Initial Environmental Examination

Project Number: 48431-003
Loan Number: LXXXX
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Myanmar: Equipping Youth for Employment Project

Prepared by the Department of Education Research, Planning and Training, Ministry of Education, Government of Myanmar for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 09 August 2016)

Currency unit	–	Kyat/s (MMK)
MMK1.00	=	$0.00084
$1.00	=	MMK 1,186.63

ABBREVIATIONS

ADB	-	Asian Development Bank
BEPPS	-	basic education post-primary school
BHS	-	branch high school
CESR	-	Comprehensive Education Sector Review
DBE	-	Department for Basic Education
DMF	-	design and monitoring framework
DPO	-	development partner organization
EA	-	executing agency
ECD	-	Environmental Conservation Department
EIA	-	environmental impact assessment
EMP	-	environmental management plan
ES	-	environment specialist
EYE	-	Equipping Youth for Employment
GOM	-	Government of Myanmar
GRC	-	grievance redress committee
GRM	-	grievance redress mechanism
IEE	-	Initial Environmental Examination
LSE	-	lower secondary education
MBD	-	Master bidding document
MMK	-	Myanmar Kyat
MOE	-	Ministry of Education
MONREC	-	Ministry of Natural Resources and Environmental Conservation
MOPF	-	Ministry of Planning and Finance
NECC	-	National Environmental Conservation Committee
NESP	-	National Education Strategic Plan
PAM	-	project administration manual
PMU	-	project management unit
PPTA	-	project preparation technical assistance
SES	-	secondary education subsector
SPS	-	safeguard policy statement
TA	-	technical assistance
TVET	-	technical and vocational education and training
USE	-	upper secondary education
WASH	-	water, sanitation, and hygiene

NOTE

In this report, “$” refers to US dollars.

TABLE OF CONTENTS

I. PROJECT BACKGROUND

A. Rationale

1. The proposed project will support reforms to realign Myanmar's secondary education subsector (SES) and technical and vocational education and training (TVET) to more effectively meet evolving workforce needs and advance inclusive growth. It will provide (i) policy-level support for cohesive SES and TVET reforms, and (ii) investment support for selected key priorities in the draft National Education Strategic Plan, 2016-2021 (NESP), complementing other development partner organization (DPO) support and building on ongoing Asian Development Bank (ADB) technical assistance (TA). The Project will support rationalization of SES and TVET and address key interlinked challenges in subsector management, access, and quality and relevance through 3 outputs: (i) policy frameworks and capacities for cohesive, workforce-responsive SES and TVET enhanced; (ii) new SES curriculum delivered and access expanded; and (iii) new TVET programs introduced and access expanded. The Equipping Youth for Employment (EYE) project is included in the Myanmar country program.

2. Many young entrants to Myanmar's workforce are poorly educated and unskilled or poorly skilled, undercutting national poverty reduction and inclusive growth objectives and threatening to trap the economy in a natural resource exploitation-based, low value-added model. SES (which produces most workforce entrants) and TVET (which suffers from very low access) are largely supply-driven and not responsive to Myanmar's evolving labor force needs. SES and TVET are also not mutually aligned or strategically linked. Such gaps in subsector management are interlinked with gaps in access and quality. Of the roughly 1.1 million new primary school entrants each year, only 10% complete upper secondary education (USE) 11 years later. Given that most forms of TVET (like higher education) require USE completion, this leaves a "missing million" youth without access to many forms of employment, skill training, or higher education. Prospects are particularly bleak for the half of all youth (and two-thirds of those in poor households) unable to complete even lower secondary education (LSE). Partly as a result of this, TVET access has been very low, with only 1 in 60 youth aged 16-19 enrolled in any form of training (versus 1 in 9 enrolled in higher education). Access to skills training is virtually nonexistent in rural areas, and access to construction, mechanical, or industrial skills is limited. Finally, low quality directly undermines access. In SES, outdated, weakly relevant curriculum and rote-based pedagogy (i) undercuts learning outcomes, evidenced in the two thirds failure rate on the matriculation exam at the end of USE; (ii) drives up costs of LSE and particularly USE; and (iii) contributes to lack of interest as the lead reason cited for SES dropout. Similarly, perceived low quality and relevance undermines both demand for TVET and trainee employability.

3. At the same time, Myanmar has put in place keystones for SES and TVET reforms. These include (i) the government's redoubled emphasis on education—reflected in the tripling of the education budget during fiscal years FY2011/12 and FY2013/14 alone; (ii) adoption of an evidence-based approach, with the ongoing Comprehensive Education Sector Review (CESR) feeding into formulation of the NESP; and (iii) commitment by the Ministry of Education (MOE), Department for Technical and Vocational Education (DTVE) and the Ministry of Industry (MOI), and other agencies to pursue cohesive SES and TVET reforms. The project will support key elements of Myanmar's forthcoming NESP and broader poverty reduction and inclusive growth objectives. It supports the first pillar of ADB's Interim Country Partnership Strategy, and would provide the foundational first phase of ADB's expected longer term (15-year) approach to the sector.

4. To address these challenges the Government of Myanmar has requested ADB's support for education and skills sector reform. This also includes support at national level for the delivery and expansion of a new SES curriculum.

5. Complementing this national level support, the project will improve access and completion in 48 rural and underserved townships by providing civil works, equipment, and other support to upgrade incomplete SES schools and construct (on a pilot test basis) dormitories for youth (particularly girls) from more remote villages. Civil works will be minor in scope and restricted to existing school sites, and will have minor environmental impacts, principally linked to modest health and safety risks to students during classroom construction.

B. Impact and Outcome

6. EYE will contribute to the longer-term impact **of enhanced education and skills base for inclusive growth**. Its expected outcome is **secondary education and TVET realigned to evolving labor force needs and equitably expanded**. Specific indicators and targets at the outcome and output levels are identified in the revised EYE project draft design and monitoring framework (DMF).

C. Outputs

7. Supporting key SES and TVET reform thrusts laid out in the NESP, the Project will deliver three core outputs:

i. **Policy frameworks and capacities for cohesive, workforce-responsive SES and TVET enhanced** - to anchor subsector-specific interventions under outputs 2-3, output 1 will advance cross-cutting reforms to rationalize and better link SES and TVET and reorient them to demand-driven, competency-based approaches, and will build related capacities within MOE, MOLIP, and related agencies;
ii. **New SES curriculum delivered and access expanded** - as the main DPO support to SES under the NESP, output 2 will focus on supporting MOE's implementation of curriculum reforms aimed at improving SES quality and relevance (which appear to be the lead factor undermining SES completion and learning outcomes), with focused support for access-related interventions (e.g., civil works and social marketing); and
iii. **New TVET programs introduced and access expanded**—output 3 will support the expansion of labor market-responsive TVET programs, focusing on replication and diversification of competency-based modular short courses being piloted with ADB TA support. It will provide related equipment and minor civil works, as well as support for stipends, social marketing, and other demand-side interventions.

8. **Safeguards**. In accordance with ADB's Safeguard Policy Statement (2009), the project is classified category C for involuntary settlement, as it will not entail involuntary resettlement. The project is classified category B for environment and indigenous peoples (termed "ethnic groups" in Myanmar). Civil works will be minor in scope and restricted to existing government school sites, and will have minor or no adverse potential environmental impacts (which principally relate to health and safety risks to students during construction), with measures in place to prevent or mitigate such potential impacts.

9. **Assurances and Conditions**. In relation to the IEE, the government has assured ADB that implementation of the project shall conform to all applicable ADB policies including those

concerning safeguards as described in detail in the project administration manual and loan documents. Additionally, no project disbursement shall be made prior to relevant MOE staff completion of training on ADB procedures.

10. The following assurances are given by the GOM:

(i) All school construction will be on a government owned site on an existing school campus, avoiding land acquisition and/or resettlement. There will be no temporary or permanent loss of land or other assets.
(ii) School classroom blocks and dormitories will be constructed on vacant lands within the school premises, with sufficient space allocation for school classroom blocks and dormitories on the existing school site;
(iii) All school construction will include disaster resilient design features for geographical locations categorized as at high risk of cyclone, earthquake and flood; with no UXO;
(iv) All classrooms and dormitories will be cited above flood levels;
(v) The presence of hazardous materials such as asbestos (or asbestos containing materials [ACM]) or toxic paints is unlikely;
(vi) Road access to the school construction site will be available, with adequate measures taken to ensure safety of students;
(vii) Potable water is available (pipe, bore, pump);
(viii) Site drainage and construction waste disposal will be adequate, with no risk of flood or landslip;
(ix) Electricity will be available and can be supplied to the construction site;
(x) Community agreement will be sought about the proposed construction site, through consultation and approval of township construction committee.

D. Purpose of the Report

11. This report is consistent with the ADB SPS. The report provides an initial assessment of potential environmental impacts (including health and safety dimensions) during school construction under the EYE project, and proposes as a priority, the mitigation measures needed to safeguard the health and safety of children. This relates specifically to DMF performance indicator 2b(iv) 'By 2022, 48 former incomplete SES schools upgraded, with 264 classrooms and 48 sex-segregated dorms built' and equipped, using new disaster-resistant designs'.[1] The report develops a Generic Construction Environment Management Plan for Classroom Blocks (Table 9) detailing mitigation measures, reporting requirements and institutional responsibilities to address adverse health, safety, and/or other potential environmental impacts associated with these abovementioned construction activities. The IEE is prepared under the guidance of the policies of the ADB and the Government of Myanmar (the Government) and includes sections describing the EYE project, environmental impacts and mitigation measures, mitigation and monitoring plan, and public consultation procedures.

E. Methodology Adopted for IEE

12. The IEE has been conducted through review of secondary information collected from relevant agencies including MOE staff, augmented by primary information collected from site investigations and consultations with communities in representative school sites in September 2016. In particular, consultations were carried out at each of a total of 13 school sites (including BEPPS, BMS, and BHS) distributed across 6 townships spanning all states and regions

[1] Numbers of classrooms include standard classrooms (1 per grade-level), laboratories, and library/multipurpose rooms. Separate latrines for girls and boys will also be provided

targeted for school upgrading. These consultations augmented more general EYE-related consultations during the PPTA, and focused on eliciting potential concerns of community members and education sector representatives. Relevant officials were consulted to verify information collected and also to solicit their concerns.

13. Analysis of information from these various sources was used to identify environmental impacts (confirmed to be minor and principally related to health and safety of young children during on-site construction), and to develop mitigation measures and an environmental monitoring plan (EMP).

II. POLICY, INSTITUTIONAL AND LEGAL FRAMEWORK

A. Asian Development Bank

14. The ADB SPS stipulates addressing environmental concerns, if any, of a proposed activity in the initial stages of project preparation. For this, the ADB SPS categorizes the proposed components into categories (A, B or C) to determine the level of environmental assessment required to address the potential impacts. The Project has been categorized as B due to the potential (albeit minor) environmental impacts, which principally relate to health and safety risks to students during SES classroom construction. Accordingly this IEE is prepared to address the potential impacts in line with the SPS. Stakeholder consultation was an integral part of the IEE which was carried out in September 2016, and an EMP has been prepared specifying mitigation measures to be adhered to during implementation of the Project.

B. Background on Myanmar Environmental Laws, regulations and Standards

15. The Ministry of Natural Resources and Environmental Conservation is the focal and coordinating agency for the overall environmental management in Myanmar.

16. The Environmental Conservation Department (ECD) is responsible for implementing National Environmental Policy and to manage natural resources conservation and pollution control on water, air and land. The main ECD responsibilities include:

(i) Development of legislation related to environmental regulations, guidelines and procedures;
(ii) Coordination of environmental conservation activities;
(iii) Development of plans on climate change mitigation and adaptation, on desertification control and ozone layer protection;
(iv) Preparation of national report in relation with international agreements.

17. ECD has presently 156 officers and 247 staffs under the supervision of the Director General at the Head Office in Nay Pyi Taw and in 14 states of the Union.

18. The National Environmental Conservation Committee (NECC) was then established in April 2011 by ECD which selected representatives from most Ministries to participate to this committee. There is at present one NECC but the Government has the objective, since 2013, to establish one such committee per Province of the Union. Different ministries involved in dealing with environmental issues also have their own policies, capacities, processes, legislations, and budgets for the environmental issues they have to address. Capacity and institution building in the short and medium term is being carried out by each ministry separately on their own budgets.

C. Environmental Laws and Regulations

19. Present major laws and regulations with relation to environmental management are summarized in the following Table 1.

Table 1: Applicable Environmental Laws & Regulations in Myanmar

LAWS AND REGULATIONS	YEAR	PURPOSE/DESCRIPTION
Environmental Conservation Law (ECL)	2012	This law provides the basis for the conservation and protection of the natural environment of Myanmar including the marine environment. The ECL provides the common principles of environmental conservation and for other environmental laws and policy. The Environmental Conservation Committee (ECC) within the Ministry of the Natural Resources and Environmental Conservation (MONREC) was formed to oversee implementation, enforcement, and further development of the ECL including providing education and assistance to government agencies and proponents with the requirements of the ECL. The ECC also plays a lead role in managing environmental disputes
Myanmar Environmental Conservation Rules	2014	These place responsibility on the Government to establish and adopt the necessary programmes for the conservation and enhancement of environment, protection, control and reduction of pollution in environment, and conservation. Articles 52, 53 and 55 of the Rules states that all Projects and Project expansions undertaken by any ministry, government department, organization, corporation, board, development committee and organization, local government or authority, company, cooperative, institution, enterprise, firm, partnership or individual (and/or all Projects, field sites, factories and businesses including expansions of such Projects, field sites, factories and businesses identified by the Ministry, which may cause impact on environmental quality and are required to obtain Prior Permission in accordance with Article 62 of the Rules) having the potential to cause Adverse Impacts, are required to undertake IEE or EIA or to develop an EMP, and to obtain an ECC from MONREC.
Environmental Impact Assessment Procedures	2015	The EIA procedures states that all projects undertaken by a ministry, government department, organization, corporation, board, development committee, local government or authority, company, cooperative, institution, enterprise, firm, partnership or individual that could cause significant adverse environmental or social impacts are subjected to screening for either and IEE or EIA, and ultimately require an Environmental Compliance Certificate (ECC) from MONREC before being allowed to proceed. The EIA process involves (i) screening, (ii) scoping for EIA, (iii) EIA/IEE preparation and review, (iv) EIA/IEE approval, and (v) appeal. The procedures includes project categorization which helps determining whether such project or activity will be required to conduct an IEE, an EIA or an EMP. The article 13 of the procedures states that the appropriate public consultation is required through all phases of the IEE and EIA.
Myanmar Investment Law	2012	This Law provides elements on foreign investments in Myanmar. Art. 17: The duties of the investor are as follow: (f) making no alteration of topography or elevation of the land obviously on which he is entitled to lease or use without the approval of the Commission; (h) carrying out not to cause environmental pollution or damage in accord with existing laws in respect of investment business;
Myanmar Investment Rules	2013	The Myanmar foreign investment rules contain several elements dealing with environmental protection, including: Art. 33. Proposals for economic activities that are considered capital intensive by the Commission, and that are prescribed to undergo environmental impact assessment by the Ministry of Environmental Protection and Forestry have to be submitted along with Environmental and Social Impact Assessment. Art. 54. The promoter or investor shall: (a) comply with Environmental

		Protection Law in dealing with environmental protection matters related to the business; Art. 123. If it is scrutinized and found out that the investor has carried out business that causes environmental pollution or has not taken action to minimize environmental pollution at the land for which he is entitled to lease or use, or if it is scrutinized and found that the work carries out causes nuisance to the persons who reside around such place due to noise or by culture and if relevant persons officially object, the Commission may terminate the lease or tendering right to use after making necessary inquiry. Art. 125. The investor, for operating any business, does not have the right to lease and develop the following lands: (a) religious lands; (b) cultural heritage and natural heritage regions designated by relevant Ministries; (c) lands restricted for Union defence and security; (d) lands under litigation; (e) lands restricted by the State from time to time; (f) lands where exists place or building which may cause situations such as impact on public environment noise, pollution, impact on culture within urban residential area due to the business of the investor.
National Sustainable Development Strategy	2009	This strategy concerns the sustainable management of natural resources, integrated economic development, and sustainable social development.
Conservation of Water Resources and Rivers Law	2006	To conserve and protect the water resources and rivers system for beneficial utilization by the public; to protect environmental impacts for the abuse use of water resources. This law strictly prohibits disposal of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel.
Conservation of Water Resources and Rivers Procedure	2012	Chapter 3 on Prevention of water pollution and Environmental Conservation in its Para (7 C) mentions the wastewater produced from any factories and industries nearby the rivers, channels and ports should be treated before discharge. Monitoring is required. Para (8E) states that everyone must take preventive measures in accordance with international standards in order to prevent the leakage/discharge of waste water and sewage into the rivers. Para (9) states that cost for pollution abatement is supported by the polluter
Forest Law	1992	The Forest Law, 1992 highlights forest protection, environmental and biodiversity conservation, and extended set-up of the permanent forest estates (PFE) and protected areas system (PAS). It provides opportunities for the promotion of private sector involvement in reforestation and timber trade, and decentralizes management responsibilities. It encourages community participatory approach in managing forest resources, particularly to satisfy the basic needs of the rural people. It demonstrates a shift from the concept of revenue generation and restriction to motivation and share of management responsibility with people.
Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law	1994	To protect wildlife, wild plants and conserve natural areas, to contribute towards works of natural scientific research, and to establish zoological gardens and botanical gardens. The Law highlights habits maintenance and restoration, protection of endangered and rare species of both fauna and flora, establishment of new parks and protected areas, and buffer zone management.
National Environmental Policy	1994	To ensure sound environmental policies in the utilization of water, land, forest, mineral resources and other natural resources in order to conserve the environment and prevent its degradation.
Environmental Conservation and Cleaning Rules & Regulations, Mandalay City Development Council	2009	It provides information on the policy, regulations on the solid waste management and drainage facilities management.
Protection and Preservation of Cultural Heritage Regions Laws	1998	To implement the protection and preservation policy with respect to perpetuation of cultural heritage that has existed for many years; to protect and preserve the cultural heritage regions and the cultural heritage. New project in such sensitive areas is required to get prior approval from the Culture

The Underground Water Act	1930	This Act provides the requirement for systematic use of ground water toward sustainable purpose.
Public Health Law	1972	For promoting and safeguarding public health and to take necessary measures in respect of environmental health.
Prevention and Control of Communicable Diseases Law (1995) (Revised in 2011)	1995 Revised in 2011	The Law highlights the functions and responsibilities of health personnel and citizens in relation to prevention and control of communicable diseases. It also describes measures to be taken in relation to environmental sanitation, reporting and control of outbreaks of epidemics and penalties for those failing to comply. The law also authorizes the Ministry of Health to issue rules and procedures when necessary with approval of the government
Factory Act	1951	For effective management in every factory for disposal of waste and effluent, and matters on health, cleanliness and precaution against danger.
Agricultural Land Law	2012	To protect the rights of the people working on the farmland.
National Water Policy	Draft 1, Aug. 2013	Provide general policy principles on water framework directive, uses of water, adaptation to climate change, enhancement of water availability, demand side management and efficiency of use, pricing principles, conservation of river corridors and water bodies, management of flood and drought, water supply and sanitation, institutional arrangements, transboundary rivers, research and capacity development, implementation of national water policy.

20. While there is no specific pollution law enacted, the Environmental Conservation Law 2012 has significant provisions that relate to both pollution and its control, referring to pollutants, waste and noise pollution.

D. Applicable Environmental Standards

21. National Environmental Quality Emission Guideline was amended in December 2015 and it addresses air, noise and water quality, and industry effluent and emission discharges. Of these, the relevant general emission guidelines that may apply to the project have been summarized in tables 3- 5 below.

Table 3: Site Runoff and Wastewater Discharges (Construction Phase)

Parameter	**Unit**	**Maximum Concentration**
Biological oxygen demand	mg/l	30
Chemical oxygen demand	mg/l	125
Oil and grease	mg/l	10
pH	S.U.[a]	6-9
Total coliform bacteria4	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50

[a] Standard unit

Table 4: Noise level

Receptor	One Hour LAeq (dBA)[a]	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for Public holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for Public holidays)
Residential, institutional, educational	55	45
Industrial, commercial	70	70

[a] Equivalent continuous sound level in decibels

Table 5: Air Emissions

Parameter	Averaging Period	Guideline Value µg/m^3
Nitrogen dioxide	1-year 1-hour	40 200
Ozone	8-hour daily maximum	100
Particulate matter PM10[a]	1-year 24-hour	20 50
Particulate matter PM2.5[b]	1-year 24-hour	10 25
Sulfur dioxide	24-hour 10-minute	20 500

[a] Particulate matter 10 micrometers or less in diameter
[b] Particulate matter 2.5 micrometers or less in diameter

E. International Treaties

22. Myanmar has also made commitments to the following international agreements and protocols on environmental, social, safety and occupational issues as shown in the following table.

Table 6: International Agreements on Environment, Social and Safety

INTERNATIONAL AGREEMENT	DATE OF SIGNATURE	DATE OF RATIFICATION	DATE OF MEMBERSHIP	CABINET APPROVAL
United Nations Framework Convention on Climate Change, New York, 1992 (UNFCCC)	11/06/1992	25/11/1994 (Ratification)	-	41/94 (09/11/1994)
Convention on Biological Diversity, Rio de Janeiro, 1992	11/06/1992	25/11/1994 (Ratification)	-	41/94 (09/11/1994)
International Tropical Timber Agreement (ITTA), Geneva, 1994	06/07/1995	31/1/1996 (Ratification)	-	-
Vienna Convention for the Protection of the Ozone Layer, Vienna, 1985	-	24/11/1993 (Ratification)	22/2/1994	46/93
Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal, 1987	-	24/11/1993 (Ratification)	22/2/1994	46/93
London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, London, 1990	-	24/11/1993 (Ratification)	22/2/1994	46/93
The Convention for the Protection of the World Culture and Natural Heritage, Paris, 1972	-	29/4/1994 (Acceptance)	-	6/94
United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and / or Desertification, Particularly in Africa, Paris, 1994 (UNCCD)		02/01/1997(Accession)	02/04/1997	40/96 (4-12-96)
Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington, D.C., 1973; and this convention as amended in Bonn, Germany,1979 (CITES)		13/6/1997 (Accession)	11/09/1997	17/97 (30-4-97)

ASEAN Agreement on the Conservation of Nature and Nature Resources, Kuala Lumpur, 1985	16/10/1997	-	-	-
Cartagena Protocol on Biosafety, Cartagena, 2000	11/5/2001			13/2001 (22-03-2001)
ASEAN Agreement on Transboundary Haze Pollution	10/06/2002	13/3/2003 (Ratification)	-	7/2003 (27-02-2003)
Kyoto Protocol to the Convention on Climate Change, Kyoto, 1997		13/8/2003(Accession)	-	26/2003 (16-07-2003)
Stockholm Convention on Persistent Organic Pollutants (POPs), 2001	-	18-4-2004 (Accession)	18/7/2004	14/2004 (01-04-2004)

F. Environmental Clearance Requirements for sub-projects

23. Sub-projects herein refer to specific sites at which EYE will support civil works for construction of SES classroom blocks and dormitories. As the sub-projects are located within the individual school sites and the new structures of each school will have less than 80 rooms,[2] there will be no need to secure environmental clearances from the ECD of MONREC.

24. Building approvals are required at each level from school to central level. The head teacher and school committee prepare a proposal using a standard form for school upgrade, based on government specified criteria (existing condition of school buildings, student enrollment, etc). Approvals are needed from Township level, State and Region level and central level DBE approval of the proposal. Final approval is given by the MOPF Budget Department. Building construction clearances are required at each of the following stages: meeting the school upgrade criteria; approval of the upgrade proposal; selection of contractors including scrutiny of documentation by MOE/DBE technical team; scrutiny and recommendations by school and township engineer, and school and township construction committee; approval by DG DBE to proceed; site checks on completion of (i) foundations, (ii) roofing, (iii) external brick walls, (iv) completion of construction and handover of all documents to the school committee. All school construction (classroom blocks and dormitories) under EYE will include disaster resilient design features for geographical locations categorized as at high risk of cyclone, earthquake and flood, with no UXO. Technical advice will be provided to relevant PMU and DBE staff by EYE consultants, including guidance on construction site safety for students and contractors, environmental and social safeguards monitoring, and quality standards for disaster resilient design and construction.

III. PROJECT DESCRIPTION

25. Under the EYE project, construction of SES classroom blocks and dormitories will be undertaken in 48 townships (indicatively the upgrade of one BEPPS or BHS school per township). The provisional list of EYE townships is provided in Table 7 below, and shown on the map of Myanmar (attached in Appendix 1) to illustrate the geographical extent of the sub-project sites. School sites at which IEE preliminary consultations were conducted during the PPTA, in September 2016, are highlighted in Table 7 and the respective site consultation townships are indicated on the Myanmar map. Selected photographs from consultation site locations are included in Appendix 2. The final list of schools to be targeted under the EYE project will be

[2] Infrastructure and service development category, EIA procedures (2015)

decided after full consultation between the PMU and DBE and approval from the GOM, and fully aligned with GOM prioritized programs for upgrading of SES schools.

26. Standard MOE plans for a secondary school 4 classroom block are attached in Appendix 3. This design will be modified to a 7 room block (for BEPPS-BEMS upgrade) or a 6 room block (for BHS-BEHS upgrade), for construction under the EYE project. The construction materials are listed in the design plans in Appendix 3. All EYE school blocks and dormitories will be constructed on vacant lands within the existing government school premises.

27. **Observations of existing facilities for students and teachers** from IEE site visits conducted in September 2016 to 13 schools in 13 townships (6 BEPPS/BMS and 7 BHS), with selected photographs of existing facilities included in Appendix 2**:**

(i) Toilet blocks at some school sites were sufficient in number and in good condition. In some schools the number of toilets and / or condition is not adequate and there are no bathroom/washing facilities.
(ii) Drainage on some school campuses is not well constructed and poor drainage increases the risk of encountering venomous snakes and mosquito transmitted diseases. Some schools have good drainage and piped water systems.
(iii) Waste is either recycled e.g. cement sacks reused and small pieces of wood used for fuel, or waste material is collected and burned in a pit. The contractor will be required to undertake site clearance after completion of the construction.
(iv) There is a lack of teacher accommodation and some teachers have to travel far.
(v) School construction is usually concrete or woven wood (hta-yan) which is not waterproof. Dorms (eg. used for G11 exam prep camp) are made of bamboo and wood, or space allocation on the floor of the school hall or classroom.
(vi) Some schools consist of one large open hall accommodating 5 or 6 classes with no partitioning. Classroom furniture is inadequate in some schools.
(vii) Termite infestation can cause damage to school constructions.
(viii) Community contribution school application and township approval is required for school upgrade. Criteria for upgrade are no. of students, pass rate, furniture and facilities.
(ix) Where there is no electricity supply the school has a diesel generator or solar panels. This provision will be assessed on a case by case basis for dormitory construction.
(x) Existing school buildings have been constructed with community committee or NGOs funding, by contracted companies. Some are in need of renovation.

28. **School Construction Implementation Schedule** (indicative)

SES classroom blocks, dormitories and toilet block construction	2017				2018				2019	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Finalization/approval of disaster-resilient model school designs / standards										
Preparation of bidding document										
Advertisement for works contract										
Bid Evaluations and Contract(s) award										
Construction phase										
Site monitoring / supervision visits										

IV. BASELINE ENVIRONMENT SITUATION

29. As the project schools are located in 48 different townships, it is difficult to undertake a detailed baseline environmental description of each project site prior to project implementation. Table 7 below provides a list schools targeted for upgrading, which will be validated following completion of the 2016 MOE school mapping exercise (supported by UNESCO): any revisions

in the list will be mutually agreed by MOE and ADB, with additional site investigations conducted and documented in summary site reports, which will include assessment of health, safety, and other environmental risks and mitigation measures. Table 7 outlines key environmental features within SES school sites, as a means to identify the potential environmental impacts of the various sub-projects.

Table 7: Environmental baseline data for school sites (pending final validation of the site list).

School name and type	Township State/Region	Climatic type	Seismicity	Any Surface water sources nearby	Water supply and sanitation (reticulated systems are available/ or septic tanks)	Location description (dense urban, rural etc)	Presence of forests, protected area and biodiversity zones of significant value adjacent to project sites	Presence of cultural and historic sites within school premises.
Bae Ga Yet BHS	Kangyidaunt Ayeyarwady	Tropical savanna climate (Aw)	II	River in township; Flood affected Aug 2016	septic tank	rural		none
Hlay Kyi Tet BHS	Thabaung Ayeyarwady	Tropical savanna climate (Aw)	II	River in township; Flood affected Aug 2016	septic tank	rural	Rakhine Yoma Range	none
Ta Man Chaung BEPPS	Ngapudaw Ayeyarwady	Tropical savanna climate (Aw)	II	River in township	septic tank	rural	Thamihla kyun Wildlife Sanctuary Rakhine Yoma Range	none
Yay Sa Khan BHS	Kyonpyaw Ayeyarwady	Tropical savanna climate (Aw)	II	Rivulet in township	septic tank	rural		none
Kwin Ball BEPPS	Kyaunggon Ayeyarwady	Tropical savanna climate (Aw)	II	Rivulet in township	septic tank	rural		none
Kyone Sha Sar Phyu Su BHS	Zalun Ayeyarwady	Tropical savanna climate (Aw)	II	River in township; Flood affected Aug 2016	septic tank	rural		none
Tha Khut Kwin BHS	Myanaung Ayeyarwady	Monsoon climate (Am)	II	River in township; Flood affected Aug 2016	septic tank	rural		none
Kyone Ku (Tuu Myaung) BEPPS	Pyapon Ayeyarwady	Tropical savanna climate (Aw)	II	River in township	septic tank	rural		none
Takuntaing (Kywel Kuu) BEPPS	Kyaiklat Ayeyarwady	Tropical savanna climate (Aw)	II	River in township	septic tank	rural		none
Agegyi BHS	Dedaye Ayeyarwady	Tropical savanna climate (Aw)	II	River in township	septic tank	rural		none

Tharyargone BMS	Bago Bago	Tropical savanna climate (Aw)	V	Rivulet in township	septic tank	rural	Moyingyi Wetland Wildlife Sanctuary	none
Kawa BEPPS	Kawa Bago	Tropical savanna climate (Aw)	IV	Rivulet in township	septic tank	rural		none
Phaya Pyo Village BHS	Waw Bago	Tropical savanna climate (Aw)	IV	Rivulet in township	septic tank	rural	Moyingyi wetland	none
Myo Ma BEPPS	Taungoo Bago	Tropical savanna climate (Aw)	IV	River in township	septic tank	rural	Shinpinkyetthauk Wildlife Sanctuary , Western Shan Yoma Range	none
Nyaung Pinn Thar Ywar Ma BEPPS	Phyu Bago	Tropical savanna climate (Aw)	V	Rivulet in township	septic tank	rural	Western Shan Yoma Range	none
Nyaung Chay Htauk BEPPS	Oktwin Bago	Tropical savanna climate (Aw)	IV	None	septic tank	rural	Sein Ye Forest Park, Shinpinkyetthauk Wildlife Sanctuary Western Shan Yoma Range	none
Ka Pa Sa 6 BHS	Padaung Bago	Monsoon climate (Am)	II	River in township; Flood affected Aug 2016	septic tank	rural		none
Min Kut BHS	Paungde Bago	Monsoon climate (Am)	III	None	septic tank	rural		none
In Bin Hla BHS	Thegon Bago	Monsoon climate (Am)	II	None	septic tank	rural		none
Aung Say TanaBEPPS	Magway Magway	Monsoon climate (Am)	III	River in township; Flood affected Aug 2016	septic tank	rural	Shwesettaw Wildlife Sanctuary	none
Phan Khar Sann BHS	Natmauk Magway	Tropical savanna climate (Aw)	IV (recent earthquake Aug 2016 affected some existing sch structure)	Rivulet in township	septic tank	rural		none
A Lae Thaung BHS	Yesagyo Magway	Tropical savanna climate (Aw)	III	River in township; Flood affected	septic tank	rural		none

				Aug 2016				
Yay Htwut BEPPS	Patheingyi Mandalay	Tropical savanna climate (Aw)	V	2 rivulets in township; Flood affected Aug 2016	septic tank	rural		none
Phyaut Seit Pin BEPPS	Kyaukse Mandalay	Tropical savanna climate (Aw)	IV	Rivulet in township	septic tank	rural		none
Htan Taw BHS	Sintgaing Mandalay	Tropical savanna climate (Aw)	V	2 rivulets in township; Flood affected Aug 2016	septic tank	rural		none
Taung Be Lu BHS	Tada-U Mandalay	Tropical savanna climate (Aw)	III	Rivulet in township; Flood affected Aug 2016	septic tank	rural		none
A Lin Yaung BEPPS	Myingyan Mandalay	Tropical savanna climate (Aw)	IV	River in township; Flood affected Aug 2016	septic tank	rural		none
Lat Pan Pin BHS	Kyaukpadaung Mandalay	Tropical savanna climate (Aw)	IV	None	septic tank	rural	Popa Mountain National Park	none
Gyo BHS	Ngazun Mandalay	Tropical savanna climate (Aw)	III	River in township; Flood affected Aug 2016	septic tank	rural		none
Myin Ka Pa BHS	Nyaung-U Mandalay	Tropical savanna climate (Aw)	IV	Flood affected Aug 2016	septic tank	rural	LawkanandaWildlife Sanctuary	none
Magyigone Village BEPPS	Yamethin Mandalay	Tropical savanna climate (Aw)	III	Lake and rivulet in township	septic tank	rural		none
Twinwya Village BHS	Pyawbwe Mandalay	Tropical savanna climate (Aw)	III	None	septic tank	rural		none
Wun Twin 4 BEPPS	Wundwin Mandalay	Tropical savanna climate (Aw)	III	None	septic tank	rural		none
Than Bo BEPPS	Khin-U Sagaing	Tropical savanna	V	None	septic tank	rural	Upper Ayeyarwady Catchment	none

		climate (Aw)						
Han Linn BHS	Wetlet Sagaing	Tropical savanna climate (Aw)	V	None	septic tank; rain water for drinking; water source has lime content.	rural	Hot sprints and national heritage site within 5 km of the school	none
Zi Kone Myo Shae BEPPS	Kanbalu Sagaing	Tropical savanna climate (Aw)	V	None	septic tank	rural	Chatthin Wildlife Sanctuary Upper Ayeyarwady Catchment	none
Kywe Yae BEPPS	Monywa Sagaing	Tropical savanna climate (Aw)	III	River in township	septic tank	rural	Bawditataung Nature Reserve	none
Oat Shigyi BHS	Ayadaw Sagaing	Tropical savanna climate (Aw)	IV	Small lake in township	septic tank	rural	Bawditataung Nature Reserve	none
Chaung Sone BEPPS	Yinmabin Sagaing	Tropical savanna climate (Aw)	III	Rivulet in township	septic tank	rural		none
Pan Ywar BHS	Pale Sagaing	Tropical savanna climate (Aw)	III	None	septic tank	rural		none
Kathar 3 BEPPS	Katha Sagaing	Tropical savanna climate (Aw)	IV	River in township; Flood affected Aug 2016	septic tank	rural	Upper Ayeyarwady Catchment	none
Min Kone BEPPS	Banmauk Sagaing	Tropical savanna climate (Aw)	IV	None	septic tank	rural	Upper Ayeyarwady Catchment	none
A La Ka 3 BHS	Kale Sagaing	Tropical savanna climate (Aw)	V	3 rivulets in township	septic tank	rural	Maharmyaing Wildlife Sanctuary	none
Taung Lay Lone BHS	Taunggyi Shan	Tropical savanna climate (Aw)	IV	2 small lakes in township	septic tank	rural	Taunggyi Bird Sanctuary,	none
Naung Yin BEPPS	Hsi Hsaing Shan	Tropical savanna climate (Aw)	III	None	septic tank	rural		none
Pekon 7 BEPPS	Pekon Shan	Tropical savanna	III	River in township	septic tank	rural	Inlay Lake Wetland Sanctuary	none

		climate (Aw)						
Pone Htun Man Pyain BEPPS	Kutkai Shan	Tropical savanna climate (Aw)	III	None	septic tank	rural		none
La 3 BHS	Kyaukme Shan	Tropical savanna climate (Aw)	III	None	septic tank	rural		none

Note: Seismic Zone categorization (See source in Appendix 4): I – Low Zone (equivalent Mercalli scale VI); II – Moderate Zone (equivalent Mercalli scale VII); III – Strong Zone (equivalent Mercalli scale VIII); IV Severe Zone (equivalent Mercalli scale VIII-IX); V – Destructive Zone (equivalent Mercalli scale IX).

Sources:

http://www.themimu.info/gis-resources
https://www.researchgate.net/publication/263873098_EARTHQUAKE_AND_TSUNAMI_HAZARD_IN_MYANMAR
https://en.wikipedia.org/wiki/List_of_protected_areas_of_Myanmar
Myanmar Protected Areas (2011): Contex, Current Status and Challenges, Istituto Oikoas and BANCA

V. ANTICIPATED ENVIRONMETAL IMPACTS AND MITIGATION MEASURES

30. **Potential adverse environmental impacts during construction**. Anticipated adverse health and safety or other environmental impacts that will arise from minor civil works will be minimal, localized, and limited to the construction phase. These principally include risks to occupational and school user's health and safety from construction activities (e.g., young children playing near open excavation or risk of getting hit by a construction vehicle). Additional potential impacts include an increased level of noise and dust due to the usage of vehicles and building construction activities, and there will be a need to properly dispose of construction debris generated during the construction works. The presence of hazardous materials such as asbestos (or asbestos containing materials [ACM]) or toxic paints is unlikely, and asbestos containing materials no longer exist in the market. Construction of structures will avoid using hazardous materials, especially asbestos, in accordance with the National Building Code 2012 (draft), and this will be specified in the bidding documents. Monitoring and inspection of school construction will ensure adherence to government guidelines. Construction activities will be accommodated on vacant land within existing school premises, with no land acquisition and/or resettlement (there will be no temporary or permanent loss of land or other assets).

31. The civil works contractors will have main responsibility to prevent and/or mitigate environmental impacts including health and safety during project construction. For that purpose, a generic construction EMP has been developed that can be adjusted to each construction site based on the nature and scope of interventions at the specific school site.

32. **Most potentially adverse health and safety, or other environmental impacts** will be mitigated through sound facility design, construction practices, and site management (e.g., cordoning off excavation areas from children's play areas) All buildings will be designed in compliance with relevant GOM's design standards and codes for safe buildings, including but not limited to: (i) MOE complies with school construction specifications and standards school design, developed by the DBE Engineering Group following the Myanmar National Building Code 2012 (draft); (ii) only low or no volatile organic compound (VOC)-emitting materials will be used (including paints, coatings, adhesives, carpet and furniture's) to ensure high indoor air quality; (iii) water-based nontoxic, no allergenic paint for drywall or plaster surfaces will be preferred to latex or oil-based paints. In addition water supply connection to newly constructed buildings (classroom blocks and dormitories) will be one of the following, determined by school location: rain water collection, tube well, piping from city development, pond/sea water, or tap well, waste water (sinks, showers, toilets) will be plumbed to existing or newly built on-site septic systems, or to existing municipal sewer to ensure that groundwater is not contaminated and all construction sites will be confirmed as having no UXO.

33. **The project's vulnerability to climate variability and change is**: All classrooms and dormitories are cited above flood levels. Increased variability in precipitation, including increased rainfall intensities, may result in increased temporary storm water runoff and possible scouring around structures, especially onsite wastewater storage and treatment. Proper siting of these facilities will minimize the risk of scouring. In the environmental management plan the mitigation measures for this impact will be addressed.

34. **Generic Environmental Management Plan (EMP).** A Generic EMP has been prepared to define the procedure to be followed by the Executing Agency (EA), the Project Management Unit (PMU), the participating schools, and civil works contractors for the avoidance or mitigation of potential adverse health, safety, and/or other environmental impacts that may arise out of

minor civil works under Output 2 of the Project.

35. The Generic EMP requires civil works contractors to plan for the construction projects including issues such as work scheduling, consultation with and notification to potentially affected people. The Generic EMP follows the Government of Myanmar (GOM)'s regulations relevant to this Project, as well as ADB's SPS (2009). The Generic EMP will be included as a separate annex in civil work contracts. The EA, through the PMU and its local project coordinators at the township level, and assisted by the environment specialist, will be responsible for ensuring contractors' compliance with the Generic EMP.

VI. ENVIRONMENTAL MANAGEMENT PLAN

36. The executing agency of the Project will be responsible to ensure that all activities under the Project are conducted in accordance with (i) the national environmental, health and safety laws, regulations, procedures, and guidelines; (ii) relevant design standards and codes for school buildings and classrooms; and (iii) this generic EMP. The PMU, through its local project coordinators and with the support of the environment specialist, will be responsible for overseeing the implementation of the generic EMP, including preparation of bidding documents, supervision of civil works contractors, and reporting of the EMP implementation. Table 8 describes the institutions involved in the project, and their role in executing the Generic EMP. Specific environment management activities during pre- and construction period are described in the following paragraphs.

Table 8: Generic EMP implementation arrangements

Executing Agency,	• The executing and implementing agency of the project.
Project Management Unit (PMU)	• The PMU will be based in the Ministry of Education Department of Education Research, Planning and Training, and staffed by a project manager (MOE), a procurement coordinator (contractual), a civil works coordinator (contractual), and two financial/ accounting officers (contractual). • The PMU will assume the overall responsibility for project coordination on behalf of the EA, and will implement the following tasks: (i) coordinate procurement (with the support of Government officers with responsibility for procurement); (ii) coordinate and supervise the implementation of the generic EMP, with the support of an external environmental expert (EEE); (iii) include generic EMP in bidding documents; ensure that civil works contracts are responsive to generic EMP provisions; (iv) conduct site visits to each school with civil works at least twice (at inception and completion stage); (v) prepare an EMP implementation progress report as input to quarterly and annual project reports, including reporting on complaints received, if any.
Schools	• Communication to the community that construction will be taking place between specific dates Mechanism to inform students of the risks and the rule to be followed to ensure their safety The selected schools will be responsible for supervising contractors during minor civil works. • Each school will appoint one technical team member to supervise contractors and to receive and redress complaints, if any.
Environment Specialist	• An individual consultant will be engaged as EEE to support the PMU in implementing the project. Amongst others, the environment specialist will: (i) confirm that EYE school construction works do not cause any involuntary resettlement impacts; (ii) help develop bidding documents for EYE school construction works to ensure that

	the environment-related specifications provided in the generic EMP are incorporated in technical specifications; (iii) provide support in evaluating bids for EYE school construction works to ensure that compliance with the environment-related specifications is evaluated and documented in bid evaluation reports; (iv) review and clear, on behalf of the PMU, site-EMPs prepared by civil works contractors; (v) Conduct at least two site visits to each selected school site (at the beginning of the works and at completion stage); (vi) Prepare annual progress reports of the EMP implementation (including compliance of the civil works contractors with obligations, inspection activities and findings, problems encountered during EYE school construction and operations, complaints received, if any, and the relevant corrective actions undertaken); (vii) together with the architectural engineers, carry out EYE school construction completion inspections to confirm the regularity and safety of each building, with the involvement of relevant government agencies; (viii) prepare an EMP implementation completion report, no later than three months after completion of all EYE school construction works supported under the project;
Civil Work Contractors	• The civil work contractors will have main environmental management responsibility. They will: (i) ensure that their bids respond to environmental management requirements of this Generic EMP; (ii) develop site-EMPs for each project facility based on the generic EMP; (iii) assign or hire a qualified person to coordinate the site-EMP implementation, including community and occupational health and safety, and ensure the health and safety of children and teachers on site; (iv) ensure that adequate resources are available to implement the site-EMP throughout the construction period; (v) secure appropriate permits and licenses before undertaking the works; (vi) establish a telephone hotline as simplified GRM, staffed at all times during working hours; (vii) disseminate information on the construction progress, including anticipated activities that might cause safety risk, is disseminated in a timely manner; (viii) inform the schools, the PMU, and ADB in case of complaints.

37. **Detailed design.** The detailed drawings for each building shall be undertaken in accordance with the provisions of the relevant building codes pertaining to education facilities.

38. **Preparation of bidding documents and evaluation of bids.** Civil works and equipment will be procured in accordance with ADB's Procurement Guideline (2015, as amended from time to time). The PMU, with the support of environment specialist, will incorporate the Generic EMP, including the clauses defined in para 31 and 32, and Table 8, and design specifications, into the respective bidding documents.

39. **Preparation of site-EMPs.** After contract award but before construction commencement, each civil works contractor will develop a site-EMP based on additional site investigations, consultation with school management and PMU local project coordinators. The site-EMPs can be generated using the generic construction EMP in Table 9. The contractor shall also assign a qualified person to coordinate the site-EMP implementation and the complaint hotline. No construction shall be commenced without cleared site-EMP by the PMU local project coordinator.

40. **Confirmation of project readiness.** After contract award but before construction commencement, the PMU local project coordinator, with the support of the environment specialist, shall confirm the following to the PMU and the EA:

(i) The school management has appointed a staff member for day-to-day supervision of civil works activities;
(ii) The contractor has developed a site-EMP complying with the generic construction EMP) and responding to contract clauses and specifications;
(iii) The contractor has secured all required permits for construction and rehabilitation; and
(iv) The contractor has assigned a qualified person to coordinate site-EMP implementation, established a hotline, and disclosed civil works and site-EMP related information in and around the construction site.

41. **Implementation of the site-EMP.** During construction, the contractor has overall responsibility for the site-EMP implementation. The contractor will cover the costs for mitigation and protection measures based on the design. Each contractor shall submit to the PMU local project coordinator and the school management, monthly progress reports which shall include a section on the site-EMP implementation.

42. **Site inspections, monitoring and public consultation by the school management and the PMU local project coordinator.** During minor civil works, the PMU local project coordinator, together with the school management, will conduct regular site inspections to oversee the contractor's compliance with the approved site-EMP. Inspections shall be conducted at least on quarterly basis during civil works, and follow the site inspection and monitoring checklist developed for that purpose (Section VI.B). Public consultation during construction will mainly rely on informal interviews with the school staff and nearby residents during site inspections by the PMU, the architectural engineers, and the environment specialist. The completed inspection checklists will be submitted to the PMU on a quarterly basis for verification and confirmation. In case of violations, the PMU shall report it to the township administration. The checklists will be incorporated into quarterly and annual reports to ADB, which will be disclosed on the project website.

43. **Monitoring and reporting by the environment specialist.** The environment specialist will conduct at least two site visits to each school classroom and dormitory site where civil works are being carried out (at the beginning of civil works, and at completion stage). The environment specialist will synthesize status of civil works and Generic EMP implementation in annual progress reports to ADB (including compliance of contractors with obligations, problems encountered during construction and operation, and the relevant corrective actions undertaken). At the end of the EYE school construction works, it will be necessary to confirm the regularity and safety of each building or WASH system. The completion inspection will be conducted by the environment specialist together with representatives from the PMU. The environment specialist will compile, on behalf of the EA, a Generic EMP implementation completion report, no later than 6 months after completion of all civil works related to the project.

Table 9: Generic Construction Environment Management Plan for Classroom Blocks[3]

Project Description		Institutional arrangements	
Project location:		Contractor:	*(Name, Contact Number)*
Name of school:		PMU local coordinator:	*(Name, Contact Number)*
Planned interventions:		Environment Specialist (ES), Architectural Engineer:	*(Name, Contact Number)*
Construction period:	*(mm/yyyy-mm-yyyy)*	*Township* environment agency	*(Name, Contact Number)*

Will the activities involve the following:		Activity	Management and Mitigation Measures
[X] Yes	[ ] No	Construction readiness	Section A below
[ ] Yes	[ ] No	Building, rehabilitation and/or extension	Section B below
[ ] Yes	[ ] No	Extension of WASH facilities (water supply, sanitation, wastewater collection and treatment)	Section C below
[ ] Yes	[ ] No	Removal of hazardous or toxic materials	Section B below
[X] Yes	[ ] No	Community health and safety	Section D below

Stage/Activity	Potential Impacts and/or Issues	Mitigation measures	Implementing. Agency	Supervising. Agency	Monitoring Indicators
Pre-construction Phase					
(A) Construction readiness	General conditions	• Confirm that facility upgrading plan responds to contract clauses; • Secure all required permits for construction and rehabilitation; • Assign a qualified person to coordinate the site-EMP implementation, including workplace safety; • Establish a telephone hotline as site-specific GRM, staffed at all times during working hours. Display contact details prominently displayed at the site; • Notify the public of the works through appropriate notification	Contractor	School, PMU	Confirmation letter by Contractor to PMU and School

[3] The following tables can be used as template for the preparation of site-specific environmental management plan (EMP) for each school. Depending on the type of activities at the specific site, different sections of the Generic Construction EMP are triggered. Sections A and D are always triggered.

		prior to construction. Disseminate information on the construction progress, including anticipated activities that might cause safety risk in a timely manner.			
Construction Phase					
(B) Health and Safety	Community/ children Health and Safety	• Assess potential disruption to services and identify risks before starting construction; If temporary disruption is unavoidable, develop a plan to minimize the disruption and communicate the dates and duration in advance to all affected people, in coordination with the school management; • Place clear signs at construction sites in view of children and staff as well as the public, warning people of potential dangers such as moving vehicles, hazardous materials, etc., and raising awareness on safety issues; • Ensure that all construction sites will be made secure, discouraging access through appropriate fencing whenever appropriate; • Prepare traffic and access plan within and around School during construction, as needed	Contractor	School, PMU, ES	Inspection checklists (ES), Progress report (PMU, ES)
	Occupational Health and Safety	• Provide safe supply of clean water and an adequate number of latrines and other sanitary arrangements at the site and work areas; • Provide clean area to rest and eat for workers, away from potential exposure to hazardous substances; • Provide garbage receptacles at construction site; • Provide personal protection equipment for workers in accordance with relevant health and	Contractor	School, PMU, ES	Inspection checklists (ES), Progress report (PMU, ES)

		safety regulations; • Develop an emergency response plan to take actions on accidents and emergencies; • Document and report occupational accidents, diseases, and incidents; • Emergency contact numbers for local fire, medical and police services shall be kept at prominent place.			
(**C) General Construction Works**	Dust generated during construction, air emissions from construction vehicles and machinery	• Keep demolition debris in controlled area and spray with water mist to reduce debris dust; • Keep surrounding environment free of debris to minimize dust; • There will be no open burning of construction/waste material at the site; • There will be no excessive idling of construction vehicles at sites Regularly (at least once a day) spray water on construction sites where fugitive dust is generated; • Store harmful materials in appropriate places and covering to minimize emission; • Cover trucks with tarps or other suitable cover to avoid spilling; • Regularly consult with school administration and nearby residents to identify concerns, and implement additional measures as necessary (i.e. if complaints are filed).	Contractors	School, PMU	Inspection checklist (School); Progress Report (PMU)
	Facility design in compliance with design codes	• Ensure that the building envelopes (external walls) are built to a good quality standard, using high quality insulating materials; • Confirm that facility extension or rehabilitation complies with relevant GOM's design standards and codes for energy-efficient, safe buildings, including but not limited to: Myanmar National	Contractors	PMU, ADB, ES	Detailed Design Drawings

		Building Code 2012 (draft) and other standards • Ensure that only low or no VOC-emitting materials will be used (including paints, coatings, adhesives, carpet and furniture's); • Select water-based nontoxic, no allergenic paint for drywall or plaster surfaces (no latex or oil-based paints).			
	Noise from construction activities	• Maintain equipment and machinery in good working order; • Undertake regular equipment maintenance, ensure compliance with relevant standard; • Operate between 6am-10pm only and reach an agreement with School and nearby residents regarding the timing of works, to avoid any unnecessary disturbances; • Install temporary anti-noise barriers to shield school buildings where needed; and • Seek suggestions from school management and nearby residents to reduce noise annoyance	Contractors	School, PMU ES	Inspection checklist (School); Progress Report (PMU)
	Vegetation, re-vegetation of disturbed areas; greening of sites	• Cutting or removal of trees for any reason outside the approved construction area is strictly prohibited; • Properly re-vegetate disturbed areas after completion of civil works.	Contractor	School, PMU, ES	Inspection checklist (School); Progress Report (PMU)
	Toxic and hazardous wastes, products	• Prior to construction, search existing facilities for chemicals and any other substances such as asbestos or asbestos containing materials (ACM); • If toxic solid waste is found during construction, construction activities should be suspended and the State and Region level Environmental Conservation Department consulted to define	Contractor	School, PMU, ES	Inspection checklist (School); Progress Report (PMU)

		appropriate actions; • Store chemicals/hazardous products and waste on impermeable surfaces in secure, covered areas; • Provide spill cleanup measures and equipment at each construction site. • Hazardous and toxic waste should be stored in sealed receptacles away from reach of children and disposed of in accordance to national environmental guidelines.			
	Construction and domestic wastes and wastewater generated on construction sites	• Discharge construction wastewater and domestic wastewater to sewer systems (if possible), or provide on-site treatment/disposal facilities to ensure compliance with effluent discharge standard; • All valuable materials (doors, windows, sanitary fixtures, etc) should be carefully dismantled and transported to an assigned storage area. Valuable materials should be recycled within the project or sold; • Provide appropriate waste storage containers for worker's construction and hazardous wastes; • Install confined storage points of solid wastes away from sensitive receptors, regularly haul to an approved disposal facility; • Use licensed contractors to remove wastes from the construction sites; • Indiscriminate disposal of rubbish, construction wastes or rubble, and burning of waste, are strictly prohibited; • Provide adequate solid waste collection facilities in all buildings; • Regularly clean and disinfect waste collection facilities.	Contractor	School Admin; ES	Inspection checklists (ES), Progress report (PMU, ES)
(D) Extension of water supply and	WASH facilities, including	• Secure approval from relevant water authority for proposed water	Contractor	School, PMU	Inspection checklists (ES),

sanitation Facilities	water supply, sanitation facilities, and wastewater collection and/or treatment design in compliance with design codes	supply and wastewater collection and treatment systems; • Ensure the quality of drinking water source is tested in compliance with relevant standards and codes for water supply, including but not limited to: WHO drinking water standard and/or National drinking water standards; • Ensure connection of constructed buildings to on-site pre-treatment facilities and to municipal sewer system that comply with relevant design standard and codes			Progress report (PMU, ES)

A. Environmental Safeguard Clauses for Civil Works Contracts

The general environment, health and safety obligations of the Contractor within this Contract, without prejudice to other official provisions in force, include the following:

- The Contractor shall ensure that the construction and decommissioning of project facilities comply with (a) all applicable laws and regulations of Myanmar relating to environment, health and safety; (b) the Environmental Safeguards stipulated in ADB's Safeguards Policy Statement (2009); and (c) all measures and requirements set forth in the Generic environmental management plan (EMP).
- The Contractor shall establish a telephone hotline to received community complaints, staffed at all times during working hours. Contact details shall be prominently displayed at the sites. The Contractor shall disseminate, in a timely manner, information on the construction progress, including anticipated activities that might cause safety risk.
- The Contractor shall secure all necessary permits and licenses before undertaking the works.
- The Contractor shall assign sufficient qualified staff to manage site-EMP implementation, and ensure adequate financial resources are available to implement the site-EMP throughout the construction period.
- The Contractor shall provide equal pay for equal work, regardless of gender or ethnicity; provide those they employ with a written contract; provide the timely payment of wages; use local unskilled labor, as applicable, comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment, e.g. health, safety, welfare and the workers' rights, and anti-trafficking laws; and not employ child labor. The Contractor shall maintain records of labor employment, including the name, ethnicity, age, gender, domicile, working time, and the payment of wages.
- All buildings shall be designed in compliance with relevant the Government of Myanmar's design standards and codes for energy-efficient, safe buildings, including but not limited to: the relevant general emission guidelines that may apply to the project as summarized in Section D Applicable Environmental Standards tables 3-5. Only low or no volatile organic compound (VOC)-emitting materials shall be used (including paints, coatings, adhesives, carpet and furniture's) to ensure high indoor air quality. Water-based nontoxic, no allergenic paint for drywall or plaster surfaces shall be preferred to latex or oil-based paints. All facilities shall be properly sited to minimize the risk of scouring that may result from increase intensity of precipitation as a result of climate change.
- The Contractor shall take necessary precautions to avoid interruptions to water supply, wastewater collection, heating and other utility services during the civil works.
- The Contractor shall prepare a construction site-EMP based on the Generic construction EMP (Table 9: Generic EMP).
- The Contractor shall take appropriate sanctions against personnel violating the applicable specifications and provisions on environment, health and safety.
- The Contractor shall document, and systematically report to the school management and the project management unit (PMU), of each incident or accident, damage or degradation caused to the environment, workers or residents or their assets, in the course of the works.
- The Contractor shall provide all relevant information about the Generic EMP and the Site-EMP to subcontractor/s and be responsible for their actions.
- The Contractor shall provide the school administration and the PMU with a written notice of any unanticipated environmental, health and safety risks or impacts that arise during implementation of the contract that were not considered in the Generic EMP.

B. Environmental Site Inspection and Monitoring Checklist

Note: This form is designed for use by the project management unit (PMU) local project coordinator during site inspections and monitoring and may not be exhaustive. Modifications and additions may be necessary to suit individual projects and to address specific environmental issues and mitigation measures.

Name of school: _____
Location: _____
Inspection Date: _____
Inspection Time: _____
Inspector(s): _____

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
1. Has contractor appointed a construction supervisor and is the supervisor on-site?				
2. Is information pertaining to construction disclosed at construction site (including construction period, contractor information, grievance hotline, etc)?				
3. Are chemicals/hazardous products and waste stored on impermeable surfaces in secure, covered areas?				
4. Is there evidence of oil spillage?				
5. Are chemicals stored and labeled properly?				
6. Is construction equipment well maintained (any black smoke observed)?				
7. Is there evidence of excessive dust generation?				
8. Are there enclosures around the main dust-generating activities?				
9. Does contractor regularly consult with school management as well as nearby residents to identify concerns?				
10. Is there evidence of excessive noise?				
11. Any noise mitigation measures adopted (e.g. use noise barrier / enclosure)?				
12. Is construction wastewater and domestic wastewater discharged to sewer systems (if possible), or are on-site treatment facilities (septic tank) provided?				
13. Is there any wastewater discharged to soil or surface water?				
14.. Is the site kept clean and tidy				

(e.g. litter free, good housekeeping)?				
15. Are separated labeled containers/areas provided for facilitating recycling and waste segregation?				
16. Are construction wastes/recyclable wastes and general refuse removed off site regularly?				
17. Is safe supply of clean water and an adequate number of latrines provided for workers?				
18. . Is personal protection equipment provided for workers?				
19. Are clear information and warning signs placed at construction sites in view of the students and staff as well as the public?				
20. Are all construction sites made secure, discouraging access through appropriate fencing?				
21. Are disturbed areas properly re-vegetate after completion of works?				
22. Were any complaints filed with the contractor, and have staff and nearby residents raised any concerns related to the performance of contractor?				
23. Any other problems identified or observations made?				

_____

Date, Name and Signature of PMU staff/ consultant

VII. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

44. Key concerns and issues identified during the IEE school site visit consultations (September 2016) are summarized in the table below, for potential reference in further validation at the selected and approved school sites, and with mitigation measures included in the EMP.

Feedback from IEE consultations conducted at 13 potential EYE SES school sites in September 2016 relating to health and safety, and environmental potential impact of planned EYE project construction, drew the following conclusions in relation to risks and mitigation measures to be adopted under EYE:
School environment including water supply, flood risk and water quality (i) Water sources for SES schools in rural areas include artesian well and rain-fed pond water, with variable drinking water quality ranging from good to poor. Several schools reported high levels of lime (salt) in the school drinking water supply (underground ground water supply). (ii) Water tanks are used to store rain water and water manually pumped from nearby pond, lake, etc. Stainless steel water tanks are used for drinking water storage in some schools. (iii) Some students in flood risk zones have to cross rivers or flash flood areas to reach school. Schools in flood risk areas have to close when water rises beyond safe levels. (iv) Condition of approach roads to rural SES schools is generally poor, especially in the rainy season between June and September. School entrance road is too narrow / not passable for construction vehicles in some cases. (v) Rural school sites generally have sufficient space for additional school construction. (vi) Mosquito risk is not a problem as schools are generally well ventilated.
Earthquake Risk (i) School buildings in earthquake risk areas may suffer some damage.
Distance to school (i) Furthest distance to school for LSE students: 3 to 4 miles; furthest distance to school for USE students: 5 miles. For some students it takes 2.5-3 hrs to reach school. (ii) In rural areas some students travel to school by boat on local waterways; others come by walking or bicycle.
Potential Impacts of school construction on local community (i) No negative impacts of SES school construction were identified during community and school level consultations. (ii) Community and school members indicated that they would support SES construction as much as possible as in all school sites visited there is a clear need for improvement and extension of classroom and dormitory facilities. (iii) Construction workers usually stay on the school compound or in nearby monastery. (iv) Drinking water (rain water) and food supply for construction workers is generally available on or near the school campus. (v) The local village / community administration office deals with grievances but generally there are no problems. (vi) School construction is generally undertaken during the school holidays, which falls in the dry season, during April-May. (vii) Children's access to the school construction site would be prohibited for their safety. (viii) Noise and behavior of workers must be considered if school construction sites are located near temples, monasteries, health facilities, and in the vicinity of a village.
Access to / facilities at school construction sites

(i) Some schools have limited vehicle access to potential SES school construction site. (ii) Sufficient land is available at sites visited for IEE consultation.

45. The EA will disclose the IEE report to the public through their website to provide public an opportunity to review the project design and be engaged in further consultation if necessary. Similarly, ADB will disclose the final IEE on its Website for public dissemination. The EA shall submit semi-annual environmental safeguards monitoring reports to ADB, including information regarding grievance redress associated with the project (Section VIII). These reports shall be disclosed on the ADB website.

VIII. GRIEVANCE REDRESS MECHANISM

46. Immediately upon loan effectiveness, the PMU will establish a Grievance Redress Mechanism (GRM) acceptable to ADB. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the project.

47. The first tier of GRM shall be established at the contractor/ site level. The Contractor shall establish a telephone hotline to receive community complaints, staffed at all times during working hours. The contractor shall assign a qualified person to coordinate the site-EMP implementation and the complaint hotline. Contact details shall be prominently displayed at the sites. The Contractor shall disseminate in timely manner information on the construction progress, including anticipated activities that might cause safety risk. The complaints received shall be resolved with the support of the school authorities and contractors' representative within 15 days of the receipt of the complaint. The contractor shall maintain a log of the complaints received specifying the key details of the complaint as well as resolution details. These should be forwarded to the PMU office on a quarterly basis.

48. If the complaint is not resolved at the contractor/ site level the complaint will be escalated to the PMU level. A Grievance Redress Committee (GRC) shall be formed at this level comprising of PMU manager, DBE engineer, TEO representative and head teacher, as needed. A hearing will be called with the GRC, if necessary, where the affected person can present his/her concern/issues. The process will facilitate resolution through mediation. The local GRC will meet as necessary when there are grievances to be addressed. The local GRC will suggest corrective measures at the field level and assign clear responsibilities for implementing its decision within fifteen (15) working days. The contractor will have observer status on the committee. If unsatisfied with the decision, the existence of the GRC shall not impede the complainant's access to the Government's judicial or administrative remedies.

49. The functions of the local GRC with regards to environmental concerns are as follows: (i) resolve problems and provide support to affected persons arising from various health and safety and environmental issues including hampering of utilities, power and water supply, waste disposal, traffic interference and public safety; (ii) reconfirm grievances of affected persons, categorize and prioritize them and aim to provide solutions within a month; and (iii) report to the aggrieved parties about developments regarding their grievances and decisions of the GRC.

50. In the event that a grievance cannot be resolved directly by the GRC the affected person can seek alternative redress through an appropriate court. The monitoring reports shall include the following aspects pertaining to progress on grievances: (i) Number of cases registered with the GRC, level of jurisdiction, number of hearings held, decisions made, and the status of

pending cases; and (ii) lists of cases in process and already decided upon may be prepared with details such as Name, ID with unique serial number, date of notice, date of application, date of hearing, decisions, remarks, actions taken to resolve issues and status of grievance.

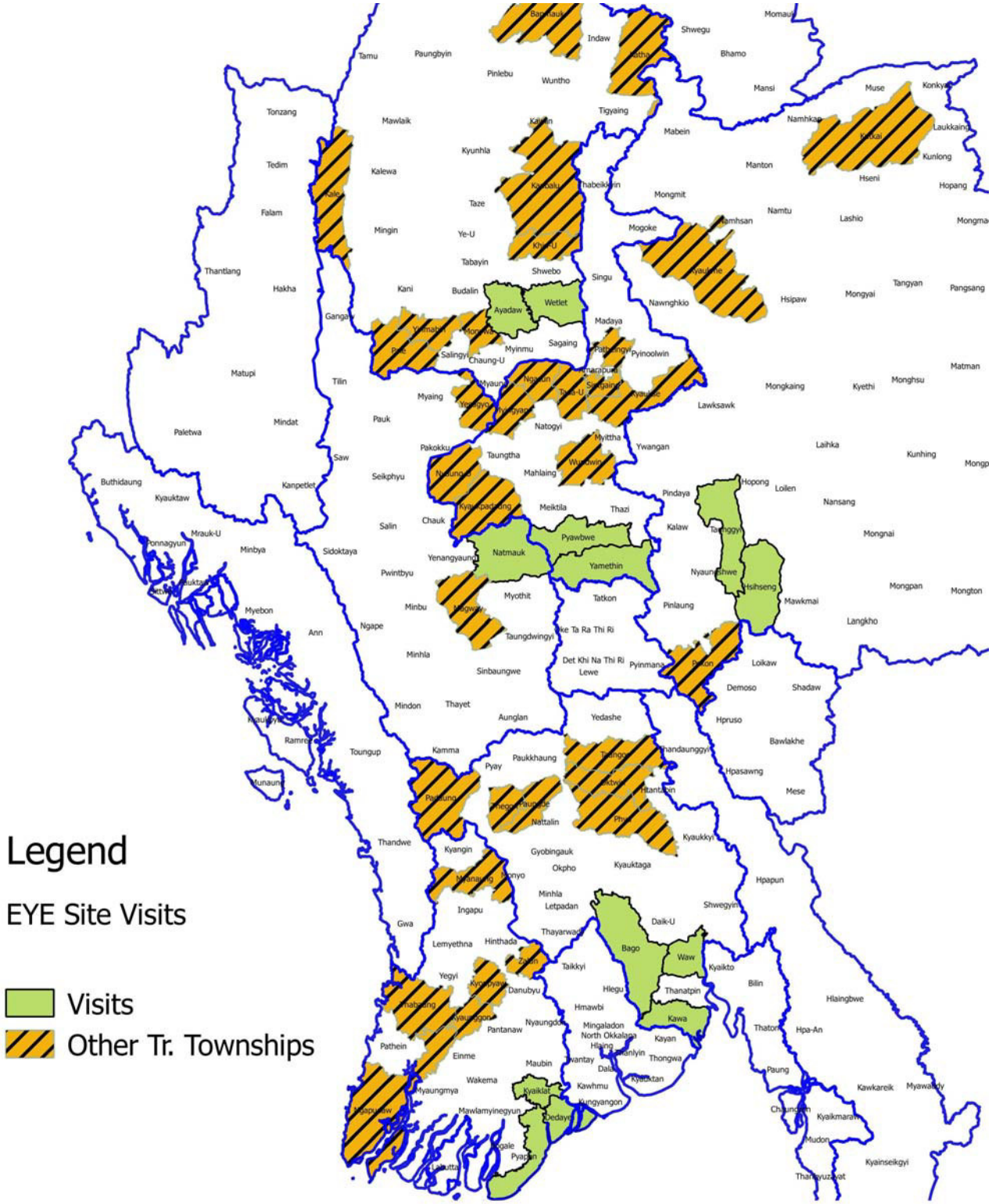
IX. CONCLUSIONS AND RECOMMENDATIONS

51. This IEE study reveals that the impacts from construction and development of the project activity areas under Output 2 are predictable and manageable; impacts can be avoided, or minimized. None of the project sites are located in environmentally sensitive areas and land acquisition or physical and/or economic displacement is not anticipated to be required for the implementation of the project. Based on the findings of the IEE, the classification of the subproject as Category B is confirmed, and no further special study or detailed Environmental Impact Assessment (EIA) needs to be undertaken to comply with ADB SPS (2009).

52. The Environmental Management Plan (EMP) covers all aspects of construction and development. All relevant issues raised during the public consultations were incorporated in the IEE and EMP. The outline designs for the classroom blocks will need to be updated during the detailed design stage in accordance with the stipulations of the building codes applicable to educational centers, to include any changes in scope of works, and accordingly the environmental impacts and mitigation measures will need to be updated. Environmental conditions shall be incorporated into the standard bidding documents and EMP shall be attached to the bidding documents. In case there are any significant changes the current EMP may need to be revised again during the construction to reflect any impacts that were not anticipated during the pre-construction stage. The contractors will be required to implement, update and monitor the EMP during the project construction period. Institutionalization of environmental compliance monitoring and capacity building of project and related staffs will be carried out during project implementation.

53. The project will have positive impacts by increasing accessibility of youth, including girls and students from under-represented geographical and ethnic areas of Myanmar, to secondary school education. The expansion of selected secondary schools, initially planned for 48 townships, through construction of classroom blocks and dormitories with sex-separated toilet blocks, will provide opportunities for youth to complete basic education and consequently to better equip them for employment.

Appendix 1. Map of Myanmar showing the target townships for SES upgrade under the EYE project.



Appendix 2. Selected images from IEE school site visits for consultations, Sept 2016

Ground (drinking) water well, BEPPS, Hsi Hsaing

Drinking water storage, BHS, Ayarwady

Rain water facilities, BEPPS, Ayarwady

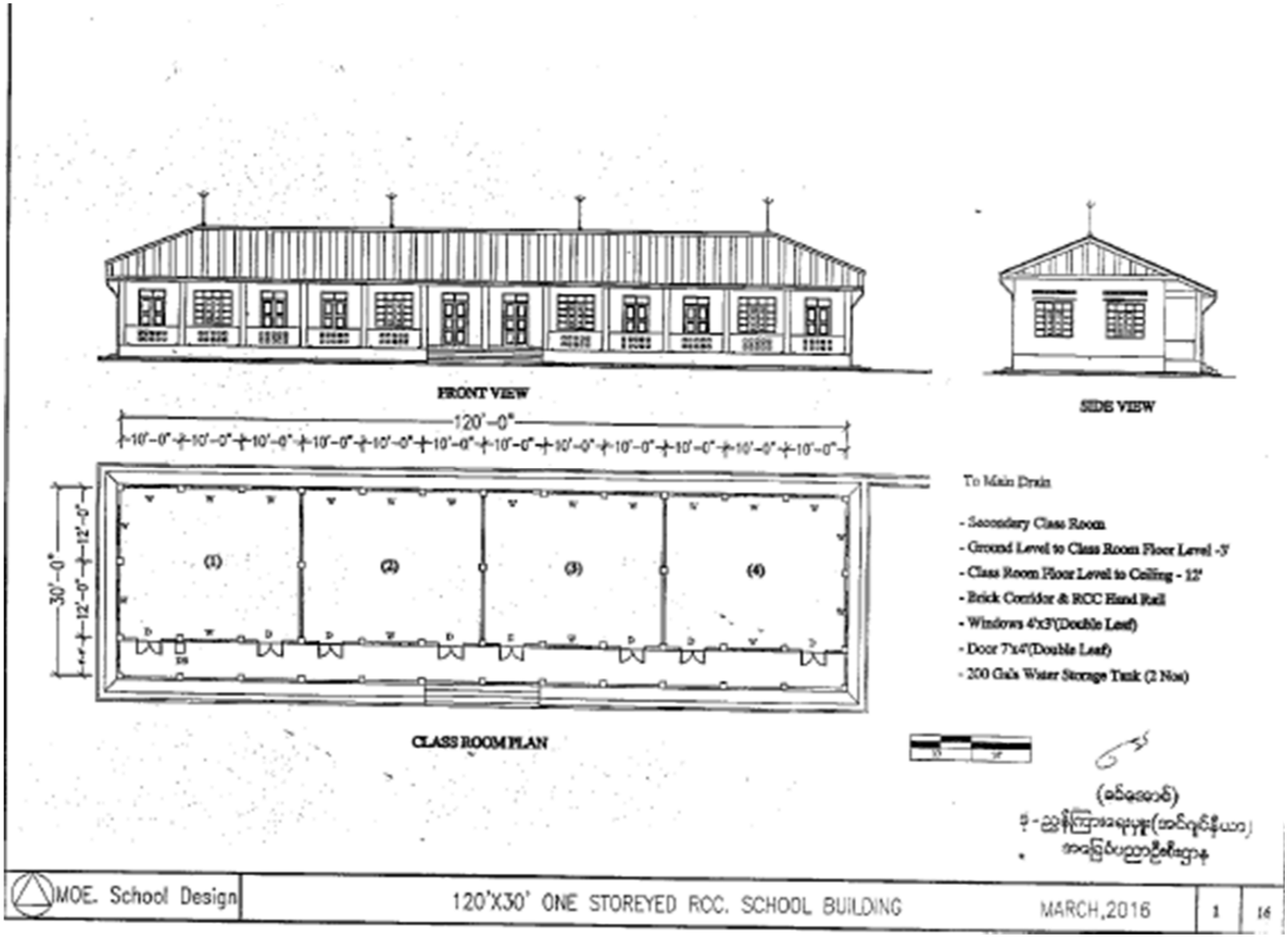
Old toilet unit, BHS, Shan State

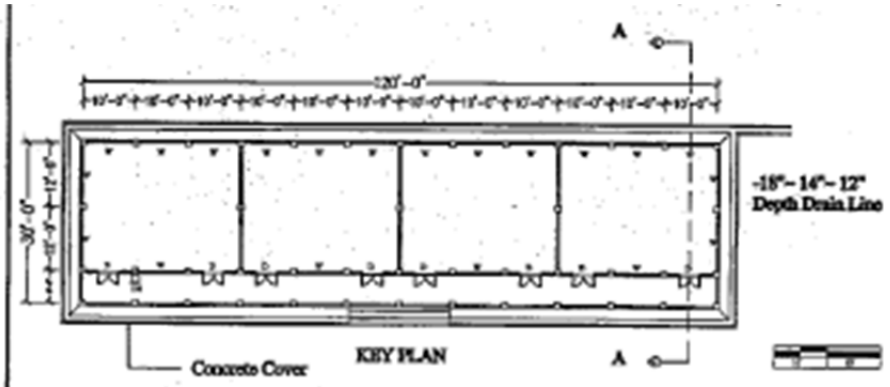
Good standard toilets, BEPPS, Shan State

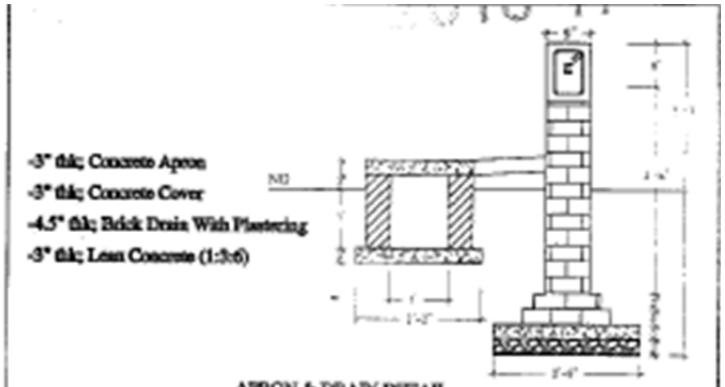
Toilet and washing facilities, BEPPS, Ayarwady

Classroom blocks constructed above flood water level, BHS, Ayarwady

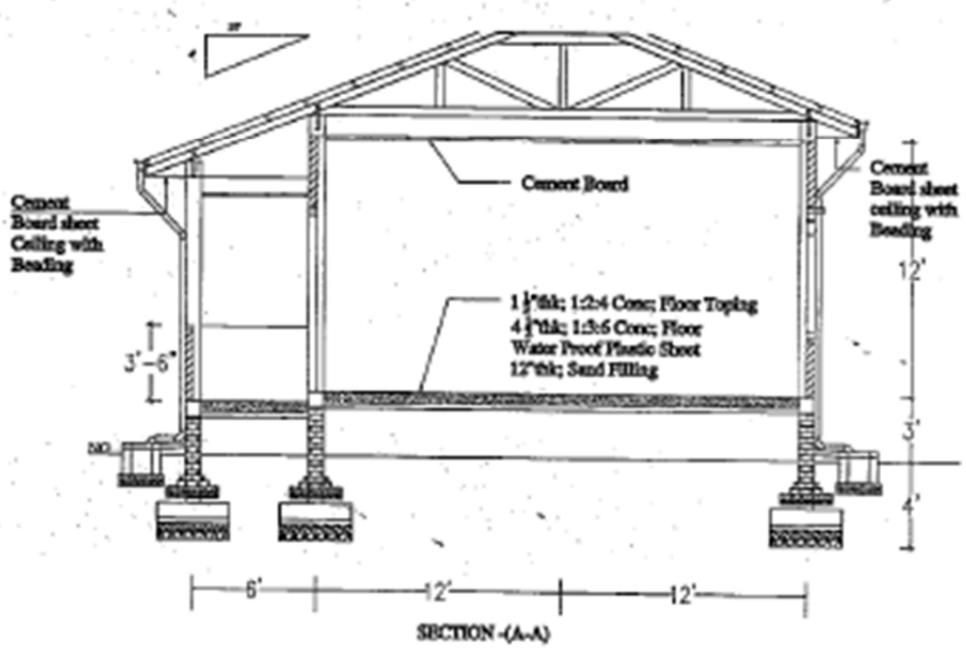
Appendix 3. Standard school plans for a secondary school 4 classroom block







APRON & DRAIN DETAIL

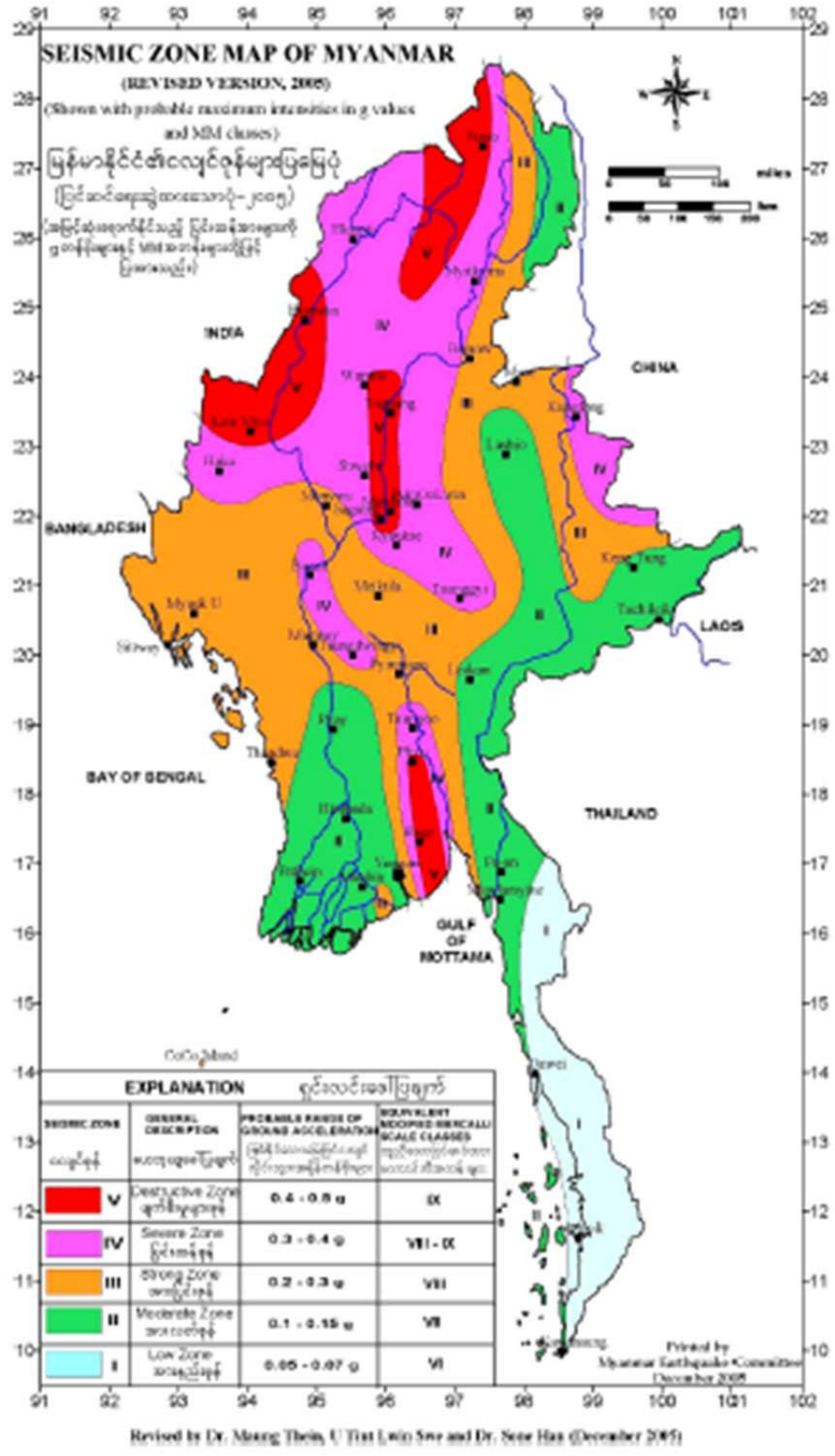


SECTION -(A-A)

- 0.4mm thk; Colour Plain Sheet Ridge
- 0.4mm thk; 4 angle Colour Sheet Roofing (Green)
- 3"x2" Lip Channel Purlin (GI)
- 4"x2" U Rafter (MS) @ 10' c/c
- 5"X2" U-MS Tie Beam
- 2"x2" Strut (L-MS)
- 8"x1" Eave Board (Pyinkado) or Cement Board with 1"x1" Hollow Frame
- 9"x9" RB-1
- 9"x12" RB-2
- 2'x2' Cement Board Ceiling with Beading for Corridor and Soffit
- 2"x2" & 2"x1" Ceiling Joist (C-Channel) or T.Bar Frame
- 4.5" Brick Walling With Plastering , Putty , Painting
- 1 ½" thk (1:2:4)Concrete Floor (Topping)
- 4 ½" thk (1:3:6) Concrete Floor
- 9"x12" FB
- 12"x14" Drain & 2' Apron
- 9" thk Retaining Wall
- 3" thk (1:3:6) Lean Concrete (4'x4') Footing (See Detail)
- 9" thk Hard Core (Stone)

(စင်ထရောင်)

Appendix 4. Seismic Map of Myanmar



Source: Seismic Zone Map of Myanmar.
https://www.researchgate.net/publication/263873098_EARTHQUAKE_AND_TSUNAMI_HAZARD_IN_MYANMAR