting facility and first aid box will be kept in camps and work sites with facility of a health assistant standby at call; • Arrangement will be made by the contractor with local hospital or health post in case of emergency; • Adequate security arrangement with fencing and lighting will be arranged around camp sites and material storage areas to ensure that unauthorized people and animals do not enter in the area and get exposed to the potential hazards of construction activities.								
28.	Socially undesirable activities	D	M	L	ST	contractor	Observation and inspection	weekly during construction	DSC
Mitigation/Augmentation Measures									
• Restrict movement of workers out of camp after certain hours in the night; • Restrict use of alcohol and gambling in the camp; • Supply water supply, daily consumable items, communication facility in the camp so as not to create additional pressure on the local services; • Orient workers to show respect to local tradition and culture;									

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
• Prepare a code of conduct for all project staff, orient them and monitor that these are effectively followed by all; • Assign a public relation officer by the project to keep close and regular consultation and coordination with local communities; • Regular follow up and monitoring on workers behaviour and take appropriate measure on defaulters.									
29.	Properties of Archaeological Importance	D	H	L	LT	contractor	Observation and inspection	weekly during construction	DSC
Mitigation/Augmentation Measures • ADB's chance find procedure shall be applied; • The contractor will take reasonable precaution to prevent his worker or any other staff from removing and damaging any such article or thing and will, immediately upon discovery thereof and before removal, acquaint the Engineer of such discovery and carry out the Engineer's instructions for dealing with the same, awaiting which the work shall be stopped 100 m all directions from the site of discovery; • The Engineer will seek direction from the Archaeological Department before instructing the contractor to recommence work on the site.									
30.	Gender and Child Labour	D	H	L	ST	contractor	Observation and inspection	weekly during construction	DSC
Mitigation/Augmentation Measures • Provide equal wage to male and female for similar nature of work; • Restrict use of child below 16 years of age in labor work (as per ILO standard); • Provide female friendly construction environment with separate toilet for women, and if possible, child care facility for women with young babies, and suitable work categorization for women.									
31.	Health and Sanitation	D	M	L	LT	contractor	Observation and inspection	weekly during construction	DSC
Mitigation/Augmentation Measures • Provide sufficient numbers of and separate toilets in camps and work sites for both male and female; • Dispose construction debris at designated spoil disposal site; • Garbage collection system will be initiated by establishing bins at places in the construction area.									
32.	Infection of STDs and Other Communicable Diseases	IN	H	L	LT	contractor	Observation and inspection	weekly during construction	DSC
Mitigation/Augmentation Measures • Restrict alcohol, gambling and socially undesirable activities by workers living in labor camps, and instruct them not to indulge in such activities if they are living outside of labour camp; • Arrange awareness program to the workers and local communities on HIV/AIDS and STDs; • Erect posters on safety practices to prevent from STDs; • Distribute free condoms to workers as a part of educating them.									

	Environmental Impacts	Impact Evaluation				Responsible for Mitigation	Monitoring Method	Frequency	Responsible for Monitoring
		Nat.	Mag.	Ext.	Dur.				
	Socio-economic and Cultural Environment (Operation and Maintenance Stage)								
33.	Impact on Social Facilities	D	M	L	LT	School	discussion	Quarterly a year	local government
Mitigation/Augmentation Measures • Regularly organize interaction programs between local people and other relevant personnel. • Coordinate with local social service providers and concerned government institutions to meet up the local demand of physical as well as social infrastructures.									
34.	Traffic Congestion and Management	D	L	L	LT	School	discussion	Quarterly a year	Traffic Police
Mitigation/Augmentation Measures • Work in co-ordination with the traffic police in planning and management of the traffic									
35.	Congestion and Overcrowding	D	L	L	LT	School	discussion	Quarterly a year	Traffic Police
Mitigation/Augmentation Measures • Manage the incoming and outgoing of vehicle according to the traffic rules									

* Legend *Value* in parenthesis is level of significance:

Nature- *IN= Indirect; D= Direct;* ***Magnitude-*** *L= Low; M= Medium ; H= High ;* ***Extent-*** *SS= Site Specific ; L= Local ; R= Regional ; N= National ; CB=Cross-boundary*
Duration- *ST= Short Term; MT= Medium Term; LT= Long term*

B. ENVIRONMENTAL MONITORING

154. The IEE presents the mitigation measures; parameters to be monitored (including location, monitoring method and frequency) and the responsible person/institution for implementing the mitigation measures and the institution supervising and monitoring. The program will evaluate: (i) the extent and severity of the adverse environmental impacts as compared to what was predicted, (ii) how effective the mitigating measures were and compliance with the regulations and the (iii) overall effectiveness of the EMP.

155. The EA (NRA) is overall accountable for ensuring environmental protection and safeguards compliance in the project activities, whereas CLPIU and DLPIU is responsible to implement EMP. The DLPIU under guidance of CLPIU will conduct baseline monitoring, compliance monitoring and impact monitoring as guided by the GON provisions and safeguard policy requirements of ADB. Any updates on the IEE will be subject to ADB's review and disclosure. No works will be conducted until ADB has cleared the (updated/revised) IEE.

1 Baseline Monitoring

156. A baseline monitoring will be conducted on basic environmental parameters in the area surrounding the proposed project before construction begins. The baseline monitoring will include but not limited to (i) changes in land use pattern; (ii) changes in vegetation pattern; (iii) increased infrastructure and other services; (iv) demographic and cultural status of the area; (v) air, water, and noise quality.

2 Compliance Monitoring

157. A periodic sampling method or continuous recording of specific environmental quality indicators or pollution level will be monitored to ensure if (i) mitigation requirements and specifications are included in the design; (ii) adequate budget for implementation of prescribed mitigation measures and monitoring is included in project cost; (iii) mitigation and monitoring requirements in tender document and contract agreement are incorporated; (iv) contractor complies with the mitigation measures during construction work.

3 Impact Monitoring

158. The impact monitoring detects the changes in environmental parameters and estimates inherent variation within the environment, establishes long-term trends in the natural system, and derives conclusions by making comparison against a standard or target. Impact monitoring will thus include monitoring of (i) construction related safety measures; (ii) loss of vegetation and compensatory plantation; (iii) likely impacts of the project on environmental and socio-economic resources.

4 Environmental Monitoring Plan

159. The proponent (the IA) is committed to adhere with the environmental monitoring parameters in term of location, schedule and responsibilities as listed in following Table 7.2.

Table 7.2: Monitoring parameters, location, schedules and responsibilities

Subject	Parameters	Location	Schedule	Responsibility
Pre-Construction Phase				
Physical Environment				
Air quality	Particulate matter by /visual observation	School surrounding	Once during design	Design consultant for the project
Water quality	drinking water quality standard parameters for water taps	drinking water source of the school	Once during design	Design consultant for the project

Subject	Parameters	Location	Schedule	Responsibility
Noise and vibration	observation	School area	Once during design	Design consultant for the project
Land use	Land use pattern, soil/slope stability	School area	Once during design	Design consultant for the project
Biological Environment				
Vegetation	Types of vegetation	School and surrounding area	Once during design	Design consultant for the project
wildlife and avi-fauna	types of wildlife and avi-fauna	School and surrounding area	Once during design	Design consultant for the project
Chemical Environment				
Vehicular emission	Emission level, leakage status	School area	Once during design	Design consultant for the project
Socio-economic and Cultural Environment				
Demographic characteristics	Population and household including caste, ethnicity and gender	School related wards	Once during design	Design consultant for the project
Religion, culture, and festivals	Rituals, religion	School related wards	Once during design	Design consultant for the project
Cultural and religious monuments	Temples, historical sites	School area	Once during design	Design consultant for the project
Employment	No of local people involved in different occupation	School surrounding settlements	Once during design	
Inflation / Market Price	Value of land commodities, social services	School surrounding settlement and markets	Once during design	Design consultant for the project
Construction Phase				
Physical Environment				
Air quality	Particulate matter by visual observation	School Area	Quarterly	Supervision consultant for the project
Water quality	drinking water quality standard parameters	drinking water source of the school	Quarterly	Supervision consultant for the project
Noise and vibration	Intensity measurement	School area	Quarterly	Supervision consultant for the project
Land use	Area converted to built-up area	School area	Quarterly	Supervision consultant for the project
Waste disposal	Biodegradable / non-biodegradable waste	School area	Quarterly	Supervision consultant for the project
Biological Environment				
Vegetation	Types of vegetation	School and surrounding area	Yearly	Supervision consultant for the project
wildlife and avi-fauna	types of wildlife and avi-fauna	School and surrounding area	Yearly	Supervision consultant for the project
Chemical Environment				
Vehicular emission and other possible leakage of chemicals due the vehicular movement	Chemical and toxic material emission/leakage status	School and surrounding area	Quarterly	Supervision consultant for the project
Socio-economic and Cultural				
Population influx	Migrant number	In and around School area	Quarterly	Project /rural municipality/municipality
Gender	Male/female population in construction works, salary scale, child labour	School construction record	Quarterly	Supervision consultant for the project supported by contractor

Subject	Parameters	Location	Schedule	Responsibility
Cultural and religious monuments	Temples, historical sites	School area	Quarterly	Supervision consultant, rural municipality/municipality
Inflation	land value, commodities, social services	School surrounding settlements	Quarterly	Project / rural municipality/municipality
Employment	Number of people employed	School area	Quarterly	Supervision consultant for the project supported by contractor
Solid waste	Waste management	School area	Quarterly	Supervision consultant for the project
Operation Phase				
Physical Environment				
Air quality	Particulate matter by visual observation	School area	Once in a year	School
Water quality	drinking water quality standard parameters	drinking water source of the school	Once in a year	School
Noise and vibration	Intensity measurement	School area	Once in a year	School
Land use	Land sue pattern	School area	Once in a year	School
Waste disposal	Biodegradable/non-biodegradable waste	School area	Once in a year	School
Biological Environment				
wildlife and avi-fauna	types of wildlife and avi-fauna	School and surrounding area	Once in a year	School
Chemical Environment				
Vehicular emission and other possible leakage	leakage status, emission level	School area	Once in a year	School
Socio-economic and Cultural Environment				
enrolment of students	students number	School	Once in a year	Rural Municipality/Municipality
Gender	Gender friendly school	School	Once in a year	DEO
Cultural and religious monuments	Number of temples, historical sites	School area	Once in a Year	Rural Municipality/Municipality
Inflation / Market Value	Increase or decrease in land value, commodities, social services	school surrounding settlements	Once in a year	Rural Municipality/Municipality
Employment	Number of staff/teachers employed in school	School	Once in a year	DEO/ Rural Municipality/Municipality
Waste management	Proper disposal of solid waste	School area	Once in a year	DEO/ Rural Municipality/Municipality

C. IMPLEMENTATION ARRANGEMENT

1 Executing Agency and CLPIU

160. The National Reconstruction Authority (NRA) is the Executing Agency (EA), who will implement the project work through Central Level-Project Implementation Unit (CLPIU). Safeguard Unit of NRA will coordinate and keep oversight of overall safeguards performance of the project. CLPIU will establish a Safeguard Desk (SD) and appoint a safeguard focal point to lead the desk. All environment and social safeguard staff in the project shall be the member of the Desk. The SD will have sufficient office space, furniture and secretarial resources, a vehicle and support staff. The SD at DLPIU shall will keep close coordination with and report to the SD at CLPIU. CLPIU with support from DLPIU will undertake screening and classification of subprojects for submission to the NRA Safeguards Unit and ADB. CLPIU with assistance from DLPIU will prepare safeguards documents (IEE or DDR) for approved subprojects. Safeguards documents will be reviewed and approved by the CLPIU and ADB. CLPIU will be tasked

with the overall monitoring of project progress, supervise and ensure quality of implementation, assure environmental and social safeguards compliance, collect information and finalize consolidated reports for submission to ADB. CLPIU will support DLPIU to obtain all clearances and fulfil government requirements.

161. One Environment Specialist under DSC (ES) will support CLPIU and DLPIUs with all environment related matters in an intermittent basis with 12 months input for the first year and 4 months each subsequent year. The specialist shall cover environmental safeguard issues including mainstreaming of environmental safeguards in all stages of project activity and facilitate in capacity building of central and local level stakeholders, and periodic monitoring of safeguards compliance. The specialist shall provide 30% of inputs to support CLPIU and 70% of inputs to support DLPIUs. DSC will appoint one safeguard monitor (SM) in each 12 DLPIUs, who shall work and directly report to the ES with a copy to DLPIU. Each contractor shall assign a safeguards and safety staff, who shall work in coordination with the safeguard monitor. The school management committee (SMC) shall be closely involved in all safeguard activities in order to become aware on safeguarding environment during school operation.

162. Key tasks and responsibilities of the CLPIU relating to environmental safeguard are as follows:

(i) ensure that environmental screening of each school subproject is conducted by using the rapid environmental assessment (REA) checklist;
(ii) confirm environment category and assure DLPIUs prepare environmental assessment document in prescribed format (mostly expected to be due diligence report);
(iii) update EMP during implementation of the project, as required;
(iv) confirm whether EMP requirements are included in bidding documents and civil works contract;
(v) establish a system to monitor environmental safeguards of the project, including monitoring the indicators set out in the monitoring plan of the EMP;
(vi) prepare standard environmental monitoring checklist;
(vii) organize training on safeguards for the staff of CLPIU and DLPIU, safeguard monitors at DLPIU, and staff of contractors on EMP implementation, environmental monitoring mechanism; and taking immediate corrective actions to remedy adverse impacts or ineffective mitigation measure;
(viii) provide oversight on environmental management aspects of subprojects and ensure EMPs are implemented by DLPIUs and contractors;
(ix) facilitate and confirm overall compliance with the government rules and regulations regarding environmental clearances;
(x) supervise and provide guidance to the DLPIUs to properly carry out the environmental monitoring and assessments following the provisions of EARF;
(xi) review, monitor, and evaluate the effectiveness with which the EMPs are implemented, and recommend necessary corrective actions to be taken as necessary;
(xii) consolidate monthly environmental monitoring reports from DLPIUs and submit semi-annual monitoring reports to ADB;
(xiii) ensure timely disclosure of final IEEs/EMPs in locations and form accessible to the public; and
(xiv) address any grievances brought about through the grievance redress mechanism in a timely manner.

2 District Level Project Implementation Unit (DLPIU)

163. The design and implementation of each school subproject in each district will be overseen by the district level office of CLPIU, named as district level project implementation unit (DLPIU). Each DLPIU shall appoint a safeguard focal point, who will be supported by safeguard monitors of DSC. Each DLPIU shall establish a Safeguard Desk with focal point as chair. All staff and consultant related with environment and social safeguards shall be the member of the Desk. The Desk shall routinely meet to discuss safeguards compliance performance of project, agree on corrective actions, share them and agree with the technical team to implement them, and ensure they are complied. All the decisions of the Desk shall be recorded as meeting minutes. The DLPIUs will be responsible for the following:

(i) conduct environmental screening by using REA checklist, categorize environment category and conduct environmental assessment (most of them expected to be category C requiring due diligence report) for each school subproject by following the provisions of the EARF;
(ii) conduct environmental compliance audit of existing facilities as per Item F, Appendix 6 of ADB SPS, 2009;
(iii) include IEEs/EMPs in bidding documents and civil works contracts;
(iv) comply with all government rules and regulations and ADB's safeguards policy;
(v) oversee implementation of EMPs, including environmental monitoring by contractors by using the standard environmental monitoring checklist;
(vi) take necessary corrective actions when necessary and follow-up to ensure they are implemented;
(vii) submit monthly environmental monitoring reports to CLPIU;
(viii) organize routine public consultation and awareness programs;
(ix) address any grievances through the Grievance Redress Mechanism in a timely manner.

3 Environment Specialist of the Design and Supervision Consultant (DSC)

164. DSC will work closely with and support CLPIU and DLPIUs in project design, supervision of work implementation including monitoring and reporting during the construction phase. The DSC will have one environment specialist to assist CLPIU and DLPIUs in implementing, monitoring and reporting environments safeguards compliance by contributing about 30% inputs supporting CLPIU and 70% of inputs supporting DLPIUs. The specialist shall provide 12 person-months input in the first year and 4 person-months annual inputs in the subsequent project period. The DSC will also mobilize one safeguard monitor (support staff) in each DLPIU. The responsibility of the environmental specialist will be specifically to support CLPIU and DLPIUs in implementation of EARF and compliance with EMP, and conduct all the environmental safeguards related tasks as described above. Generally, the environment specialist shall support in implementing the following, in addition to others, by also mobilizing safeguard monitors at the DLPIUs:

(i) organize orientation on environmental safeguards mechanism to the staff of CLPIU and DLPIU, safeguard monitors at DLPIU, and staff of contractors. The orientation shall cover environmental categorization, EMP preparation and implementation, environmental monitoring with standard checklist; corrective actions, and reporting;
(ii) assist safeguard focal points to establish a Safeguard Desk at CLPIU and DLPIU;
(iii) support the safeguard desk of CLPIU and DLPIU in conducting meetings with agenda, recording agreed actions, share them with technical team with an understanding to implement them, and follow-up to ensure compliance;
(iv) support DLPIUs on environmental screening of each school subproject by using the rapid environmental assessment (REA) checklist;
(v) confirm environment category and prepare environmental assessment document in prescribed format (mostly expected to be due diligence report);
(vi) support DLPIUs to included EMP requirements in bidding documents and civil works contract;
(vii) establish environmental safeguards mechanism in the project to monitor environmental safeguards of the subproject project works as guided by EMP;
(viii) prepare standard environmental monitoring checklist;
(ix) ensure EMPs are implemented by contractors by routinely monitoring EMP compliance through the safeguard monitors;
(x) ensure overall compliance with the government rules and regulations regarding environmental clearances;
(xi) review, monitor, and evaluate the effectiveness with which the EMPs are implemented, and recommend necessary corrective actions to be taken as necessary;
(xii) consolidate monthly environmental monitoring reports received from DLPIUs and submit semi-annual monitoring report to CLPIU and ADB;
(xiii) organize routine public consultation and awareness programs;

(xiv) address any grievances through the Grievance Redress Mechanism in a timely manner;
(xv) ensure timely disclosure of final IEEs/DDRs/EMPs/reports.

4 Safeguard Monitors at DLPIUs

165. The DSC shall mobilize one safeguard monitor in each DLPIU to support them in the environmental safeguards compliance assurance monitoring and reporting. They shall be graduate in environment related science with at least 2 year experience and responsible for undertaking the following activities under the supervision and guidance of the environment specialist::

(i) conduct environmental screening of subproject by using REA checklist;
(ii) suggest environment category and prepare environmental assessment document with environment management plan (EMP) and seek comments from environment specialist;
(iii) participate in the safeguards orientation program organized by CLPIU;
(iv) support DLPIU Safeguard Desk as suggested by the safeguard focal point of CLPIU;
(v) support safeguard focal point of DLPIU to keep close communication with safeguard desk of CLPIU;
(vi) use standard environmental monitoring checklist and liaise with safeguard officer of contractor to ensure works are in full compliance with the EMP requirements;
(vii) support environment specialist in compliance monitoring when the specialist intermittently joins DLPIU;
(viii) document the compliance performance and suggest corrective measures where necessary;
(ix) support DLPIU in organizing stakeholder consultation program;
(x) support DLPIU in recording grievances in the register, and follow-up for their timely resolution;
(xi) routinely update DLPIU chief and environment specialist on subproject safeguards performance;
(xii) submit monthly environmental compliance monitoring checklist with a brief report to the environment specialist and copy all communications to DLPIU;
(xiii) comply the guidance given by CLPIU and CLPIU through the DSC environment specialist.

5 Civil Works Contracts and Contractors

166. The contractor shall designate a fulltime environment & safety officer with graduation in environment related science and minimum 2 years of experience. The officer shall be responsible to (i) update EMP based on detailed design and site-specific situation, if required, and (ii) ensure all EMP and safety requirements are implemented during the work. Contractors shall carry out all environmental mitigation and monitoring measures outlined in their contract. Copy of EMP shall be included in the bidding and contract documents. The curriculum vitae of the proposed environmental & safety officer shall be submitted to DLPIU for approval before appointing the staff.

Figure 7.1: Project Orgnizational Structure

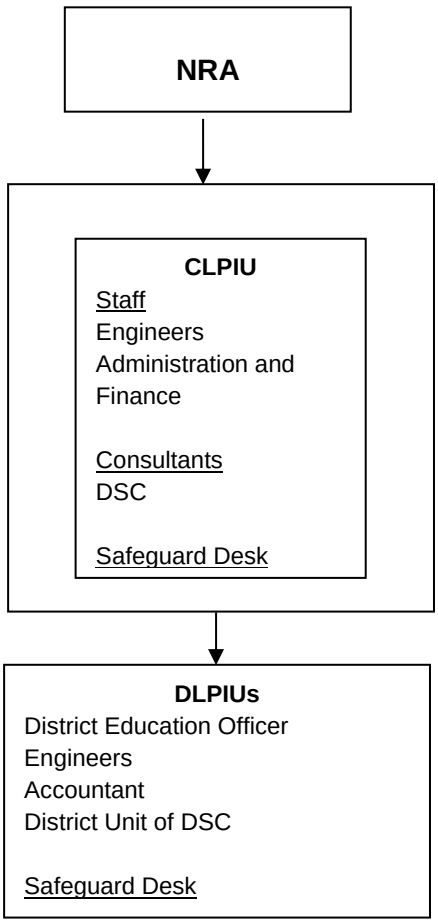
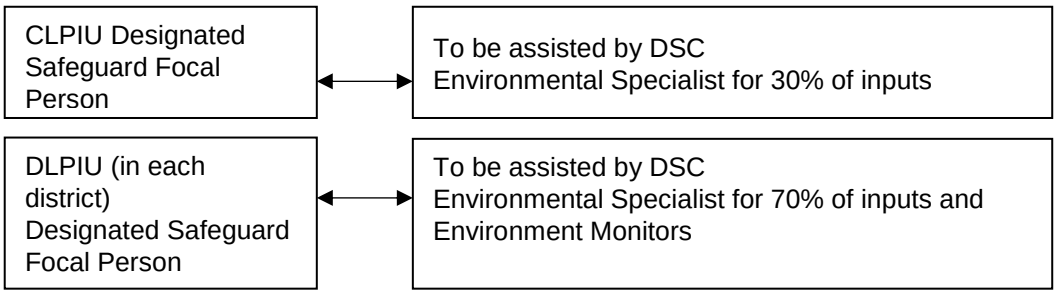


Figure 7.2: Safeguards Implementation Arrangement



D. REPORTING

167. The project shall establish a management information system (MIS) with environmental safeguards monitoring window. The reporting system should be based on site supervision to see whether mitigation measures are carried out according to the EMP. The Construction Contractor should develop an Environmental Mitigation Execution Plan (EMEP) based on the EMP before starting construction and get that approved by the Engineer. The contractor should prepare and submit monthly progress reports to CLPIU and DLPIU. DSC is responsible for checking the monthly progress reports submitted by the Contractor and field verify whether or not the contractor has complied with the approved conditions as stated in the EMEP. The contractor's monthly progress report should contain information on the works carried out and the results of all monitoring and investigation works performed during that particular month. The report should also include cases of compliance and non-compliance and the corresponding further mitigation measures to be adopted to correct the non-compliances. The report shall also include

the outcome of the monitoring, important issues identified and the measures to be undertaken to ameliorate them. The reports will suggest corrective actions where necessary.

168. The DLPIU with help from the DSC environmental specialist should then prepare a quarterly environmental monitoring report based on the monthly report submitted by the Contractor and submit to the CLPIU for review. The report will be developed based on field inspection, investigation, consultation and information given in the monitoring report. The CLPIU will submit semi-annual Environmental Monitoring Reports on every 15 July and 15 January covering safeguards performance in the preceding 6 months period. Reporting requirement is summarized and shown in table 7.2 below.

Table 7.2: Reporting Requirement

S.N.	Line Agencies	Time period	requirements
1.	Contractors	one month	• inclusion of environmental section in monthly progress report
2.	DLPIU/DSC	one month	• compilation of monitoring report from monthly progress of the contractors • submission of monthly environmental monitoring report to CLPIU
3.	CLPIU	quarter/semi-annual /annual	• inclusion of chapter on environmental safeguards compliance in quarterly/trimester and annual report • preparation of semi-annual environmental compliance monitoring report • inclusion of environmental section in project completion report

E. COST ESTIMATE

169. Costs of all mitigation measures during the construction phase will be included in the bidding document, bill of quantities, and the contract agreement, and will be borne by the contractor. The contractor and engineers shall be made aware of the importance of meeting environmental safeguard standards in the contract, and the importance of preparing and submitting the Environmental Mitigation Execution Plan (EMEP) (to be prepared for each subproject, according to the EMP). The EMEP shall be approved by the Engineer (DSC) before construction starts.

1. Mitigation Cost

170. Mitigation cost does not include cost required for engineering construction works, which will be included in civil works BOQ. Other costs for implementing EMP measures are presented in following table 7.4.

Table 7.4: Estimated Cost for Environment Protection Measures (for each school)

S. N.	Particulars	Unit Cost (NRs.)	Total Cost (NRs)
1	Tree plantation and improvement in greenery of surrounding environment	Lump sum	100,000.00
2	Land and property acquisition	Rate agreed by compensation determination committee (CDC)	As per resettlement plan
3	Sign board on safety awareness	Lump sum	20,000.00
4	Bioengineering for slope protection		Contractor's BOQ
4	Insurance of workers		Contractor's BOQ
5	Occupational Health and Safety measures		Contractor's BOQ
6	Emergency safety measures	Lump sum	100,000.00
7	Relocation of religious/physical/community structure		Project cost as per design
8	Skill development training		100,000.00
9	Orientation for awareness raising training to teachers, students, SMC and local stakeholders on environmental safeguards and disaster management		100,000.00
10	Miscellaneous environment protection measure (sanitation and cleanliness, ensure drinking water quality standard in school water taps, dust bin, waste disposal pit etc.)		200,000.00
	Sub Total		**620,000.00**
	Contingencies (10% of subtotal)		**62,000.00**
	Total		**682,000.00**
	Mitigation cost for 165 schools @NRs682,000		**112,530,000.00**

2. Environmental Monitoring Cost

171. Environmental monitoring activities will be conducted by DLPIU with support of DSC (Table 7.4). The cost of monitoring by the project is estimated as presented in following table 7.5.

Table 7.5: Cost for Environmental Monitoring of the Project

SN	Description	Unit	Quantity	Rate(NRs)	Total Amount
1.	Personnel				
	Environmental Specialist (Focal Person of SD, intermittent involvement for project period)	M/M	48		included in DSC cost
	Env. Specialist supporting CLPIU (30% input) and DLPIU (70% input)	M/M	1*48		included in DSC cost
	Env. Monitor 1 for each DLPIUs	M/M	12*48		included in DSC cost
	Sub Total (A)				included in DSC cost
2	Office establishment	month	48	_	CLPIU and DLPIU will provide office space
3	Furniture			_	CLPIU and DLPIU will share the facilities
4	Desktop Computer (8), one laptop and printer (1)	Number		LS	
5	Office supplies/ consumables	Month	13*48	10,000.00	
	Sub Total (B)				6,240,000.00
				Sub Total (A+B)	6,240,000.00
				Contingencies (10% of subtotal)	624,000.00
				Total	6,864,000.00

3. Capacity Building Support Cost

172. DRSP will support for the capacity building National Reconstruction Authority (NRA) to strengthen environmental monitoring system of the institution. Training need assessment of all concerned agencies will be carried out. The cost of capacity building support by the project is estimated as presented in following table 7.6.

Table: 7.6: Cost for the Capacity Building Support

S.N.	Activities	Estimated Cost (NRs)
1.	Support to for the preparation of operational book, Terms of Reference, annual programmes for the implementation of safeguards and vehicle/logistic support	10,000,000.00
2.	Support to NRA for environmental monitoring NRs25,000 for each of 165 school	4,125,000.00
	Total	14,125,000.00

4. Summary of EMP, Environmental Monitoring and Capacity Building Support Cost

173. Table 7.7 presents the summary cost for EMP implementation.

Table 7.7: Summary Cost for EMP Implementation

S.N.	Activities	Estimated Cost (NRs)
1.	Environmental Protection Measures	112,530,000.00
2.	Environmental Monitoring	6,864,000.00
3.	Capacity Building Support Cost	14,125,000.00
	Total	133,519,000.00

CHAPTER VIII: CONSULTATION AND INFORMATION DISCLOSURE

174. ADB's SPS (2009) requires projects to carry out meaningful public consultation on an on-going basis. This is community-initiated and community-based, and as such consultation is built into and central to the school design process from initiation onwards. Public consultation will: (i) begin early and carry on throughout the project cycle; (ii) provide timely disclosure of relevant information, understandable and accessible to people; (iii) ensure a free and un-intimidated atmosphere without coercion; (iv) ensure gender inclusiveness tailored to the needs of disadvantaged and vulnerable groups; and (v) enable the incorporation of all relevant views of affected people, and stakeholders into project decision making, mitigation measures, the sharing of development benefits and opportunities and implementation issues.

175. The local stakeholders including SDC members, teachers, students and local parents were consulted while preparing this IEE. Their suggestions and comments were incorporated in the IEE. The list of person consulted in presented in the appendix. All relevant views raised during consultation will be reflected in the school design and in the environmental management plan as appropriate. Attendance sheets and notes of consultations are also included in the environmental assessment report as proof of consultation.

176. Information disclosure will follow the procedure for ADB policy. The IEE will be made available/accessible to the general public. The IEE and EMP will also be posted on the ADB website. Hard copies of the IEE will be made available for perusal at the ADB Office in Nepal, CLPIU office, at DLPIU offices, schools and at other locations accessible to stakeholders (to be determined by the CLPIU). In compliance with ADB's SPS requirements, for subprojects identified after Board approval, the following documents should be uploaded: i) final IEE after ADB's review and endorsement by the Borrower; ii) updated IEE and corrective action plans, if any; and iii) semi-annual environmental monitoring reports for category B subprojects.

177. The details of the stakeholders consulted are presented in the following Table 8.1.

Table 8.1: Public Consultation Attendees

Participants of Consultation meetings	Attendees		Comments and Suggestions
	Male	Female	
1. Shree Secondary School, Jyamirekhani, Likhu Rural Municipality-6 Ramechhap Date: November 9, 2017			
SMC Members	2	1	• Reconstruction work should be initiated as soon as possible. • SMC will provide full support to the project • School fencing, improvement of water supply and toilet facilities are also necessary for the project. • There should be quality construction work. • It will be better to provide support to repair and maintenance of existing infrastructure and facilities.
Teachers	9	3	• Proposed infrastructures should be sufficient for the classroom, office, lab and laboratories. • Structures should be safe, seismic resistant and user friendly. • Project should also provide support for school furniture, computer and other related accessories. • There should be provision of Temporary Learning Centres (TLC) during construction period.
Students	5	3	• Better school infrastructures will provide better learning environment to students.

Participants of Consultation meetings	Attendees		Comments and Suggestions
	Male	Female	
			• During design and construction of Infrastructures, issues related to children, female and differently able students should be addressed. • There should be least disturbance to students during construction work.
Local stakeholders	7	4	• Construction of better school infrastructures is a matter of happiness of local community. • Project should coordinate/interact with local community and other concerned stakeholders regularly. • Local community is ready to provide necessary support to the project. • Local resources should be used as much as possible.
2. Shree Tamakoshi Janajagriti Secondary School, Khimti bazaar, Likhu Rural Municipality-6 Ramechhap Date: November 9, 2017			
SMC Members	2	1	• Reconstruction work should be initiated as soon as possible. • SMC will provide full support to the project • There should be quality construction work. • It will be better to provide support to repair and maintenance of existing infrastructure and facilities.
Teachers	15	6	• Proposed infrastructures should be sufficient for the classroom, office, lab and laboratories. • Structures should be safe, seismic resistant and user friendly. • Project should also provide support for school furniture, computer and other related accessories.
Students	6	4	• Better school infrastructures will provide better learning environment to students. • During design and construction of Infrastructures, issues related to children, female and differently able students should be addressed. • There should be least disturbance to students during construction work.
Local stakeholders	5	3	• Construction of better school infrastructures is a matter of happiness of local community. • Project should coordinate/interact with local community and other concerned stakeholders regularly. • Local community is ready to provide necessary support to the project. • Local resources should be used as much as possible.
3. Shree Secondary School, Sikral, Gelu, Manthali Municipality-12, Ramechhap Date: November 10, 2017			
SMC Members	5	2	• Reconstruction work should be initiated as soon as possible. • SMC will provide full support to the project • There should be quality construction work. • It will be better to provide support to repair and maintenance of existing infrastructure and facilities.
Teachers	8	2	• Proposed infrastructures should be sufficient for the classroom, office, lab and laboratories. • Structures should be safe, seismic resistant and user friendly. • Project should also provide support for school furniture, computer and other related accessories. • There should be provision of Temporary Learning Centres (TLC) during construction period.
Students	6	3	• Better school infrastructures will provide better learning environment to students. • During design and construction of Infrastructures, issues related to children, female and differently able students should be addressed.

Participants of Consultation meetings	Attendees		Comments and Suggestions
	Male	Female	
			• There should be least disturbance to students during construction work.
Local stakeholders	11	5	• Construction of better school infrastructures is a matter of happiness to local community. • Project should coordinate/interact with local community and other concerned stakeholders regularly. • Local community is ready to provide necessary support to the project. • Local resources should be used as much as possible.
4. Aajadi Secondary School, Melung, Melung Rural Municipality-7, Dolakha **Date: November 10, 2017**			
SMC Members	5	1	• Reconstruction work should be initiated as soon as possible. • SMC will provide full support to the project • There should be quality construction work. • It will be better to provide support to repair/improvement of other existing structures/facilities
Teachers	11	3	• Proposed infrastructures should be sufficient for the classroom, office, lab and laboratories. • Structures should be safe, seismic resistant and user friendly. • Project should also provide support for school furniture, computer and other related accessories. • There should be provision of Temporary Learning Centres (TLC) during construction period.
Students	7	3	• Better school infrastructures will provide better learning environment to students. • During design and construction of Infrastructures, issues related to children, female and differently able students should be addressed. • There should be least disturbance to students during construction work.
Local stakeholders	12	5	• Construction of better school infrastructures is a matter of happiness to local community. • Project should coordinate/interact with local community and other concerned stakeholders regularly. • Local community is ready to provide necessary support to the project. • Local resources should be used as much as possible.
5. Shree Mahendrodaya Secondary School, Bhimeshwor Municipality, Mati, Bhimeshwor Municipality-5, Dolakha **Date: November 11, 2017**			
SMC Members	5	1	• Reconstruction work should be initiated as soon as possible. • SMC will provide full support to the project • School fencing, improvement of water supply and toilet facilities are also necessary for the project. • There should be quality construction work.
Teachers	11	2	• Proposed infrastructures should be sufficient for the classroom, office, lab and laboratories. • Structures should be safe, seismic resistant and user friendly. • Project should also provide support for school furniture, computer and other related accessories. • There should be provision of Temporary Learning Centres (TLC) during construction period.
Students	3	1	• Better school infrastructures will provide better learning environment to students.

Participants of Consultation meetings	Attendees		Comments and Suggestions
	Male	Female	
			• During design and construction of Infrastructures, issues related to children, female and differently able students should be addressed. • There should be least disturbance to students during construction work.
Local stakeholders	5	2	• Construction of better school infrastructures is a matter of happiness to local community. • Project should coordinate/interact with local community and other concerned stakeholders regularly. • Local community is ready to provide necessary support to the project. • Local resources should be used as much as possible.
6. Shree Kutidanda Secondary School, Bhimeshwor Municipality, Makaibari, Bhimeshwor Municipality-7, Dolakha Date: November 13, 2017			
SMC Members	5	2	• Reconstruction work should be initiated as soon as possible. • SMC will provide full support to the project • There should be quality construction work. • It will be better to provide support to repair and maintenance of existing infrastructure and facilities.
Teachers	8	2	• Proposed infrastructures should be sufficient for the classroom, office, lab and laboratories. • Structures should be safe, seismic resistant and user friendly. • Project should also provide support for school furniture, computer and other related accessories.
Students	3	2	• Better school infrastructures will provide better learning environment to students. • During design and construction of Infrastructures, issues related to children, female and differently able students should be addressed. • There should be least disturbance to students during construction work.
Local Stakeholder	3	1	• Construction of better school infrastructures is a matter of happiness to local community. • Project should coordinate/interact with local community and other concerned stakeholders regularly. • Local community is ready to provide necessary support to the project. • Local resources should be used as much as possible.

CHAPTER IX: GRIEVANCE REDRESS MECHANISM

178. During the course of the Project, people may have concerns with the project's environmental performance. Issues may occur during construction and again during operation, which will be addressed by the project by establishing a grievance redress mechanism. The project will establish three tiers of grievance redress committees (GRC):

179. First level of GRC: A GRC will be formed at school level comprising 5 members. The GRC will be chaired by SMC chair, and DLPIU safeguard focal point, DSC safeguard monitor, representative of parent's teachers committee and one representative from community will be members of the committee. The DSC safeguard monitor will work as member secretary of the committee. The member secretary of the committee will maintain grievance registry and document records of grievances and resolution status. The DSC safeguards monitor will document the following information: (i) name of the person; (ii) date complaint was received; (iii) nature of complaint; (iv) location, (v) means of communication, (vi) status of the complaint (in process, resolved, forwarded to next level). Any person with a grievance related to the project works, safeguards and other issues can register their grievance to this GRC through any means of communication. The committee will meet the second day of grievance registration and send acknowledgement to the complainant regarding registration of the complaint and next action to be taken within 3 working days of registration. The CLPIU and DLPIU phone number and GRC nodal officer's contact address will be posted in public areas within the sub-project areas and construction sites. The committee shall complete its process by 7 days of receipt of the complain to resolve the grievance. Forward the complain to the second level GRC within 10 working days of receipt of complain if the grievance is not resolved in level 1.

180. Second level of GRC: The second-level GRC will be formed at DLPIU comprising 3 members to hear the unresolved grievances forwarded by the school level GRC. The GRC will be chaired by DLPIU project manager, and DLPIU safeguard focal point, DSC safeguard expert. The DSC safeguard expert will work as member secretary of the committee. The member secretary of the committee will maintain grievance registry and document records of grievances and resolution status. The committee will meet the third day of grievance registration and take decision within 7 working days of registration of complain in level 2. If the committee resolved the grievance, it shall inform the complainant in written about the decision with a copy to school level GRC to close the case. If the grievance is not resolved in this committee or not in their jurisdiction, the complain should be forwarded to third level GRC within 10 working days of receipt of complain and notify the complainant accordingly.

181. Each GRC will maintain a grievance registry containing following information: (i) name of the person; (ii) date complaint was received; (iii) nature of complaint; (iv) location, (v) means of communication, (vi) status of the complaint (in process, resolved, forwarded to next level).

182. Third level of GRC: The third-level GRC will be formed at CLPIU comprising 3 members to hear the unresolved grievances forwarded by the DLPIU level GRC. The GRC will be chaired by CLPIU project director, and CLPIU safeguard focal point, DSC safeguard expert. The DSC safeguard expert will work as member secretary of the committee. The member secretary of the committee will maintain grievance registry and document records of grievances and resolution status. The committee will meet the third day of grievance registration and take decision within 7 working days of registration of complain in level 3. After resolution of grievances the committee

will notify the DLPIU with a copy to school level GRC to implement the decisions and actions agreed. The school level GRC will be responsible to implement actions and close the case once all actions are completed.

183. The CLPIU's project director will activate the third level of the GRM by referring the issue (with written documentation) forwarded by lower level GRCs, which will, based on review of the grievances, address them in consultation with CLPIU, DLPIU, and complainant. The member secretary of the GRC will be responsible for processing and placing all papers before the GRC, recording decisions, issuing minutes of the meetings and taking follow up action to see that formal orders are issued and the decisions carried out. Decision has to be made within 15 days of receipt of complaint at this level. Complaints can be registered at GRC of CLPIU. However, CLPIU level GRC shall refers the complaints registered at the CLPIU to the concerned school level GRM for initial hearing within 7 days of registration.

184. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage, and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM.

185. If the established GRM is not able to resolve the issue, the affected person also can use the ADB Accountability Mechanism through directly contacting (in writing) the complaint receiving officer (CRO) at ADB headquarters or the ADB Nepal Resident Mission. The complaint can be submitted in any of the official languages of ADB's DMCs.

CHAPTER X: CONCLUSION AND RECOMMENDATION

186. Overall impact of the Project is anticipated to be positive, befitting the community and students with good quality education in a decent learning environment. Some adverse impacts anticipated during implementation will be mostly reversible, of minor significance confined in subproject area for a short duration during construction. It is expected that the adverse environmental impacts can be easily and reasonably mitigated and prevented through mitigation measures and regular monitoring during the design, construction and operation phases of the subprojects.

187. Hence, the IEE for the Project, categorized as B as per ADB's environmental screening, is sufficient and further assessment at EIA level is not required.

Appendix

Appendix I
ADB Safeguards Policy Principles

1. Environmental Safeguards

Objectives: To ensure the environmental soundness and sustainability of projects and to support the integration of environmental considerations into the project decision-making process.

Scope and Triggers: Environmental safeguards are triggered if a project is likely to have potential environmental risks and impacts.

Policy Principles:

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

Appendix II
REA Checklist

Appendix II
Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: Disaster Resilience for Public School and Community Infrastructure Project (DRSP)

Sector Division: Education, NRM

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following areas:			
▪ Underground utilities		✓	
▪ Cultural heritage site		✓	within existing school premises
▪ Protected Area		✓	
▪ Wetland		✓	
▪ Mangrove		✓	Not applicable for Nepal
▪ Estuarine		✓	Not applicable for Nepal
▪ Buffer zone of protected area		✓	within existing school premises
▪ Special area for protecting biodiversity		✓	
▪ Bay		✓	Not applicable for Nepal
B. Potential Environmental Impacts Will the Project cause…			
▪ Encroachment on historical/cultural areas?		✓	
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?		✓	
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?		✓	
▪ Dislocation or involuntary resettlement of people?		✓	
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		✓	

Screening Questions	Yes	No	Remarks
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?		✓	
▪ Increased noise and air pollution resulting from increased traffic volume?		✓	
▪ Occupational and community health and safety risks?		✓	Any impact during construction will be duly mitigated through establishing safety measures.
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		Minor and regular impact associated with simple construction work, which will be duly mitigated through establishing safety measures.
▪ Generation of dust in sensitive areas during construction?		✓	
▪ Requirements for disposal of fill, excavation, and/or spoil materials?	✓		Small in volume which will be managed within the school premises.
▪ Noise and vibration due to blasting and other civil works?		✓	
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?		✓	
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?		✓	
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	
▪ Social conflicts if workers from other regions or countries are hired?		✓	
▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?		✓	
▪ Risks to community health and safety caused by management and disposal of waste?		✓	
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		✓	

Subproject Classification as per ADB SPS 2009: The impacts are not major and impacts are local. No significant irreversible impacts are envisioned on human populations or environmentally sensitive areas including wetlands, forests, grasslands, and other natural habitats. Hence, the Project is classified as Category B requiring IEE.

Date: November 23, 2017

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: Disaster Resilience for Public School and Community Infrastructure Project (DRSP)
Sector : Education
Subsector:
Division/Department:

Screening Questions		Score	Remarks[12]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	1	Flood and landslide are site specific elements, which may occur in some cases, although could be readily mitigated through proper design of the structure.
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	1	Extreme weather condition may occur in mountainous areas due to extreme cold during winter. Some terai areas experience high temperature during summer. Hence, selection of construction materials should be suitable to the given condition.
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	1	
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	

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

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

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

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

Other Comments: Nepal is one of the vulnerable countries for the impacts of climate change. Despite of this, since the outputs of the proposed project is related with construction of school buildings within an existing school premises, the impact of climate change is expected to be of medium scale. The impacts could be in terms of heavy rain, high wind, flood or landslides. All these, and the impacts associated with extreme weather condition during operation of schools shall be integrated in the school building design. The national environmental guidelines for school improvement and facility management, 2004 of the government will ensure site-specific design required for each school. Screening of potential environmental impacts by using ADB's rapid environment assessment checklist and environmental assessment (IEE or due diligence report) with environmental management plan (EMP) will further ensure mitigation measures preparing environmentally sound program with minimized safeguards risks.

Appendix III
List of Person Consulted

S.N.	Name	Office/Address	Affiliation/Position /Profession
1.	Dilip Shekhar Shrestha	CLPIU	Deputy Project Director
2.	Uddhav Nepal		
3.	Buddhi Sagar Thapa	DSC, Central Office	Team Leader
4.	Prakash Pandey	DSC, Central Office	Social Safeguards Specialist
5.	Hemanta Budhathoki	DLPIU, Ramechhap	Chief
6.	Badri Pathak	Regional Education Directorate, Hetauda	Officer
7.	Baburam Dhungana	Department of Education	Deputy Director
8.	Dinanath Gautam	District Education Office, Ramechhap	District Education Officer
9.	Gita Ghimire	District Education Office, Dolakha	District Education Officer
10.	Govinda Raj Sedhain	DLPIU, Dolakha	Chief
11.	Rajendra Shrestha	DLPIU, Dolakha	Engineer, Focal person
12.	Ram Shankar Singh	DSC, Ramechhap	Site Engineer
13.	Chet Raj Siwakoti	DLPIU, Ramechhap	Sub Engineer
14.	Prithvi Thapa	DLPIU, Ramechhap	Sub Engineer, Safeguards Focal Person
15.	Bhakta Dangi	DLPIU, Dolakha	Sub Engineer
16.	Rajesh Sharma	DLPIU, Dolakha	Sub Engineer
17.	Bijaya Ghimire	DLPIU, Dolakha	Sub Engineer
18.	Prateek Karki	DLPIU, Dolakha	Sub Engineer
19.	Krishna Gyawali	DLPIU, Dolakha	Sub Engineer, Safeguards Focal Person
20.	Gopal Siwakoti	Shree Ma.Vi., Jyamirekhani, Likhu	Headmaster
21.	Durga Shrestha	Shree Ma.Vi., Jyamirekhani, Likhu	Chairperson, School Management Committee
22.	Pawan Raj Paudel	Jana Jagriti Ma.Vi, Khimti	Headmaster
23.	Pawanraj Khadka	Shree Ma.Vi. Sikral, Manthali-12, Ramechhap	Headmaster
24.	Khushari Budhathoki	Shree Ma.Vi. Sikral	Chairperson, School Management Committee
25.	Pemba Tamang	Niko Bhume Ma.Vi., Kalinchowk-2, Babare, Dolakha	Headmaster
26.	Lal Kumar Thami	Niko Bhume Ma.Vi., Kalinchowk-2, Babare, Dolakha	Chairperson, School Management Committee
27.	Shiva Prasad Neupane	Likhu Rural Municipality	ward chairperson, Likhu-6, Chairperson,

S.N.	Name	Office/Address	Affiliation/Position /Profession
			Janajagriti Ma.Vi., Khimti Bazar, Likhu-6
28.	Rudra Prasad Adhikari	Shree Ma.Vi., Jyamirekhani, Likhu RM-6	Teacher
29.	Sanjaya Das	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
30.	Mukunda Hari Rijal	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
31.	Sushil Raya	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
32.	Gayatri Prasad Bhattarai	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
33.	Krishna Bahadur Pandey	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
34.	Bishnu Prasad Ghimire	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
35.	Thakur Prasad Neupane	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
36.	Kumari Das	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
37.	Shasikala Shrestha	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
38.	Dinesh Adhikari	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
39.	Krishna Bahadur Shrestha	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
40.	Kalyan Kumar Thapa	Shree Ma.Vi., Jyamirekhani, Likhu RM	Teacher
41.	Niruta Baruwal	Shree Ma.Vi., Jyamirekhani, Likhu RM	Student
42.	Debraj Adhikari	Shree Ma.Vi., Jyamirekhani, Likhu RM	Student
43.	Bam Bahadur Shrestha	Shree Ma.Vi., Jyamirekhani, Likhu RM	Guardian
44.	Kewal Ram Thapa	Shree Ma.Vi., Jyamirekhani, Likhu RM	Guardian
45.	Bijaya Kumar Shrestha	Likhu RM	local representative
46.	Ganga Bahadur Shrestha	Shree Ma.Vi., Jyamirekhani, Likhu RM	member, School Management Committee
47.	Urmila Adhikari	Shree Ma.Vi., Jyamirekhani, Likhu RM	member, School Management Committee
48.	Bhojraj Kadariya	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Tamakoshi Janajagriti Campus chairperson
49.	Khadananda Kadariya	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	member, School Management Committee
50.	Goma Bhujel	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	member, School Management Committee
51.	Laxmi Prasad Kadariya	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
52.	Mahesh Kumar Shrestha	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Accountant
53.	Narmada Bhusal	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
54.	Ganesh Prasad Dahal	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher

S.N.	Name	Office/Address	Affiliation/Position /Profession
55.	Dhal Bahadur Khadka	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
56.	Mira Paudel	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
57.	Nirmala Khadka	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
58.	Bina Majhi	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
59.	Minnu Kadariya	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
60.	Bhagwati Upreti	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
61.	Kewal Kishor Shah	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
62.	Rajaram Mahato	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
63.	Diwakar Khadka	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
64.	Birbal Thapa	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
65.	Bhim Bahadur Tamang	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
66.	Mekh Narayan Shrestha	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
67.	Puspa Dahal	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
68.	Hem Sagar Ghimire	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
69.	Tamu Narayan Shrestha	Tamakoshi Janajagriti Ma.Vi., Likhu RM-6, Khimti Bazar	Teacher
70.	Janak Gambhir Singh	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian, Ex-Army
71.	Dhruba Kumar Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Social worker
72.	Lila Bahadur Budhathoki	Manthali-12, Gelu, Sikral	ward member
73.	Chandra Bahadur Budhathoki	Manthali-12, Gelu, Sikral	Local CFUG Chairperson
74.	Sanju Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
75.	Ranadhoj Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Gardian
76.	Khamba Bahadur Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Teacher
77.	Dipak Gambhir SIngh Adhikari		Social Worker

S.N.	Name	Office/Address	Affiliation/Position /Profession
78.	Binda Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
79.	Karna Bahadur Pandey	Manthali-12, Gelu, Sikral	Ex ward chairperson
80.	Shrijana Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
81.	Ratna Maya Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
82.	Pramila Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
83.	Sabitra Pandey	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
84.	Basanta Kumar Budha	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
85.	Ishwar Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
86.	Kedar Bi.Ka.Sharad Kumar Budhathoki	Shree Secondary School, Manthali-12, Gelu, Sikral	Guardian
87.	Mohan Shrestha	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Headmaster
88.	Shankar Bahadur Khadka	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Teacher
89.	Rabin Prasad Bhandari	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Teacher
90.	Padam Prasad Bhandari	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Guardian
91.	Nil Prasad Bhandari	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Guardian
92.	Mohan Bhandari	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Guardian
93.	Tika Prasad Bhandari	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Office Assistant
94.	Basudev Khadka	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Ex-Chairperson, School Management Committee
95.	Krishna Prasad Bhandari	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Member, School Management Committee
96.	Ramchandra Chapagain	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Member, School Management Committee
97.	Baikuntha Prasad Bhandari	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Chairperson, School Management Committee
98.	Sushila Bhandari	Aajadi Ma.Vi., Melung-7, Birauta, Dolakha	Guardian

S.N.	Name	Office/Address	Affiliation/Position /Profession
99.	Janga Bahadur Basnet	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Chairperson, School Management Committee
100.	Bhim Bahadur Rawat	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Advisor, School Management Committee
101.	Kabindra das Shrestha	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Headmaster
102.	Kishor Dahal	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Teacher
103.	Balkrishna Dahal	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Teacher
104.	Ram Prasad Sapkota	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Teacher
105.	Prem Bahadur Khadka	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Teacher
106.	Kamal Shrestha	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Teacher
107.	Kul Prasad Guragain	Mahendrodaya Ma.Vi., Bhimeshwor Municipality-5, Mati, Dolakha	Teacher
108.	Ramchandra Basnet	Bhimeshwor Municipality-5, Mati, Dolakha	ward chairperson
109.	Shankarlal Shrestha	Kutidanda Ma. Vi., Bhimeshwor-12, Makaibari, Dolakha	Headmaster

Appendix IV
Minutes and Attendance of Public Consultation Meeting

नेपाल सरकारद्वारा एशियाली विकास बैंकको सहयोगमा संचालन हुने Disaster Resilience of Public School Infrastructure and Community Project (DR-PSIC) को अन्तर्गत कार्यान्वयन हुने विद्यालय भवनहरुको निर्माण तथा संचालनमा वातावरणीय तथा सामाजिक सुरक्षा (Environmental and Social Safeguards) , लैंगिक तथा सामाजिक समावेशीपना (Gender and Social Inclusion) का पक्षमा अध्ययनका लागि सार्वजनिक परामर्श गर्ने सिलसिलामा सम्बन्धित सवालहरुका बारेमा प्रस्ताव कार्यान्वयनसँग सम्बन्धित सरोकारवाला कार्यालय, व्यक्ति, संस्थाहरुसँग छलफल गर्ने तथा रायसुझावहरु लिने कार्य सम्पन्न भयो ।

स्थान: श्री माध्यमिक विद्यालय, ज्योतिखानी, लिखु गाउँपालिका-६ खिम्ती
मिति: २०७८/०७/२३

क्र सं	नाम, थर	सम्बन्धित कार्यालय, पेशा	ठेगाना	हस्ताक्षर
१	शिव प्रसाद चौपाने	लिखु गाउँपा ६ प्र.अ.	खिम्ती	[signature]
२	रुद्र प्र. अधिकारी	,,	,,	[signature]
३	दुर्गालाल श्रेष्ठ	,,	,,	[signature]
४	गोपाल शिवाकोटी	,, शिक्षक	,,	[signature]
५	सञ्जय [illegible]	,,		[signature]
६	मुकुन्द हरि [illegible]	,, ,,	,,	[signature]
७	सुशिल राय	,,	,,	[signature]
८	गायत्री प्र. भट्टराई	,,		
९	कृष्ण ब. पाण्डे	,,	गेलु	[signature]
१०	विष्णु प्र. घिमिरे		खिम्ती	[signature]
११	ठाकुर प्रसाद चौपाने	,,	खिम्ती	[signature]
१२	कुमारी दास	,, ,,	,,	[signature]
१३	शशिकला श्रेष्ठ	,, ,,	,,	[signature]
१४	दिनेश अधिकारी	,, ,,	[illegible]	[signature]

क्र सं	नाम, थर	सम्बन्धित कार्यालय, पेशा	ठेगाना	हस्ताक्षर
१५	कृष्ण ब. श्रेष्ठ	,,	निरकु आ.पा -६	[signature]
१६	निरुता वडवाल	विद्यार्थी	निरकु गा.पा ६	[signature]
१७	विनिता श्रेष्ठ	,,	,, ,, ,,	[signature]
१८	देवराज अधिकारी	,,	,,	[signature]
१९	बम ब० श्रेष्ठ	अभिभावक	,,	[signature]
२०	केवलराम थापा	,,	,,	[signature]
२१	कल्याण कु० थापा	शिक्षक	,,	[signature]
२२	विजय कु. श्रेष्ठ	जनप्रतिनिधी	,,	[signature]
२३	गंगा बहादुर थेज	वि.वि सदस्य		[signature]
२४	उर्मिला अधिकारी	वि.व्य.स सदस्य	,,	उर्मिला

नेपाल सरकारद्वारा एशियाली विकास बैंकको सहयोगमा संचालन हुने Disaster Resilience of Public School Infrastructure and Community Project (DR-PSIC) को अन्तर्गत कार्यान्वयन हुने विद्यालय भवनहरुको निर्माण तथा संचालनमा वातावरणीय तथा सामाजिक सुरक्षा (Environmental and Social Safeguards) , लैंगिक तथा सामाजिक समावेशीपना (Gender and Social Inclusion) का पक्षमा अध्ययनका लागि सार्वजनिक परामर्श गर्ने सिलसिलामा सम्बन्धित सवालहरुका बारेमा प्रस्ताव कार्यान्वयनसँग सम्बन्धित सरोकारवाला कार्यालय, व्यक्ति, संस्थाहरुसँग छलफल गर्ने तथा रायसुझावहरु लिने कार्य सम्पन्न भयो ।

स्थान: जनजागृति मा.वि. लिखु गाउँपालिका-६ (रिवाली-४), रिवालीथाना

मिति: २०७४/०७/२२

क्रं सं	नाम, थर	सम्बन्धित कार्यालय, पेशा	ठेगाना	हस्ताक्षर
१	पवनराज पौडेल	प्रधानाध्यापक	लिखु ६ रामेछाप	[signature]
२	भोजराज कडरिया	क्याम्पस प्रमुख	''	[signature]
३	शिव प्र० पौडेल	वि.व्य.स. अध्यक्ष	''	[signature]
४	खडानन्द कडरिया	'' '' सदस्य	''	खडानन्द कडरिया
५	गोमा भुजेल	'' '' ''	''	गोमा
६	भोजराज कडरिया	क्याम्पस अध्यक्ष	[illegible] जनजागृति क्या० लिखु ६	[signature]
७	लक्ष्मी प्र० कडरिया	शिक्षक	''	[signature]
८	महेश कुमार श्रेष्ठ	लेखापाल	लिखु-६, रामेछाप	[signature]
९	जगेश्वर प्रसाद दाहाल	शिक्षक	'' ''	[signature]
१०	नर्मदा भुसाल	''	तुलसीपुर ४ दाङ	[signature]
११	ढोल बहादुर खड्का	''	लिखु-६ रामेछाप	[signature]
१२	मीरा पौडेल	''	''	[signature]
१३	निर्मला खड्का	''	''	[signature]
१४	विना माझी	''	''	[signature]

क्र सं	नाम, थर	सम्बन्धित कार्यालय, पेशा	ठेगाना	हस्ताक्षर
१५	मिनु कठरिया	शिक्षक	लिखु ६ रामेछाप	
१६	भगवती त्रिपाठी	"	"	
१७	केवल किशोर साह	"	सर्वेला-८, धनुषा	
१८	राजाराम महतो	"	कमला-६, धनुषा	Raj
१९	दिवाकर रवड्का	"	लिखु-६, रामेछाप	
२०	वीरबल थापा	"	मेलुङ-६, दोलखा	
२१	भीम बहादुर तामाङ	"	लिखु ६, रामेछाप	
२२	भैरव नारायण श्रेष्ठ	"	लिखु-६, रामेछाप	
२३	पुष्पा दाहाल	"	लिखु ६ रामेछाप	
२४	हेमसागर घिमिरे	"	देउराली-६, इलाम	
२५	राम नारायण श्रेष्ठ	"	मेलुङ-६ दोलखा	
२६	कवि प्र० पाण्डे	डी.शि.नि.ई.टी.	—	
३०	दिनानाथ गौतम	जि.शिक्षा, रामेछाप	—	
३१	डा. बाबुराम ढुंगाना	शिक्षा निर्माण	कुलेश्वर काठ-१३	

नेपाल सरकारद्वारा एशियाली विकास बैंकको सहयोगमा संचालन हुने Disaster Resilience of Public School Infrastructure and Community Project (DR-PSIC) को अन्तर्गत कार्यान्वयन हुने विद्यालय भवनहरुको निर्माण तथा संचालनमा वातावरणीय तथा सामाजिक सुरक्षा (Environmental and Social Safeguards) , लैंगिक तथा सामाजिक समावेशीपना (Gender and Social Inclusion) का पक्षमा अध्ययनका लागि सार्वजनिक परामर्श गर्ने सिलसिलामा सम्बन्धित सवालहरुका बारेमा प्रस्ताव कार्यान्वयनसँग सम्बन्धित सरोकारवाला कार्यालय, व्यक्ति, संस्थाहरुसँग छलफल गर्ने तथा रायसुझावहरु लिने कार्य सम्पन्न भयो ।

स्थान: श्री माध्यमिक विद्यालय, गेलु, सिकाल (मन्थली न.पा. १२)
मिति: २०७४/०७/२४

क्र सं	नाम, थर	सम्बन्धित कार्यालय, पेशा	ठेगाना	हस्ताक्षर
१	पवनराज खड्का	श्री, मा. वि. सिकाल मन्थली - १२, रामेछाप	मन्थली - १२	[illegible]
२	जनक बहादुर श्रेष्ठ	प्र. प्र. सेनानी	मन्थली - १२	[illegible]
३	युवक कु. बुढाथोकी	समाजसेवा	"	[illegible]
४	लिला क. बुढाथोकी	का. प्र.म.	"	[illegible]
५	चन्द्र ब. पाण्डे	सामुदायिक वन अध्यक्ष	"	[illegible]
६	सरिता बुढाथोकी			[illegible]
७	रनबहादुर			[illegible]
८	खम्ब बहादुर बुढाथोकी	शिक्षक		[illegible]
९	दिपक बहादुर सिंह आधिकारी	समाजसेवा	"	[illegible]
१०	बिन्दा बुढाथोकी	वि. व्य. स. सदस्य	"	बिन्दा
११	कर्ण ब. पाण्डे	पूर्व अ.	"	[illegible]
१२	सृजना बुढाथोकी	अभिभावक	"	सृजना
१३	रत्न माया बुढाथोकी	"	"	रत्ना
१४	प्रमिला "	"	"	प्रमिला

क्र सं	नाम, थर	सम्बन्धित कार्यालय, पेशा	ठेगाना	हस्ताक्षर
१५	सावित्रा पाण्डे	अभिभावक	मध्यपुर) १२	सावित्रा
१६	वशान्तकुमार (श्रेष्ठ)	—〃—	—〃—	[illegible]
१७	ईश्वर (पत्थोकी)	—〃—	—〃—	[illegible]
१८	खुसहरि श्रेष्ठ	वि.व्य.स. अध्यक्ष	म.पुर)-१२	[illegible]
१९	केदार वि.क.	शि.अ.सं. सदस्य	〃 —	[illegible]
२०	शरदकुमार (पाण्डे)	अभिभावक	〃 —	[illegible]

नेपाल सरकारद्वारा एशियाली विकास बैंकको सहयोगमा संचालन हुने Disaster Resilience of Public School Infrastructure and Community Project (DR-PSIC) को अन्तर्गत कार्यान्वयन हुने विद्यालय भवनहरुको निर्माण तथा संचालनमा वातावरणीय तथा सामाजिक सुरक्षा (Environmental and Social Safeguards) , लैंगिक तथा सामाजिक समावेशीपना (Gender and Social Inclusion) का पक्षमा अध्ययनका लागि सार्वजनिक परामर्श गर्ने सिलसिलामा सम्बन्धित सवालहरुका बारेमा प्रस्ताव कार्यान्वयनसँग सम्बन्धित सरोकारवाला कार्यालय, व्यक्ति, संस्थाहरुसँग छलफल गर्ने तथा रायसुझावहरु लिने कार्य सम्पन्न भयो ।

स्थान: श्री आजादी मा.वि. मेलुङ -७, विरौटा

मिति: २०७४।०७।२४

क्रं सं	नाम, थर	सम्बन्धित कार्यालय, पेशा	ठेगाना	हस्ताक्षर
१	शंकरबहादुर खड्का	आजादी मा.वि. शिक्षक	मेलुङ ६	[signature]
२	रविन्द्र प्रसाद भण्डारी	आजादी मा.वि. शिक्षक	मेलुङ -६	[signature]
३	राजिव थापागाँई	आजादी मा.वि. शिक्षक	मेलुङ -६	[signature]
४	पदम प्रसाद भण्डारी	अभिभावक	मेलुङ - ६	[signature]
५	नित्य प्रसाद भण्डारी	अभिभावक जग्गादाता	मेलुङ - ६	[signature]
६	मोहन भण्डारी	अभिभावक	मेलुङ - ६	[signature]
७	टिका प्र० भण्डारी	कार्यलय सहयोगी	मेलुङ - ६	[signature]
८	समझु थापागाँई	अभिभावक	" "	[signature]
९	वासुदेव खड्का	पूर्व अध्यक्ष वि.व्य.स.	" "	[signature]
१०	कृष्णप्रसाद भण्डारी	वि.व्य.स सदस्य	" "	[signature]
११	रामचन्द्र थापागाँई	वि.व्य.स. सदस्य	" "	[signature]
१२	बैकुण्ठप्रसाद भण्डारी	वि.व्य.स. अध्यक्ष	" "	[signature]
१३	सुशीला भण्डारी	अं.के. सदस्य	" "	[signature]
१४	मोहन [illegible]	प्र.अ. सदस्य सचिव	" "	[signature]

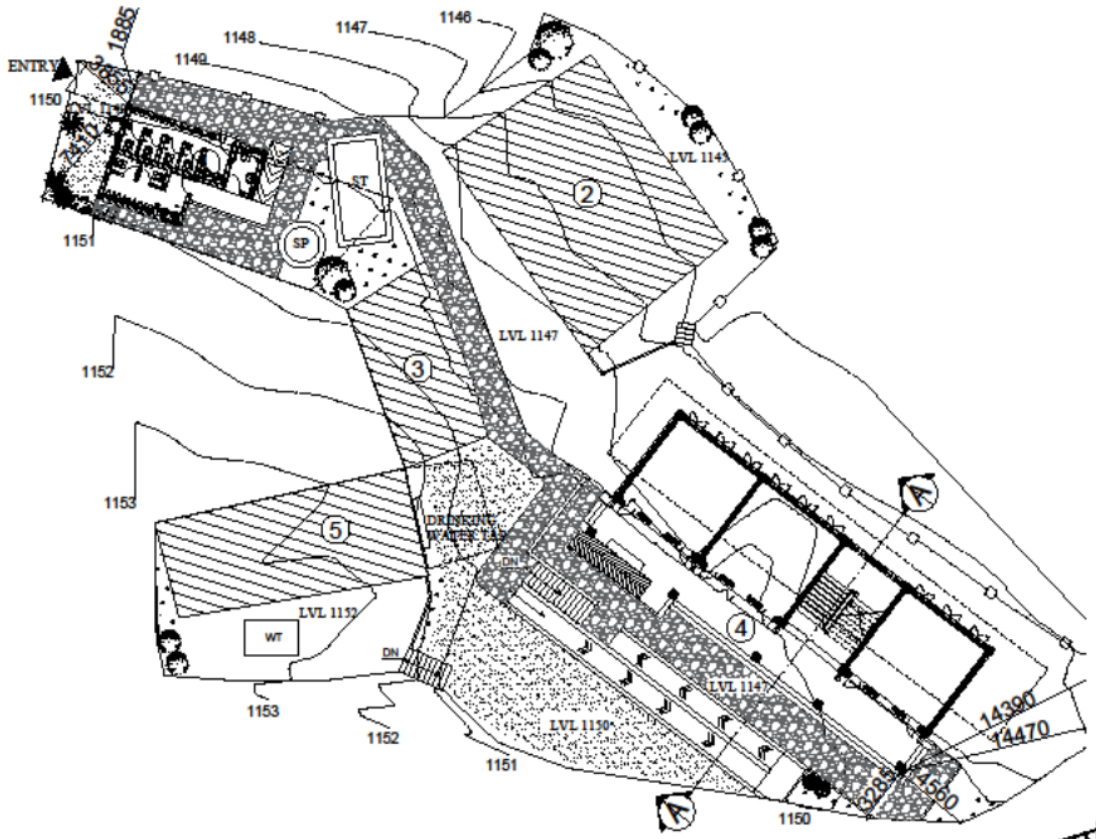
नेपाल सरकारद्वारा एशियाली विकास बैंकको सहयोगमा संचालन हुने Disaster Resilience of Public School Infrastructure and Community Project (DR-PSIC) को अन्तर्गत कार्यान्वयन हुने विद्यालय भवनहरुको निर्माण तथा संचालनमा वातावरणीय तथा सामाजिक सुरक्षा (Environmental and Social Safeguards) , लैंगिक तथा सामाजिक समावेशीपना (Gender and Social Inclusion) का पक्षमा अध्ययनका लागि सार्वजनिक परामर्श गर्ने सिलसिलामा सम्बन्धित सवालहरुका बारेमा प्रस्ताव कार्यान्वयनसँग सम्बन्धित सरोकारवाला कार्यालय, व्यक्ति, संस्थाहरुसँग छलफल गर्ने तथा रायसुझावहरु लिने कार्य सम्पन्न भयो ।

स्थान: महेन्द्रोदय माध्यमिक विद्यालय, भीमेश्वर नगरपालिका-५, माटी खोलत

मिति: २०७४।०७।२६

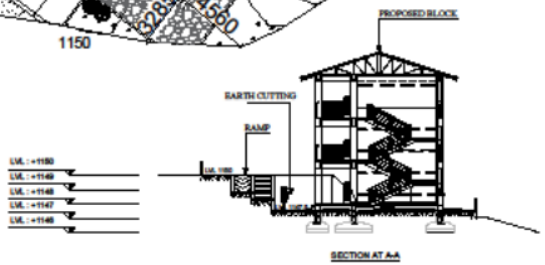
क्रं सं	नाम, थर	सम्बन्धित कार्यालय, पेशा	ठेगाना	हस्ताक्षर
१	जङ्ग बहादुर बस्नेत	वि.व्य.स. अध्यक्ष	भी.न.पा.-५ माटी	[illegible]
२	भिमबहादुर राउत	वि.व्य.स. सल्लाहकार	" "	
३	कविन्द्र दास श्रेष्ठ	विद्यालय प्र.अ.	भी.न.पा.४ जिलु	[illegible]
४	किशोर दाहाल	" शिक्षक	वैतेश्वर - ३ [illegible]	[illegible]
५	बालकृष्ण दाहाल	" शिक्षक	शैलुङ ग्रामपालिका	[illegible]
६	राम प्रसाद खापुङ्ग	" शिक्षक	भी.न.पा.४ जिलु	[illegible]
७	प्रेम बहादुर खड्का	" शिक्षक	शैलुङ ग्राम पालिका	[illegible]
८	कमल श्रेष्ठ	" शिक्षक	भी.न.पा.५ माटी	[illegible]
९	रामचन्द्र बस्नेत	वडाध्यक्ष	भी.न.पा.५ माटी	[illegible]
१०	कुल प्रसाद गुरागाई	विद्यालय शिक्षक	वैतेश्वर-६ नाम्दु	[illegible]
११				
१२				
१३				
१४				

Appendix V
Master Plan for Reconstruction of the Sample Schools



PROPOSED MASTERPLAN
SITE AREA: 1382.87 SQ.M. (2-11-1-3.87)

0 10 20 30



SECTION AT A-A

N

SITE OVERVIEW:

LAND AREA: 1382.87 SQ.M. (2-11-1-3.87)
TOTAL BUILT UP TO BE DEMOLISHED: 287.6 SQ.M.
PROPOSED NEW BUILT UP (TOTAL) : 656.09 SQ.M.

DESCRIPTION

TOTAL NO. OF STUDENTS = 300 — TOTAL NO OF TEACHERS = 18

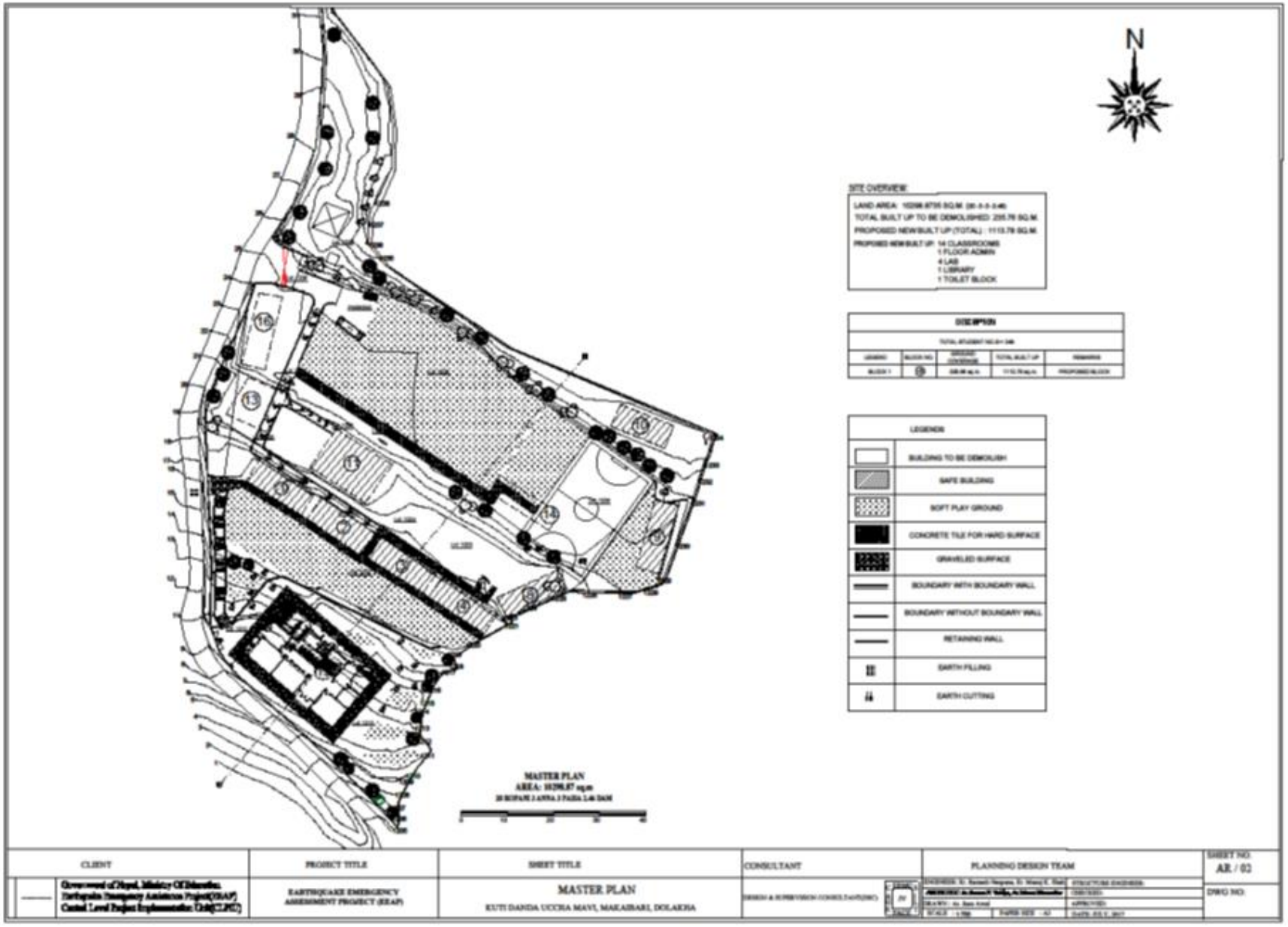
LEGEND	BLOCK NO.	NO. OF STOREY	GROUND COVERAGE	BLOCK CODE	REMARKS
TOILET	①	1	39.89 sq.m.	1-T5	PROPOSED BLOCK
OFFICE	②	-	142.46 sq.m.	-	EXISTING BLOCK
TRUSS	①	-	54.39 sq.m.	-	EXISTING BLOCK
CLASSROOM BLOCK	④	3	205.4 sq.m.	3-CR-9	PROPOSED BLOCK
TLC	③	-	88.33 sq.m.	-	EXISTING BLOCK

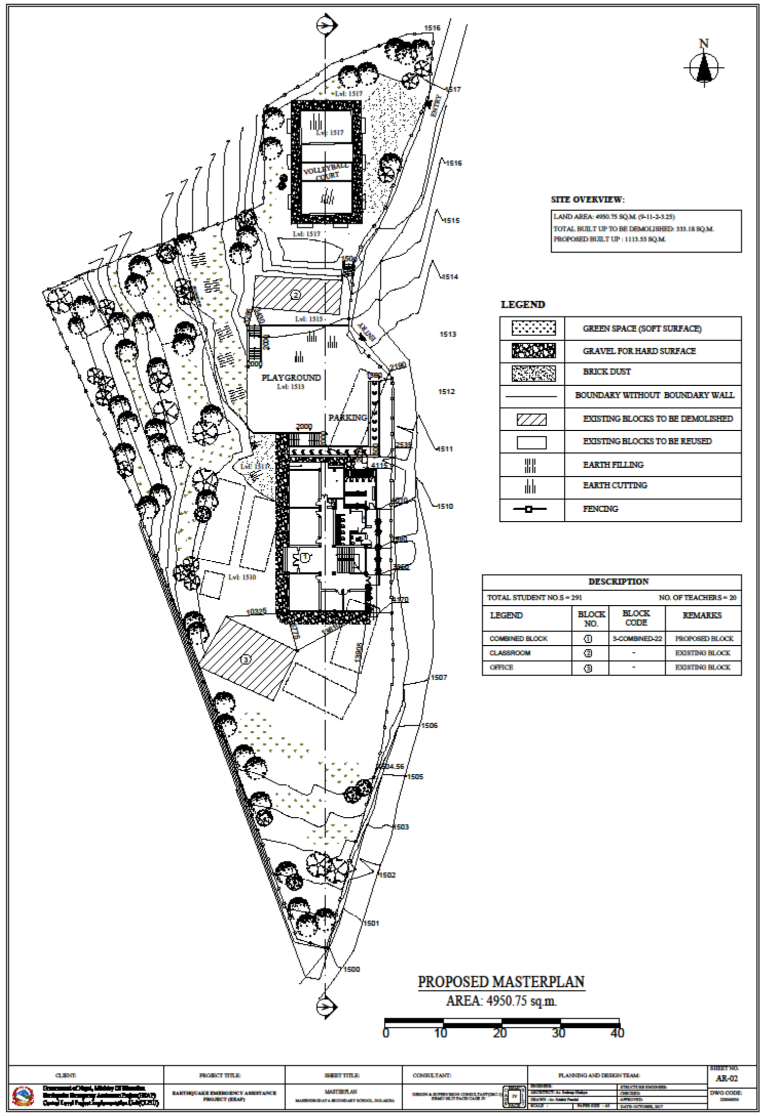
LEGEND

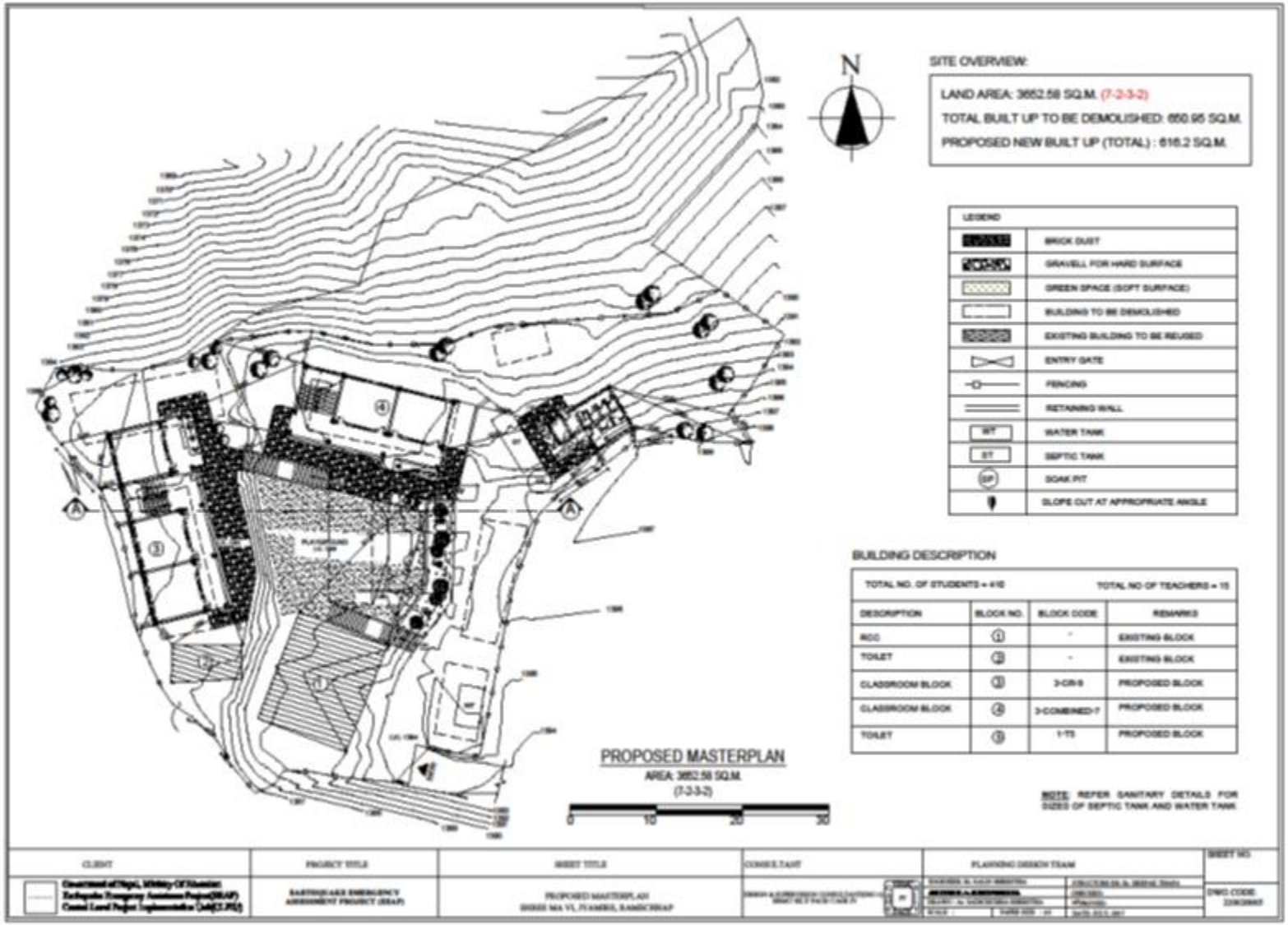
	BRICK DUST
	GRAVELL FOR HARD SURFACE
	GREEN SPACE (SOFT SURFACE)
	BUILDING TO BE DEMOLISHED
	EXISTING BUILDING TO BE REUSED
	ENTRY GATE
	FENCING
	BOUNDARY
WT	WATER TANK
ST	SEPTIC TANK
SP	SOAK PIT

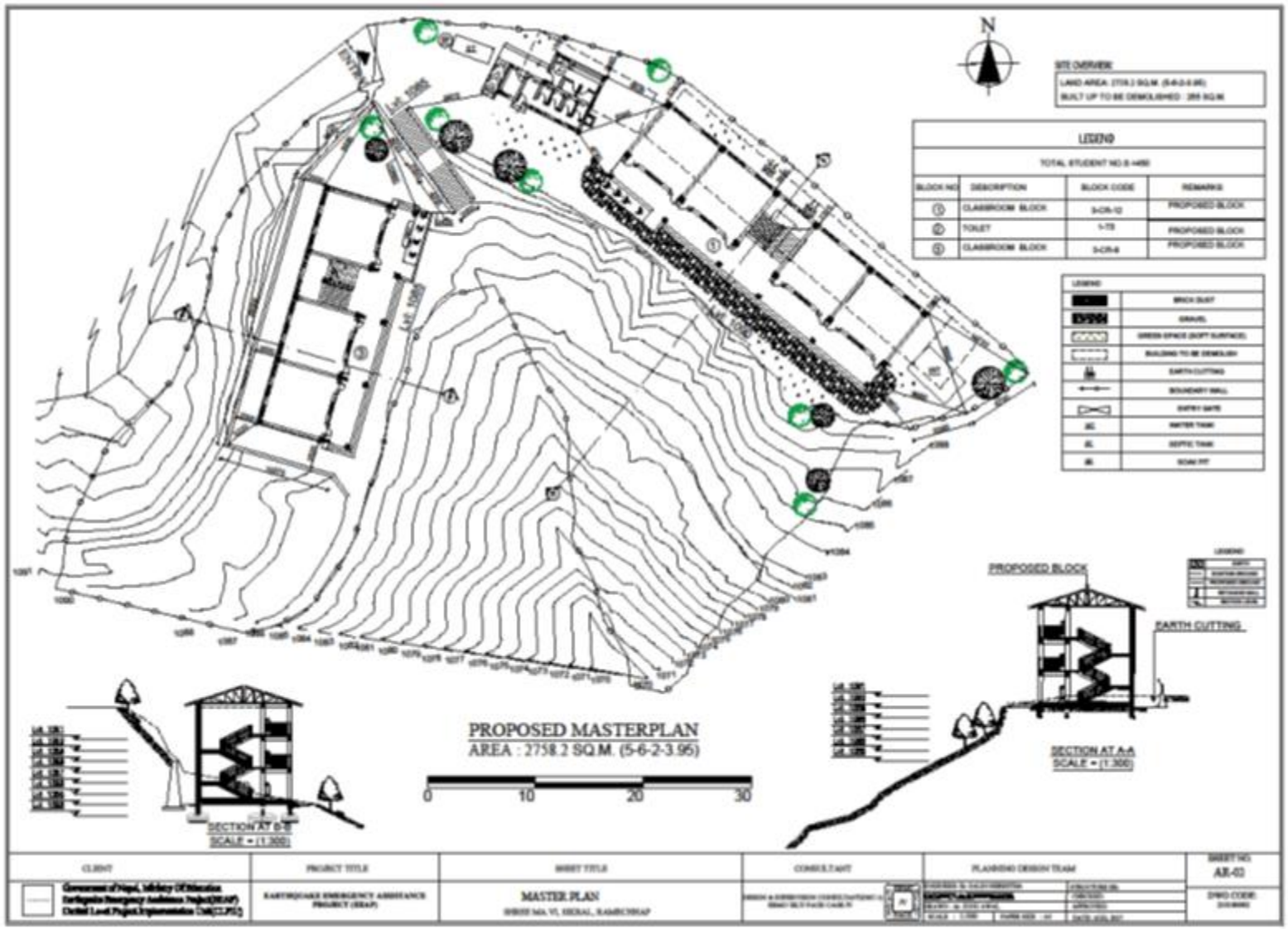
NOTE:
REFER SANITARY DETAILS FOR SIZES OF SEPTIC TANK AND WATER TANK

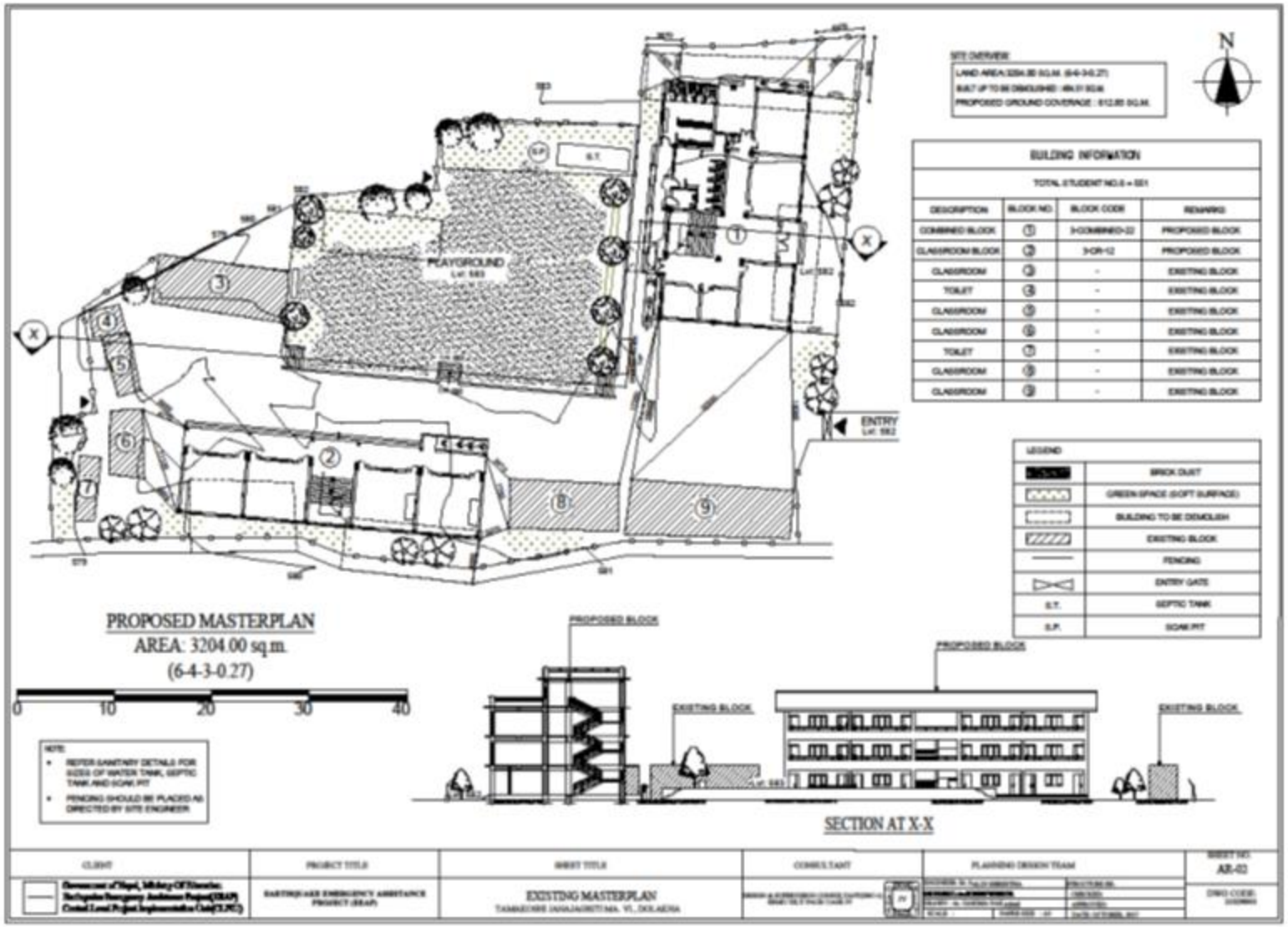
CLIENT	PROJECT TITLE	SHEET TITLE	CONSULTANT	PLANNING DESIGN TEAM	SHEET NO.
Government of Nepal, Ministry Of Education Earthquake Emergency Assistance Project(EEAP) Central Level Project Implementation Unit(CLPIU)	EARTHQUAKE EMERGENCY ASSESSMENT PROJECT (EEAP)	PROPOSED MASTERPLAN SHREE AJADI MA. VI., MELUNG-7, BIRAUTA, DOLAKHA	DESIGN & SUPERVISION CONSULTANT(DSC-1) RRMD SILT/ PACE/ CAGE JV	ENGINEER: Er. SALIN SHRESTHA DRAWN : Ar. SADICHCHHA SHRESTHA SCALE : PAPER SIZE : A3 STRUCTURE BY: CHECKED: APPROVED: DATE: OCTOBER, 2017	AR - 02 DWG CODE: 220400004


N
SITE OVERVIEW:
LAND AREA: 10208.8735 SQ.M. (00-3-3-3.46)
TOTAL BUILT UP TO BE DEMOLISHED: 235.78 SQ.M.
PROPOSED NEW BUILT UP (TOTAL) : 1113.78 SQ.M.
PROPOSED NEW BUILT UP: 14 CLASSROOMS
1 FLOOR ADMIN
4 LAB
1 LIBRARY
1 TOILET BLOCK
DESCRIPTION
LEGENDS
BUILDING TO BE DEMOLISH
SAFE BUILDING
SOFT PLAY GROUND
CONCRETE TILE FOR HARD SURFACE
GRAVELED SURFACE
BOUNDARY WITH BOUNDARY WALL
BOUNDARY WITHOUT BOUNDARY WALL
RETAINING WALL
EARTH FILLING
EARTH CUTTING
MASTER PLAN
AREA: 10208.87 sq.m
CLIENT
PROJECT TITLE
EARTHQUAKE EMERGENCY ASSESSMENT PROJECT (EEAP)
SHEET TITLE
MASTER PLAN
KUTI DANDA UCCHA MAVI, MAKAIBARI, DOLAKHA
CONSULTANT
PLANNING DESIGN TEAM
SHEET NO.
AR / 02
DWG NO.


N
VOLLEYBALL COURT
Lvl: 1517
PLAYGROUND
Lvl: 1513
PARKING
Lvl: 1510
ENTRY
SITE OVERVIEW:
LAND AREA: 4950.75 SQ.M. (9-11-2-3.25)
TOTAL BUILT UP TO BE DEMOLISHED: 333.18 SQ.M.
PROPOSED BUILT UP : 1113.55 SQ.M.
LEGEND
GREEN SPACE (SOFT SURFACE)
GRAVEL FOR HARD SURFACE
BRICK DUST
BOUNDARY WITHOUT BOUNDARY WALL
EXISTING BLOCKS TO BE DEMOLISHED
EXISTING BLOCKS TO BE REUSED
EARTH FILLING
EARTH CUTTING
FENCING
DESCRIPTION
TOTAL STUDENT NO.S = 291
NO. OF TEACHERS = 20
LEGEND | BLOCK NO. | BLOCK CODE | REMARKS
COMBINED BLOCK | 1 | 3-COMBINED-22 | PROPOSED BLOCK
CLASSROOM | 2 | - | EXISTING BLOCK
OFFICE | 3 | - | EXISTING BLOCK
PROPOSED MASTERPLAN
AREA: 4950.75 sq.m.
0 10 20 30 40
CLIENT:
PROJECT TITLE:
EARTHQUAKE EMERGENCY ASSISTANCE PROJECT (EEAP)
SHEET TITLE:
MASTERPLAN
CONSULTANT:
PLANNING AND DESIGN TEAM:
SHEET NO.
AR-02
DWG CODE:


N
SITE OVERVIEW:
LAND AREA: 3652.58 SQ.M. (7-2-3-2)
TOTAL BUILT UP TO BE DEMOLISHED: 650.95 SQ.M.
PROPOSED NEW BUILT UP (TOTAL) : 616.2 SQ.M.
LEGEND
BRICK DUST
GRAVELL FOR HARD SURFACE
GREEN SPACE (SOFT SURFACE)
BUILDING TO BE DEMOLISHED
EXISTING BUILDING TO BE REUSED
ENTRY GATE
FENCING
RETAINING WALL
WT
WATER TANK
ST
SEPTIC TANK
SP
SOAK PIT
SLOPE CUT AT APPROPRIATE ANGLE
BUILDING DESCRIPTION
TOTAL NO. OF STUDENTS = 410
TOTAL NO OF TEACHERS = 15
DESCRIPTION
BLOCK NO.
BLOCK CODE
REMARKS
RCC
1
-
EXISTING BLOCK
TOILET
2
-
EXISTING BLOCK
CLASSROOM BLOCK
3
3-CR-9
PROPOSED BLOCK
CLASSROOM BLOCK
4
3-COMBINED-7
PROPOSED BLOCK
TOILET
3
1-TT
PROPOSED BLOCK
NOTE: REFER SANITARY DETAILS FOR SIZES OF SEPTIC TANK AND WATER TANK
PROPOSED MASTERPLAN
AREA: 3652.58 SQ.M.
(7-2-3-2)
0
10
20
30
CLIENT
PROJECT TITLE
SHEET TITLE
CONSULTANT
PLANNING DESIGN TEAM
SHEET NO.
DWG CODE


N
SITE OVERVIEW
LAND AREA: (709.2 SQ.M. (5-6-2-3.95)
BUILT UP TO BE DEMOLISHED : 255 SQ.M.
LEGEND
TOTAL STUDENT NO.S =450
BLOCK NO. | DESCRIPTION | BLOCK CODE | REMARKS
① | CLASSROOM BLOCK | S-CR-12 | PROPOSED BLOCK
② | TOILET | I-TE | PROPOSED BLOCK
③ | CLASSROOM BLOCK | S-CR-6 | PROPOSED BLOCK
LEGEND
BRICK DUST
GRAVEL
GREEN SPACE (SOFT SURFACE)
BUILDING TO BE DEMOLISH
EARTH CUTTING
BOUNDARY WALL
ENTRY GATE
WATER TANK
SEPTIC TANK
SOAK PIT
PROPOSED MASTERPLAN
AREA : 2758.2 SQ.M. (5-6-2-3.95)
0
10
20
30
SECTION AT B-B
SCALE = (1:300)
PROPOSED BLOCK
EARTH CUTTING
SECTION AT A-A
SCALE = (1:300)
CLIENT
PROJECT TITLE
EARTHQUAKE EMERGENCY ASSISTANCE PROJECT (EEAP)
SHEET TITLE
MASTER PLAN
CONSULTANT
PLANNING DESIGN TEAM
SHEET NO.
A2-03


PLAYGROUND
Lot: 583
ENTRY
Lot: 582
PROPOSED MASTERPLAN
AREA: 3204.00 sq.m.
(6-4-3-0.27)
0 10 20 30 40
SECTION AT X-X
EXISTING BLOCK
PROPOSED BLOCK
EXISTING MASTERPLAN
AR-02

Appendix VI
Photographs

Shree Secondary School, Jyamirekhani, Likhu Rural Municipality-6 Ramechhap	
	
Consultation Meeting with school teachers, SMC members and Guardians	Consultation Meeting with school teachers, SMC members and Guardians
	
Access road to school	Existing school buildings
	
Existing water tap	Existing toilet facilities
	
Water streams in the north of school compound	SMC Chairperson showing school compound area to PPTA Team

Existing school buildings

School building and footsteps

School area in slope terrain

Foot steps within school compound area

Water stresm across the aceess road

Water stream with gabion wall protection in the south of school compound

Shree Tamakoshi Janajagriti Secondary School, Khimti bazaar, Likhu Rural Municipality-6 Ramechhap

Consultation Meeting with school teachers, SMC members and Guardians

Consultation Meeting with school teachers, SMC members and Guardians

	
School entrance gate and playground	Existing school building
	
School building and playground	School playground and trees
	
School playground, trees and existing school buildings	Tree plantation within the school compound
	
Existing TLC, made by bamboo sheet and CGI sheet	School Buildings and Toilet Facilities

Toilet facilities and construction materials stockpiled

Tamakoshi river in the west of school compound

Existing solid waste disposal practice

Existing water taps, but not in use

Garbage collection centre

Toilet facilities and construction materials stockpiled

Saraswati temple

Dust bins kept within school compound

Shree Secondary School, Sikral, Gelu, Manthali Municipality-12, Ramechhap	
	
Students during Assembly time	Existing water supply and toilet facilities
	
Existing school buildings	Consultation Meeting with school teachers, SMC members and Guardians
	
Consultation Meeting with school teachers, SMC members and Guardians	Site visit of school area by PPTA Team and school teachers
	
Saraswati temple within school compound	Motorable access road and school building

Existing school buildings

Slope terrain in the south-eaast direction of school

Shree Secondary School, Sikral, Gelu, Manthali Municipality-12, Ramechhap

School compound and school building

Water supply facility

Consultation Meeting with school teachers, SMC members and Guardians

Existing school buildings

Existing waste disposal practice

PPTA Team talking with female teachers on gender issues

School building and playground

Footsteps and school building

School infrastructures

Famous Mahadev Temple within school compound

School playground and fencing at the school compound

School playground and school buildings

Existing school building

PPTA Team school teachers and SMC members

Shree Secondary School, Sikral, Gelu, Manthali Municipality-12, Ramechhap	
	
Existing school buildings	Existing school buildings
	
Existing TLCs	Existing school buildings and playground
	
Existing TLCs	Existing TLCs
	
Consultation Meeting with school teachers, SMC members and Guardians	Slope terrain and trees in the south of school compound

Damaged school building

Toilet Facilities

Public foot trail next to school compound

Access road and school land proposed for the construction of TLC

Shree Secondary School, Sikral, Gelu, Manthali Municipality-12, Ramechhap

Consultation meeting with school teachers, SMC members and Guardians

Existing school building

Existing school building

School building damaged by earthquake

	
Existing toilet and water supply facilities	Solid waste disposal in the school compound premise
	
Gardening activities within school compound	Recently built toilet facilities
	
School Playground	School Playground
	
Saraswati temple	School Entrance Gate