NEPAL
MINISTRY OF EDUCATION
CL-PIU (Central Level Project Implementation Unit)

TRANSITIONAL PROJECT IMPLEMENTATION SUPPORT FOR EMERGENCY RECONSTRUCTION PROJECTS

SCHOOL RECONSTRUCTION

FINAL REPORT

MAY 2017

JAPAN INTERNATIONAL COOPERATION AGENCY

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
MOHRI, ARCHITECT & ASSOCIATES, INC.
INTERNATIONAL DEVELOPMENT CENTER OF JAPAN INC.

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Perspective Drawings of Himalaya HSS, Gorkha

	
School site visit in Nuwakot District (Building damage assessment) October27, 2016	Monthly progress meeting at Lalitpur District December2, 2016
	
School site visit in Dhading District (Building damage assessment) December 14, 2016	School site visit in Gorkha District with Embassy of Japan and JICA December 16, 2016
	
School site inspection in Gorkha District December 19, 2016	Monthly progress meeting at Makwampur District January 25, 2017

Activities Photos（School Construction）

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Abbreviation

	English	日本語
ADB	Asian Development Bank	アジア開発銀行
CL-PIU	Central Level Project Implementation Unit	中央プロジェクト実施ユニット
DDC	District Development Committee	郡開発委員会
DDF	District Development Fund	郡開発資金
DDRC	District Disaster Relief Committee	郡災害復旧委員会
DEO	District Education Office	郡教育事務所
DL-PIU	District Level Project Implementation Unit	地方プロジェクト実施ユニット
DOE	Department of Education	教育局
DSC	Design and Supervision Consultant	設計監理コンサルタント
DUDBC	Department of Urban Development and Building Construction	都市開発建設局
EARF	Environmental Assessment and Review Framework	環境アセスメントレビューフレームワーク
EIA	Environmental Impact Assessment	環境影響評価
EMF	Environmental Management Framework	環境管理フレームワーク
ESMF	Environmental and Social Management Framework	環境社会管理フレームワーク
ESMS	Environmental and Social Management System	環境社会管理システム
IEE	Initial Environmental Examination	初期環境調査
JICA	Japan International Cooperation Agency	独立行政法人国際協力機構
MOE	Ministry of Education	教育省
MOSTE	Ministry of Science, Technology and Environment	科学技術環境省
NGO	Non-governmental Organization	非政府組織
NRA	National Reconstruction Authority	復興庁
PDRF	Post Disaster Recovery Framework	震災復興フレームワーク
RRNE	Project on Rehabilitation and Recovery from Nepal Earthquake	ネパール地震復旧・復興プロジェクト
SIDA	Structural Integrity and Damage Assessment	構造堅牢性と被害の評価
SISM2	The Project for Support for Improvement of School Management Phase II	小学校運営改善支援プロジェクトフェーズ 2
SSRP	School Sector Reform Program	学校セクタープログラム
SMC	School Management Committee	学校運営委員会
SWMTSC	Solid Waste Management Technical Support Centre	廃棄物管理技術支援センター
TPIS-ERP	Transitional Project Implementation Support for Emergency Reconstruction Projects	緊急復興支援事業実施支援

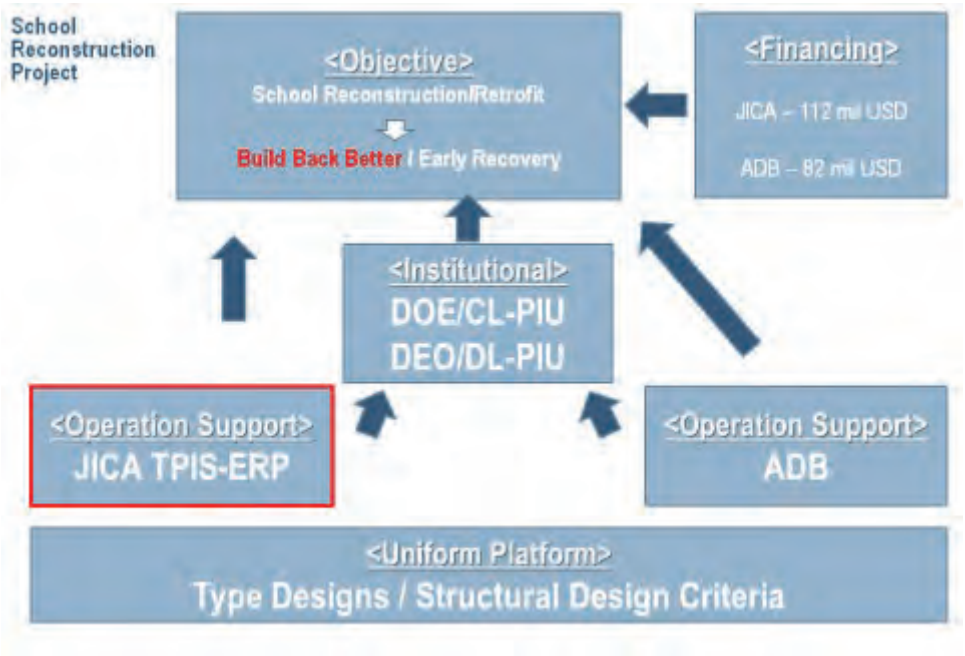
UNDP	United Nations Development Programme	国連開発計画
UNICEF	United Nations Children's Fund	国連児童基金
VDC	Village Development Committee	村落開発委員会
WB	World Bank	世界銀行

Executive Summary

Outline of the School Reconstruction Project

Implementation Organization of the School Reconstruction Project

The school reconstruction project is co-funded by JICA and ADB. Implementing agencies of the school reconstruction project are: Central Level Project Implementation Unit (CL-PIU) and District Level Project Implementation Unit (DL-PIU). The former is set up in DOE[1] and the latter in 14 respective DEOs. Those implementing agencies are supported by TPIS-ERP. The following figure shows the implementation organization.



Implementation Organization of the School Reconstruction Project
(until a loan consultant is selected)

Roles and responsibilities of TPIS-ERP

This project is a transitional project to support the above-mentioned Nepalese implementation agencies and lasts until a loan consultant is selected. Roles and responsibilities of TPIS-ERP are as follows.

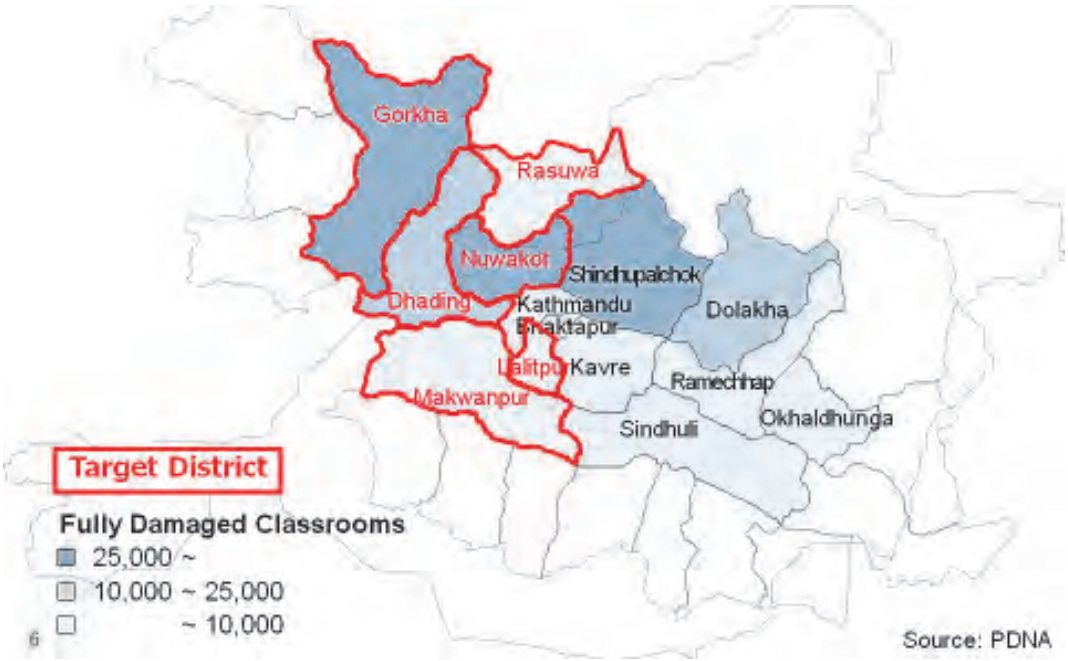
[1] In June 2016 the organization was reorganized into Ministry of Education (MOE).

- To support DOE/CL-PIU in selecting target schools (for all batches) ;
- To support putting together a set of tender documents for the 1st construction batch, based upon the Type Design which was developed together with ADB in JICA's Urgent Development Study (RRNE) · Achievement 2 (create and distribute earthquake-resistant building guidelines) and based upon site surveys to be carried out;
- To support CL-PIU/DL-PIU in supervising and monitoring the construction of the 1st batch; and,
- To instruct engineers and sub-engineers of DL-PIU in construction supervision.

As for the 2nd and 3rd construction batches thereafter, the loan consultant will be responsible for putting together a set of tender documents (including carrying out site survey and making site plans) and construction supervision.

Target areas of the School Reconstruction Project

Among 14 districts identified as the target areas, 6 districts namely, Lalitpur, Gorkha, Rasuwa, Makwanpur, Dhading and Nuwakot will be assisted by JICA. The remaining 8 districts, Kathmandu, Bhaktapur, Shindhpalchck, Kavre, Dolakha, Ramechap, Sindhuli and Okhaldhunga will be assisted by ADB.



14 target districts and 6 districts to be covered by JICA's assistance

Contents of the Project

Selecting Schools for the 1st Batch

TPIS-ERP and DOE/CL-PIU established criteria to select Project schools for the 1st construction batch. Initially, both agreed on a selection concept "to prioritize Primary Schools (PS)[2] which had been completely destroyed." However, the concept was slightly modified for the following reasons. The schools were selected based upon the modified criteria.

- It turned out that many PS are inaccessible by vehicles, and thus it was determined to include Lower Secondary Schools (LSS), Secondary Schools (SS) and Higher Secondary Schools (HSS).
- It turned out that the number of "completely destroyed schools" is not large, and thus the concept was modified to "schools which had been destroyed by the earthquake." Based upon the criteria, a long list of candidate schools is submitted by each DEO and a total of 120 schools were selected for site survey.
- Following the site survey for 120 schools carried out by a Nepalese consultant, excluding schools which did not meet the criteria such as a lack of construction space, 70 schools were short-listed.
- CL-PIU strongly requested to add 15 schools in the Project, as the excluded schools secured construction plots. Thereafter, 2 schools were requested to cancel, leaving 83 schools in the 1st construction batch.

Selection of the Project School of the 1st Batch

District	PS (G1-5)	LSS (G1-8)	SS (G1-10)	HSS (G1-12)	Total	No. of Packages
Lalitpur	1	0	1	3	5	1
Gorkha	1	7	8	12	28	6
Makwanpur	4	0	2	1	7	1
Raswa	0	0	0	2	2	1
Nuwakot	5	8	8	2	23	4
Dhading	10	6	1	1	18	4
TOTAL	21	21	20	21	83	17

Source: TPIS-ERP

Selecting Schools for 2nd and 3rd Batches

The Nepali side hopes to prioritize the rebuilding of a large-scale school while expressing contradictory desire to secure more number of schools. Due to limited budget, realizing both desires would be difficult.
Then, MOE/ DOE / JICA meeting was held on April 5, 2016, and it was tentatively agreed to give a priority to SS and HSS for the 2nd and 3rd batches of JICA Project, and PS and LSS should be covered by the

[2] PS: Primary School(G1-5), LSS: Lower Secondary School (G1-8)
SS: Secondary School (G1-10), HSS: Higher Secondary School (G1-12). The classification is at the time of selection. After a revision of the Education Act in June 2016, G1-8 is classified as Basic and G9-12 is as secondary.

Government project or INGO / NGO etc. Furthermore, in the Post Disaster Recovery Framework (PDRF)[3], it was decided to rebuild a complete school that applied to JICA model for the SS and HSS, which are the model schools in each district.

In addition, CL - PIU decided from the results of the 1st batch to target the construction of 200 schools within the Japanese loan budget. That is, the number of target schools of 2nd and 3rd batch is 200 - 83 = 117 schools. Nepali side said that they didn't want to separate the 2nd and 3rd batch, and aimed to start bidding in 2017 (Nepali fiscal year) and to start construction in January, 2018.

As for the selection of schools of 2nd and 3rd batches, the TPIS-ERP utilizes the results of the Structural Integrity and Damage Assessment (SIDA) by the World Bank and selects the long list of the target schools based on the above mentioned selection criteria. First of all, CL - PIU requested each DEO to submit a long list (160 schools, 1.35 times the target 117 schools, considering sites excluded due to lack of land etc.) and submitted to TPIS - ERP (The long list was submitted by CL - PIU in early November, 2016). TPIS-ERP checked the long list against the SIDA result, and replaced the priority. After that, in consultation with CL - PIU including priority, presented it to DEO via CL - PIU and finally agreed on a long list.

And up to this long list agreement was the scope of TPIS-ERP. Since then, the site survey and making the short list (117 schools) from 160 long list schools will be carried out by the loan project (ESRP). Because it is impossible to judge the possibility of construction without checking the site condition through survey. After mobilization of Loan Consultant, the longlist schools received from CL-PIU was reduced to 143 schools from 154 schools.

Type Design (standard design by building block) and its Combination

In accordance with (1) Type Design Guidelines (including type design check list) and (2) Structural Design Criteria jointly created by ADB and JICA "Emergency Recovery and Reconstruction Project", a total of 37 type designs were formulated. The type design was finalized with the check of DUDBC and DOE.

Each site constitutes a "complete school" by combining multiple type designs on the school property. Complete school is a school that has the necessary components of each level school defined in the "Design Guideline" jointly created by DOE, JICA and ADB.

Furniture Design and Tendering

Regarding school furniture, the tender documents of Lalitpur District package of the first batch were submitted to CL-PIU in November 2016, and the scope of TPIS-ERP was finished then. Therefore, in ESRP, the bidding task of Lalitpur District, the preparation of tender documents of remaining 6 packages in 5

[3] With technical and financial support from including UNDP and the World Bank, the National Reconstruction Authority (NRA) published the Post-Disaster Recovery Framework (PDRF) 2016-2020 to provide a systematic, structured and prioritized framework for implementing recovery and reconstruction of Nepal, struck by the devastating earthquake of April 2015.

Districts of the first batch will be carried out in order. The current furniture bidding package plan is as follows.

Furniture Bidding Package Plan

Lalitpur	1 package
Makwanpur	1 package
Nuwakot	2 packages
Dhading	1 package
Raswa	
Gorkha	2 packages

Kick-off Meeting

Prior to the tender announcement, a kick-off meeting are held by and with the principal and the school management committee (SMC) chairperson at the DEO of each district (For Lalitpur District, as an exception, kick-off meeting was held on March 31st between the tender announcement and the tender opening). The objective is for DL-PIU to explain the project outline, to explain and conclude the MOU between DEO and SMC, and for TPIS -ERP to explain each school's site layout plan.

MOU

In the MOU concluded between DEO and SMC, assistance for contractors and DEOs undertaken by SMC during construction is described. Based on the background that SMC traditionally involved in the construction of schools in Nepal, the CL - PIU judged that participation of SMC in this project is essential, and following to MOU made by ADB, CL-PIU prepared MOU to conclude between DEO and SMC. MOU was concluded in all six districts by June 29, 2016. CL-PIU started tendering after the conclusion of MOU. However, in this project, SMC is not allowed to interfere with technical decisions, and these will be delegated to engineers.

Training for Construction Supervision

JICA, ADB, CL - PIU and the Australian Embassy held a joint workshop for DL - PIU engineers and sub - engineers from July 12 to 14. In the workshop JICA, ADB, CL - PIU and the Australian Embassy conducted construction supervision training for DL - PIU engineers and sub - engineers assigned in 14 districts. The purpose of the joint workshop is to enable DEO engineers (DL - PIU engineers) and newly employed sub engineers to understand the architectural, structure, mechanical and electrical design of JICA and ADB Projects and to comprehend the know-how of the construction supervision such as quality control, safety control and work schedule management, document management and so on, through utilizing the Supervision Manual provided in the workshop.

Maintenance Manual

For appropriate school facilities maintenance after the completion of construction, TPIS-ERP has made a draft "Maintenance Manual (English version)" and submitted to JICA on February 8, 2017.

Outline of the Implementation Schedule and the Current Status

Initial Plan and Current Status

The entire project is to be divided into 3 construction batches and aimed to be completed by the end of 2020, because constructing more than a few hundred schools simultaneously is beyond the capacity of the Nepalese implementation agencies and Nepalese construction companies.

Initially, the detailed design for the 1st batch was scheduled to be completed by December 2015 to start the construction in February 2016. Nevertheless, the schedule has been delayed because the necessary approvals were not made in a timely manner due to understaffing of CL-PIU, the delay in DL-PIU structuring and staff hiring, design changes to reduce the cost, additional site surveys, and so on.

For the 1st construction batch, 84 schools (one school was cancelled, leaving 83 schools in total) were selected to be divided into 17 packages, considering the capacity of local contractors. Among them, the construction of schools in Lalitpur (5 schools per package) was commenced on June 1st and the construction is being implemented. Tenders for the remaining 5 districts (16 packages) and contract- signing followed to start the construction in September onward.

Schools in the 2nd and 3rd construction batches are now in the selection process.

Initial Plan and Current Status

	Initial Plan (cited from MD)	Current Status (As of February 2017)
No. of target schools		
1st Batch	80 (4 packages)	83 (17 packages)
2nd Batch	360 (4 packages)	117 (to be divided into 24 packages – preliminary) ※SS, HSS only
3rd Batch	360 (4packages)	
Total	800	200 (estimated by CLPIU)
Construction schedule		
1st Batch	2016.3~2017.2	2016.6~2018.2
2nd Batch	2017.3~2019.2	2018.1~2019.2
3rd Batch	2017.9~2019.8	2018.1~2019.8

1st Batch Tender and Construction Status

After Lalitpur package was started on June 1st 2016, it took time due to problems such as delay of tender documents evaluation and approval, delay of tender evaluation, re-bidding, understaffing of construction supervision staff in DL-PIUs. However, from September the remaining packages have started construction

one after another. Excluding the re-tender of 2 packages in Dhading in November 2016, 15 packages have started construction in January 2017. With regards to Lalitpur, though the rainy season began just after the commencement and construction was not possible except for 2 sites, the construction has resumed in October 2016 when the rainy season finished. The following table summarizes the construction progress of all 17 packages as of February 2017.

1st Batch Tender Status (2016/2017)

District	Package No.	Kick-off meeting	Tender announcement	Tender opening	Contract signing	Contract amount NRP	Commencement of construction
Lalitpur	1	3/31	3/15	4/16	5/26	231,049,958	6/1
Gorkha	1	4/21	5/25	6/24	9/18	116,718,812	9/24
	2		5/25(1st) 9/16(2nd)	6/24(1st) 10/18(2nd)	12/29	180,291,951	1/4
	3		5/27	6/27	9/29	204,403,324	10/5
	4				9/25	266,804,753	10/1
	5		6/12	7/12	9/22	273,295,100	9/28
	6				9/30	270,691,732	10/6
Makwanpur	1	5/13	7/5	8/4	10/17	182,014,292	10/23
Rasuwa	1	6/5	8/16	9/15	12/1	66,383,116	12/7
Dhading	1	6/29	8/29	9/28	12/8	107,800,830	12/14
	2					139,002,611	12/14
	3		9/4(1st) 11/23(2nd)	10/4(1st) 12/23(2nd)	NY	107,463,949	NY
	4					99,417,581	NY
Nuwakot	1	6/6	10/3	11/4	1/16	224,817,895	NY
	2				1/25	207,574,434	NY
	3		10/7	11/8	12/29	189,704,094	1/4
	4				2/1	235,971,509	NY

Source: TPIS-ERP The items in grey are not yet implemented by the beginning as of February, 2017

Handling over to Yen Loan Project (ESRP)

The schedule along with the start of contract on February 8, 2017 is shown below

Schedule for ESRP (draft)

1.	Construction Supervision of 1st Batch	Early March 2017 – End of March 2018
2.	Site Survey of 2nd Batch	Late February – end of March 2017
3.	Tender and Contract of 2nd Batch	Early April – Mid July 2017
4.	Construction Supervision of 2nd Batch	Mid July 2017 – End of October 2018
5.	Site Survey of 3rd Batch	Early May – Mid June 2017
6.	Tender and Contract of 3rd Batch	Mid July – end of September 2017
7.	Construction Supervision of 3rd Batch	Early October 2017 – End of January 2019

Source: ESRP Consultant

Environmental Safeguard

Baseline environmental and social information of following six districts, namely (1) Gorkha, (2) Lalitpur, (3) Rasuwa, (4) Nuwakot, (5) Dhading and (6) Makawanpur are collected. Also relevant environmental legal framework that shall be well-addressed within the proposed reconstruction project. Based on those collected information, mentioned above, ESMS Checklist is developed in order to make the proposed school-sector reconstruction project environmentally and socially sound one. The development of this ESMS checklist was initiated in August 2015 and completed in June 2016 through a series of discussion among JICA Tokyo Headquarter, JICA Nepal Office and DoE. Relevant ESMS implementation - related capacity development (CD) programs, to be described later, are developed based on this ESMS checklist as well as engineering results of the proposed school-sector reconstruction project.

It is important to make this JICA-funded school reconstruction project environmentally safe and sound. This school-sector reconstruction project covers roughly about 200 school reconstruction projects of six districts such as Gorkha, Dhading, Nuwakot, Rasuwa, Makawanpur and Lalitpur Districts, and about 83 school reconstruction projects are to be implemented within the 1st batch of entire school reconstruction project. The implementation of JICA-ESMS and its relevant examinations are to be conducted at SMC-level (i.e., one ESMS monitoring activity per one school). Within this school-sector reconstruction project, two ESMS staffs are to be assigned (4 months/year for one staff and 1 month/year for another staff, in total 5 months/year) within the JICA loan project.

Upon considering the accessibility (e.g., current road conditions and network) from Kathmandu to each reconstruction site of six districts, mentioned above, ESMS reporting schedule (4 times per year) and assignment schedule of two ESMS staff to be assigned for the JICA loan project, it would be quite difficult to conduct meaningful ESMS-related monitoring works at all reconstruction sites and reporting to both JICA Tokyo and JICA Nepal Office by JICA ESMS staff within 5 months every year.

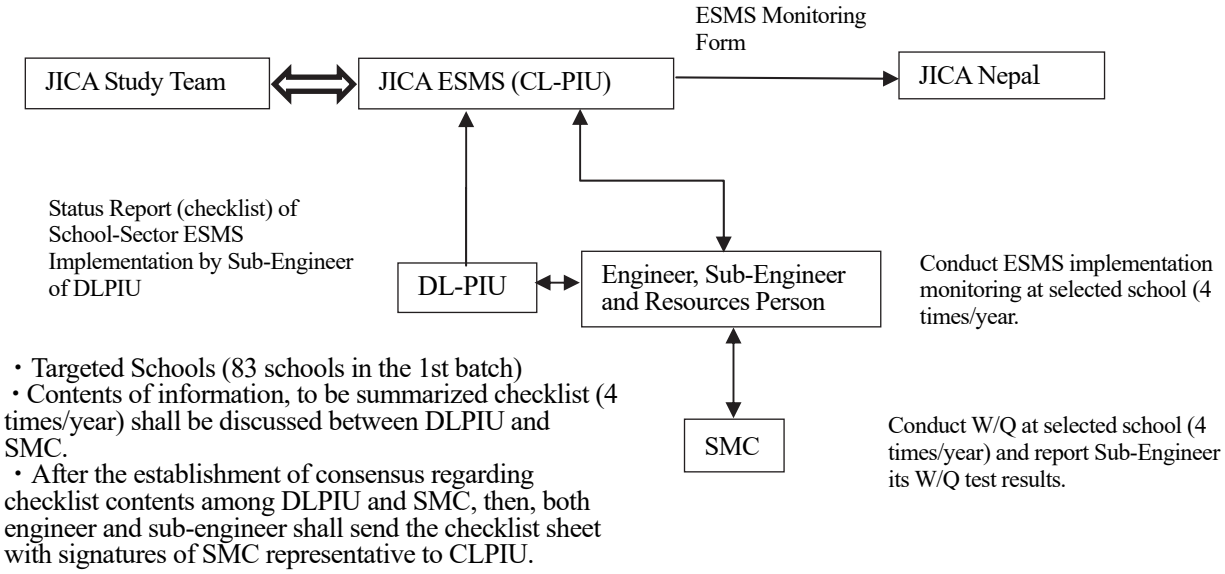
For example, theoretically speaking, assigned two ESMS staff shall conduct entire ESMS activities covering from the periodical site monitoring, preparation of ESMS survey sheet and relevant discussion with SMC, submission of approved ESMS monitoring survey sheet to CLPIU, compiling those ESMS reports into quarterly ESMS report after its report review and check, and then, submission to JICA Nepal within 1 month four times per year. To make this school-sector ESMS monitoring more workable and meaningful, on-site ESMS monitoring tasks are to be conducted by Engineer and Sub-Engineers of each DLPIU.

As mentioned earlier, to increase the transparency and guarantee the accountability of this ESMS implementation, DLPIU is to have explanation meetings to relevant SMC member to explain contents of draft ESMS monitoring sheet at each time. After SMC members approve those contents of the draft ESMS monitoring sheet, then, DLPIU can submit final ESMS monitoring sheet to CLPIU. After CLPIU examines those ESMS monitoring sheets, to be submitted by DLPIU, then periodical reporting of ESMS-related monitoring progress to JICA Nepal from CL-PIU are to be conducted. It is noted that the ESMS-related monitoring survey sheet is prepared by the JICA Study Team, based on JICA Guidelines, Environmental

Management Framework For School Sector Reform Program (SSRP) Nepal, EPA96, EPR97 and others. This reporting is planned to be conducted quarterly (4 times per year during implementation of the entire reconstruction project). Figure below shows the entire framework of school-sector ESMS implementation. ESMS-related water quality test at nearby tributaries and/or water bodies such as springs, located at both upstream and downstream sides from the reconstruction site, are to be conducted, using water analysis kits by DLPIU and DSC.

Currently, no environmental staff exists at all Districts, SMCs and/or VDCs. So, a capacity development (CD) regarding the JICA-ESMS-based environmental clearance for selected school-sector reconstruction projects is conducted between September 2016 and December 2016 at following six districts, i.e., Lalitpur, Gorkha, Makawanpur, Rasuwa, Dhading and Nuwakot. Most of participants are DoE, CL-PIU, Resources Person, Engineer, Sub-Engineer of DLPIU, Other DLPIU staff, Representatives of SMC, School Principal and others, related with the 1st batch of the school-sector reconstruction activities of targeted six districts.

Also, follow-up (FU) program is implemented within this CD development program between Dec/2016 and Feb/2017 in order to make members of both DLPIU and SMC have smooth and good starts of relevant ESMS activities. During this FU program, it is found that all DLPIU had difficulties to start relevant ESMS monitoring activities at school reconstruction sites. On-site guidance and instructions for the smooth preparation of ESMS monitoring survey sheet are provided from JICA Study Team to DLPIU and SMC, and 1st quarterly report that includes ESMS Monitoring Survey Sheet was submitted from CLPIU to JICA Nepal in January 2017.



JICA ESMS Implementation Framework (School Sector)

Source: This Study, 2017

1. Implementation Support for Emergency School Reconstruction Project

1.1 Outline of the School Reconstruction Project

1.1.1 Implementation Organization of the School Reconstruction Project

The school reconstruction project is co-funded by JICA and ADB. Implementing agencies of the school reconstruction project are: Central Level Project Implementation Unit (CL-PIU) and District Level Project Implementation Unit (DL-PIU). The former is set up in DOE[4] and the latter in 14 respective DEOs. Those implementing agencies are supported by TPIS-ERP. The following figure shows the implementation organization.

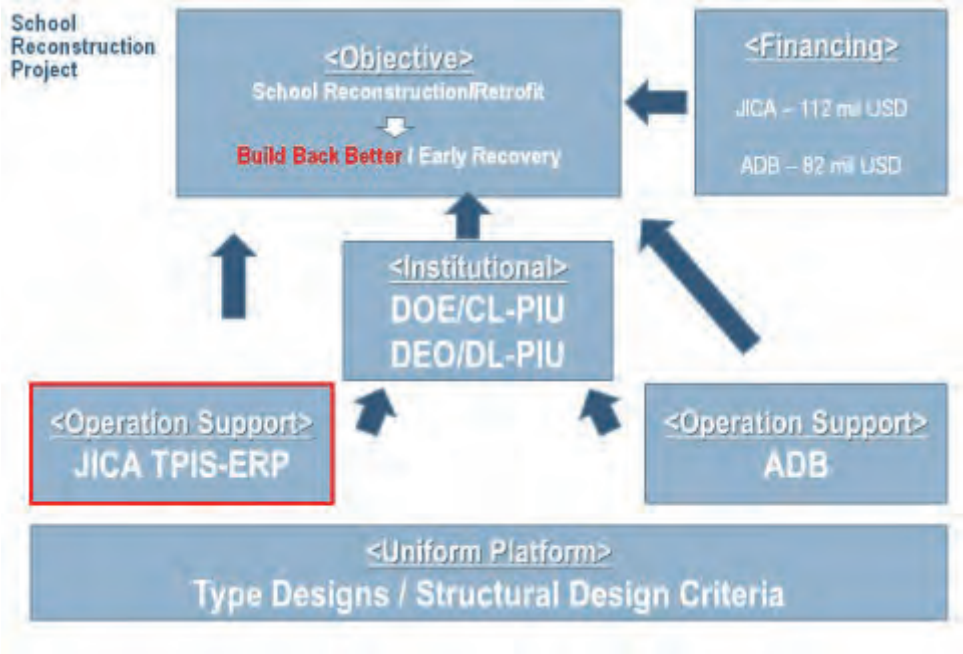


Figure 1-1 Implementation Organization of the School Reconstruction Project (until a loan consultant is selected)

[4] In June 2016 the organization was reorganized into Ministry of Education (MOE).

1.1.2 Roles and responsibilities of TPIS-ERP

This project is a transitional project to support the above-mentioned Nepalese implementation agencies and lasts until a loan consultant is selected. Roles and responsibilities of TPIS-ERP are as follows.

1) To support DOE and CL-PIC in selecting target schools (for all batches)
2) To support putting together a set of tender documents for the 1st construction batch, based upon the Type Design which was developed together with ADB in JICA's Urgent Development Study (RRNE) Achievement 2 (create and distribute earthquake-resistant building guidelines) and based upon site surveys to be carried out;
3) To support CL-PIU/DL-PIU in supervising and monitoring the construction of the 1st batch; and,
4) To instruct engineers and sub-engineers of DL-PIU in construction supervision.

As for the 2nd and 3rd construction batches thereafter, the loan consultant will be responsible for putting together a set of tender documents (including carrying out site survey and making site plans) and construction supervision.

1.1.3 Target areas of the School Reconstruction Project

Among 14 districts identified as the target areas, 6 districts namely, Lalitpur, Gorkha, Rasuwa, Makwanpur, Dhading, and Nuwakot, will be assisted by JICA. The remaining 8 districts, Khathmandu, Bhaktapur, Shindhpalchck, Kavre, Dolakha, Ramechap, Sindhuli, and Okhaldhunga, will be assisted by ADB.

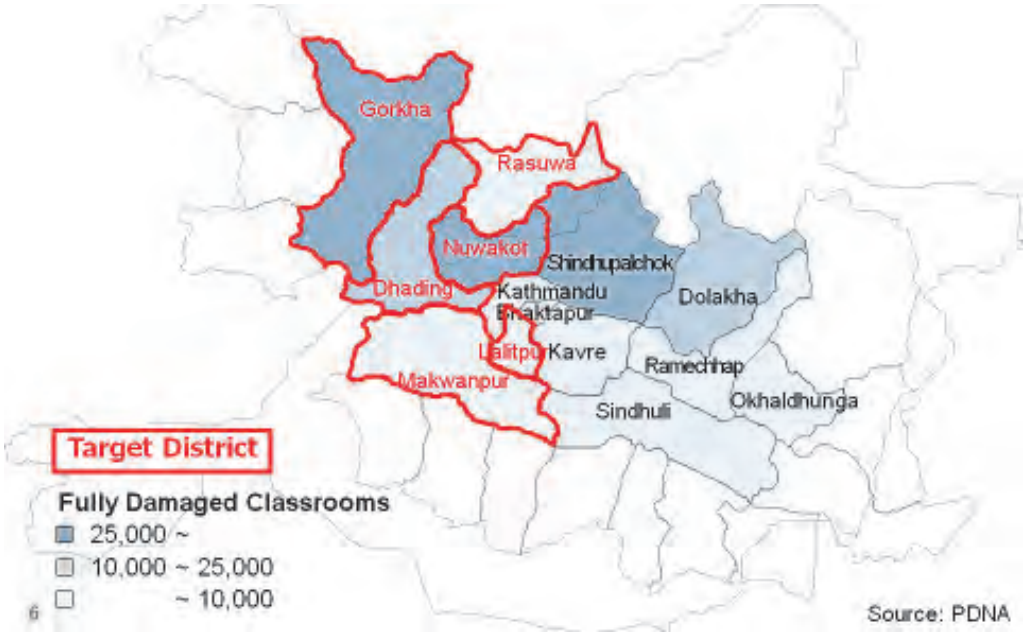


Figure 1-2 14 target districts and 6 districts to be covered by JICA's assistance

1.1.4 Outline of the Implementation Schedule and the Current Status

The entire project is to be divided into 3 construction batches and aimed to be completed by the end of 2020, because constructing more than a few hundred schools simultaneously is beyond the capacity of the Nepalese implementation agencies and Nepalese construction companies.

Initially, the detailed design for the first batch was scheduled to be completed by December 2015 to start the construction in February 2016. Nevertheless, the schedule has been delayed because the necessary approvals were not made in a timely manner due to understaffing of CL-PIU, the delay in DL-PIU structuring and staff hiring, design changes to reduce the cost, additional site surveys, and so on.

For the first construction batch, 84 schools (one school was cancelled, leaving 83 schools in total) were selected to be divided into 17 packages, considering the capacity of local contractors. Among them, the construction of schools in Lalitpur (5 schools per package) was commenced on June 1st and the construction is being implemented. Tenders for the remaining 5 districts (16 packages) and contract-signing followed to start the construction in September 2016 onward. (Details are in 1.2.7&1.2.10)

Schools in the 2nd and 3rd construction batch are now in the selection process. (Details are in 1.3)

Table 1-1 Initial Plan and Current Status

	Initial Plan (cited from MD)	Current Status (As of October 2016)
No. of target schools		
1st Batch	80 (4 packages)	83 (17 packages)
2nd Batch	360 (4 packages)	117 (to be divided into 24 packages – preliminary) ※SS, HSS only
3rd Batch	360 (4packages)	
Total	800	200 (estimated by CLPIU)
Construction schedule		
1st Batch	2016.3~2017.2	2016.6~2018.2
2nd Batch	2017.3~2019.2	2018.1~2019.2
3rd Batch	2017.9~2019.8	2018.1~2019.8

1.2 Progress of the 1st Batch

1.2.1 Selecting Project Schools of the 1st Batch

TPIS-ERP and DOE/CL-PIU established criteria to select Project schools for the 1st construction batch. Initially, both agreed on a selection concept "to prioritize Primary Schools (PS)[5] which had been

[5] PS: Primary School(G1-5), LSS: Lower Secondary School (G1-8)
SS: Secondary School (G1-10), HSS: Higher Secondary School (G1-12). The classification is at the time of selection. After a revision of the Education Act in June 2016, G1-8 is classified as Basic and G9-12 is as secondary.

completely destroyed." However, the concept was slightly modified for the following reasons. The schools were selected based upon the modified criteria.

1) It turned out that many PS are inaccessible by vehicles, and thus it was determined to include Lower Secondary Schools (LSS), Secondary Schools (SS) and Higher Secondary Schools (HSS).

2) It turned out that the number of "completely destroyed schools" is not large, and thus the concept was modified to "schools which had been destroyed by the earthquake." Based upon the criteria, a long list of candidate schools is submitted by each DEO and a total of 120 schools were selected for site survey.

Table 1-2 School Selection Criterial for the First Batch

1. Schools which require reconstruction or renovation due to earthquake (The schools which needs seismic retrofit following the WB/SIDA research result, will be considered for the second or third batches.)
2. HSS, SS, LSS and PS with 60-120 students.
3. Schools accessible by a concrete mixer truck.
4. Schools with a high student-classroom ratio
5. Schools with sufficient construction space and not having any social risks such as forced relocation of residents
6. Schools without classroom construction projects by other donors and/or NGOs
7. Schools without integration with other schools after the earthquake.

3) As for the selection of the Project schools of the 1st batch, site survey by local consultant was carried out based on the list of 120 candidate school list submitted by DEOs. As a result, 70 schools were selected by excluding sites that has problems such as insufficient land area, inappropriate land shape, difficult vehicle access etc.

4) Since then, as there was a divergence from the 92 schools of target number in the first year, a list of 22 schools where acquisition of adjacent land was made after disqualification was submitted. 15 schools out of 22 were selected as additional schools except sites with land ownership problems. However, Komin PS of Raswa District, which was included in 70 schools from DEOs, was reported to be integrated with the adjacent HSS, and this school was excluded from the Project school list. At that moment, the number of Project schools for batch 1 was 70 + 15 - 1 = 84. After that, one school (Shree Nilkantha HSS, DOE S.N. 8, Raswa District) was cancelled because Chinese Government also officially launched a rebuilding project, and as a result, CL-PIU decided not to include this school in JICA support. Therefore, the 1st batch finally became 83 schools.

Table 1-3 Selection of the Project School of the 1st Batch

District	PS (G1-5)	LSS (G1-8)	SS (G1-10)	HSS (G1-12)	Total	No. of Packages
Lalitpur	1	0	1	3	5	1
Gorkha	1	7	8	12	28	6
Makwanpur	4	0	2	1	7	1
Raswa	0	0	0	2	2	1
Nuwakot	5	8	8	2	23	4
Dhading	10	6	1	1	18	4
TOTAL	21	21	20	21	83	17

Source：TPIS-ERP

1.2.2 Type Design and its Combination

Type-design is a prototype of school building, which was formulated in accordance with 1) "Type-design Guidelines" (including type design check list) and 2) "Structural Design Criteria" jointly created by JICA, ADB, DOE. All 37 type-designs were approved by DOE / DUDBC by the end of April 2016. At that time, 37 types were able to cover all school plans, but when TPIS-ERP examined each school and make maximum use of existing safe buildings, 13 type-designs were needed and added. As a result, it became 50 type-designs in total as shown in the table below.

The structural frame of 13 type-designs added are included in 37 already approved type-designs, but only the room function is different, such as, 1) classroom ⇒ ECD, 2) classroom ⇒ special classroom, 3) classroom ⇒ principal and teachers room, 4) computer room ⇒ library, 5)computer room ⇒ teachers room. By changing this room function, 3) needs installation of partition wall, the position of fluorescent light and outlet changes, 4) and 5) need deletion of low walls, the position change of fluorescent light and outlet. There is nothing to change in 1) and 2). As additional 13 types are only minor changes in the room.

There are a total of 36 combinations of type designs for PS, LSS, SS and HSS (see Attachment 2). In addition, if there are usable school buildings within the property of each school, we can delete some type-designs by effectively utilizing existing buildings.

Table 1-4 Type-design List (additional 13 types are shown in yellow)

No	Category	Type Design Code	Description	Floor Area(m^2)
1	Primary & Academic Block	1C(S)	1 small room-Kitchen & Store	56.90
2		2C(S)	2 small rooms-K&S, Head & T	110.36
3		3C(S)	3 small rooms-ECD & 2 Classrooms	163.75
4		3C(S)-A	3 small Classrooms	163.75
5		3C(S)-B	3 small rooms-Library, Music Drawing & PC, Head & T	163.75
6		4C(S)	4 small Classrooms	217.15
7		4C(S)-A	4 small rooms-Library, Music, Drawing & PC, Head & T, K&S	217.15
8		2-4C(S)	2 storey 4 small rooms	285.50
9		2-4C(S)-A	2 storey 1Classroom, ECD, Library, Music, Drawing & PC	285.50
10		2-6C(S)	2 storey 6 small classrooms	392.90
11		3-6C(S)	3 storey 6 small classrooms	428.25
12		2-4C(M)	2 storey 4 medium classrooms	357.20
13		2-6C(M)	2 storey 6 medium classrooms	496.50
14		3-6C(M)	3 storey 6 medium classrooms	535.80
15		3-9C(S)	3 storey 9 small classrooms	616.20
16		3-9C(M)	3 storey 9 medium classrooms	779.97
17	Practical Classroom Block	LaLi	Laboratory and library	182.15
18		EMC	ECD, computer room and music & drawing room	167.30
19		2-LaLiEMC	2 storey laboratory, library, ECD, music & drawing room and computer room	436.80
20		2-LaLiEM	2 storey laboratory, library, ECD, music & drawing room	436.80
21		2- LaLi2CM	2 storey laboratory, library, 2 computer, music & drawing room	556.20
22		3- 3LaLi2CM	3 storey 3 laboratory, library, 2 computer, music & drawing room	870.00
23	Admin. Block	A(S)	Small administration	181.55
24		A(M)	Medium administration	199.36
25		A(L)	Large administration	241.56
26		2-A(L)	2 story large administration	516.40
27		2-AC	2 story administration with computer room	436.80
28	Multipurpose Block	M(S)	Small multipurpose hall	140.82
29		M(L)	Large multipurpose hall	182.35
30	Toilet Block	T(S)	2 small toilet blocks for male and female	68.06
31		T(M)	2 medium toilet blocks for male and female	79.38
32		T(L)	2 large toilet blocks for male and female	109.02
33		T(XL)	2 extra large toilet blocks for male and female	124.02
34	Toilet Block Combine	Tc(S)	1 combine small toilet blocks for male and female	64.89
35		Tc(M)	1 combine medium toilet blocks for male and female	77.48
36		Tc(L)	1 combine large toilet blocks for male and female	105.86
37		Tc(XL)	1 combine extra large toilet blocks for male and female	119.26
38	New Academic Block (with ECD or /and Practical or/and Admin.)	2-4C(S) - B	2 storey 3 Classroom, ECD	285.50
39		2-4C(S) - C	2 storey 2 Classroom, Library, ECD	285.50
40		2-4C(S) - D	2 storey 2 Classroom, Library, Music, Drawing & PC	285.50
41		2-6C(S) - A	2 storey 2 Classroom, ECD, Library, Music, Drawing & PC, Head & T	392.90
42		2-6C(S) - B	2 storey 5 Classroom, ECD	392.90
43		2-6C(S) - C	2 storey 4 Classroom, Head room, teacher room	392.90
44		3-6C(S) - A	3 storey 3 small classrooms, ECD, Library, Music, Drawing & PC	428.25
45		3-6C(S) - B	3 storey 5 small classrooms, ECD	428.25
46		3-9C(S) - A	3 storey 5 small classrooms, ECD, Library, Music, Drawing & PC, Head & T	616.20
47		3-9C(S) - B	3 storey 6 small classrooms, ECD, Library, Music, Drawing & PC	616.20
48		3-9C(S) - C	3 storey 8 small classrooms, ECD	616.20
49	New Practical Classroom Block	EML	ECD, Library and music & drawing room	167.30
50	New Admin. Block	2-AC - A	2 story administration	436.80

Source：TPIS-ERP

1.2.3 Final Packaging of the 1st Batch

The consultation with CL-PIU based on the results of the capacity survey of the local contractors on packaging of 83 schools resulted in the conclusion that an average of 5 schools is appropriate with a reasonable amount of package of 200 to 280 million NPR. (See "1.4.2 Capacity Survey of Local

Contractors") Based on that policy, it was set at about 100 to 300 million NPR per package, and final packaging was set as follows in consideration of the geographical grouping.

Table 1-5 Final Packaging of the 1st Batch

Lalitpur

S.N.	DOE S.N.	School Name	Location	Grade	Package No.
1	2	Shree Mahakali Devi HSS	Bhattedanda-02	HSS	1
2	10	Shree Pathpradarshak SS	Badikhel-02	SS	
3	3	Shree Kalidevi HSS	Pyutar- 01	HSS	
4	4	Shree Vidyadheshwori HSS	Ashrang-06	HSS	
5	5	Shree Jwala Devi PS	Thuladurlung-06	PS	

Gorkha

S.N.	DOE S.N.	School Name	Location	Grade	Package No.
1	1	Shree Tanglichowk-SS	Tanglichowk-4	SS	6
2	2	Shree Bijaya Bhawani-HSS	Makising -8	HSS	
3	3	Shree Balaki- LSS	Bhumlichowk-8	LSS	
4	4	Shree Bhagawati- HSS	Darbung -4	HSS	
5	5	Shree Batuki- LSS	Phujel-9	LSS	
6	6	Shree Janashakti -HSS	Namjung-4	HSS	
7	7	Shree Shaheed Smrity- HSS	Bungkot-3	HSS	3
8	8	Shree Kalika Devi Jhalak- PS	Taple-8	PS	
9	9	Shree Navajagriti Chandi - HSS	Asharang-6	HSS	
10	10	Shree Saraswati- HSS	Borlang-4	HSS	
11	11	Shree Shanti- HSS	Baguwa-6	HSS	
12	12	Shree Bindrawati-HSS	Masel-5	HSS	4
13	13	Shree Shailaputri- HSS	P.K. Deurali-5	HSS	
14	16	Shree Janashakti-LSS	Aruchanute	LSS	
27	14	Shree Maikot SS	Takukot-1	SS	
28	15	Shree Bhagawati-SS	Dhawa-3	SS	
15	18	Shree Bal kalyan-LSS	Chyangli-6	LSS	1
16	19	Shree Dharmodaya-SS	Mirkot-5	SS	
17	20	Shree Sharada-SS	Khoplang-2	SS	
18	21	Shree Champawati-HSS	Harmi-4	HSS	2
19	22	Shree Mandali- HSS	Chhoprak-5	HSS	
20	23	Shree Shyartan-LSS	Kharibot-1	LSS	
21	24	Shree Jivan Jyoti-SS	Hanksapur-5	SS	
22	25	Shree Dhansira-SS	Gyachowk-4	SS	5
23	26	Shree Jivan Jyoti -LSS	Simjung-9	LSS	
24	27	Shree Muchchoktar-LSS	Muchchok-3	LSS	
25	28	Shree Himalaya-HSS	Barpak-04	HSS	
26	29	Shree Durga -SS	Saurpani-8	SS	

Makwanpur

S.N.	DOE S.N.	School Name	Location	Grade	Package No.
1	1	Shree Dewaki SS	Phaparbari -2	SS	1
2	2	Shree Mahendra HSS	Bhimphedi -2	HSS	
3	4	Shree Panchkanya PS	Harnamadi -4	PS	
4	5	Shree Ganesh PS	Barshamadi-4	PS	
5	8	Shree Tistungdewarali Nepalchember PS	Tistung 4	PS	
6	6	Shree Tileshwor PS	Kalikatar 5	PS	
7	3	Shree Kamaladevi SS	Dadakharka 9	SS	

Rasuwa

S.N.	DOE S.N.	School Name	Location	Grade	Package No.
1	4	Shree Nilkantha HSS	Laharepauwa-1	HSS	1
2	7	Shree Parwatikunda HSS	Goljung-07	HSS	

Dhading

S.N.	DOE S.N.	School Name	Location	Grade	Package No.
1	1	Shree Jyamire Chaur PS	Salyantar -3	PS	1
2	2	Shree Awagaman PS	Salyantar -6	PS	
3	3	Shree Jaleshwori PS	Aaginchowk -7	PS	
4	9	Shree Annapurna PS	Baseri -1	PS	
5	10	Shree Shivalaya SS	Baseri -8	SS	
6	4	Shree Bedbyas PS	Salyankot -5	PS	2
7	5	Shree Thani Chandi PS	Salyankot -7	PS	
8	6	Shree Mehendrodaya HSS	Mulpani -8	HSS	
9	7	Shree Kamaladevi LSS	Mulpani -2	LSS	
10	11	Shree Golabhanjyang PS	Jyamrung -8	PS	3
11	14	Shree Narayanidevi PS	Katunje -5	PS	
12	16	Shree Jaljale Bhanjyang PS	Tripureshor-8	PS	
13	17	Shree Nimarchowk LSS	Marpak -5	LSS	
14	21	Shree Manakamana PS	Khari -6	PS	
15	18	Shree Janakalyan PS	Dhuwakot -4	PS	4
16	19	Shree Manakamana Devi LSS	Khalte -6	LSS	
17	24	Shree Annapurna PS	Khalte-4	PS	
18	27	Shree Juntara PS	Kiranchowk-7	PS	

Nuwakot

S.N.	DOE S.N.	School Name	Location	Grade	Package No.
1	5	Shree Deurali SS	Deurali-4	SS	1
2	6	Shree Sanukimtang SS	Kimtang-4	SS	
3	13	Shree Chandradevi LSS	Kintang-7	LSS	
4	18	Shree Mangaladevi LSS	Lachyang-2	LSS	
5	26	Shree Sulakshana SS	Bidur-9	SS	
6	27	Shree Kanyadevi LSS	Kalyanpur-1	LSS	
7	1	Shree Khaniyakharka LSS	Kumri-9	LSS	2
8	2	Shree Tilakeshwor LSS	Duipipal-5	LSS	
9	3	Shree Devisthan PS	Madanpur-7	PS	
10	8	Shree Dangsing SS	Dangsing-4	SS	
11	11	Shree Bageshwory LSS	Khadga-2	LSS	
12	25	Shree Rastriya SS	Thanshing-9	SS	
13	7	Shree Shalme SS	Shalme-8	SS	3
14	12	Shree Jyoti LSS	Kahule-2	LSS	
15	15	Shre Nawaprakash SS	Suryamati-4	SS	
16	29	Shree Sundarikeureni HSS	Gerkhu-3	HSS	
17	30	Shree ShantiKalyan LSS	Upallagerkhu-2	LSS	
18	17	Shree Jalpadevi LSS	Mahakali-8	LSS	4
19	19	Shree Biggyan HSS	Narjamandap-1	HSS	
20	21	Shree Prabhudanda PS	Ralukadevi-7	PS	
21	22	Shree Raluka SS	Raluka-1	SS	
22	23	Shree Sundara HSS	Sundaradevi-2	HSS	
23	24	Shree Janasahayog PS	Samundradevi-8	PS	

1.2.4 Furniture Design and Bidding

Regarding school furniture, the tender documents of Lalitpur District package of the first batch were submitted to CL-PIU in November 2016, and the scope of TPIS-ERP was finished then. Therefore, in ESRP, the bidding task of Lalitpur District, the preparation of tender documents of remaining 6 packages in 5 Districts of the first batch will be carried out in order. The current furniture bidding package plan is as follows.

Table 1-6 Furniture Bidding Package Plan

Lalitpur	1 package
Makwanpur	1 package
Nuwakot	2 packages
Dhading	1 package
Raswa	
Gorkha	2 packages

1.2.5 Demarcation of Bidding Task between CL-PIU and TPIS-ERP

TPIS-ERP, together with a local sub-consultant, created the technical part (detailed design drawings, technical specifications and BOQ) of all 83 schools' tender documents. Drawings of each building follow the aforementioned type design, but since site plans and BOQs differ depending on schools, it

is necessary to create them for all schools. On the other hand, the role of CL-PIU is to prepare the administrative part of tender documents (tender invitation, contract form, general conditions, etc.), pre-bid meeting, tender opening, tender evaluation and contracting with selected contractors.

1.2.6 Kick-off Meeting

Prior to the tender announcement, a kick-off meeting are held by and with the principal and the school management committee (SMC) chairperson at the DEO of each district (For Lalitpur District, as an exception, kick-off meeting was held on March 31, 2016 between the tender announcement and the tender opening). The objective is for DL-PIU to explain the project outline, to explain and conclude the MOU between DEO and SMC, and for TPIS -ERP to explain each school's site layout plan.

1.2.7 MOU

In the MOU concluded between DEO and SMC, assistance for contractors and DEOs undertaken by SMC during construction is described. Based on the background that SMC traditionally involved in the construction of schools in Nepal, the CL-PIU judged that participation of SMC in this project is essential, and following to MOU for ADB project, CL-PIU prepared MOU for JICA project to conclude between DEO and SMC. The main roles of the SMC described in the MOU are shown below.

- Cooperation in draft reconstruction plan
- Maintenance of access roads, provision of infrastructure (electricity and water supply)
- Monitor debris removal
- Land certificate acquisition assistance
- Report on environmental and social considerations
- Commitment to facility maintenance
- Obtainment of approval of building permit from local government

MOU was concluded in all six districts by June 29, 2016. CL-PIU started tendering after the conclusion of MOU. However, in this project, SMC is not allowed to interfere with technical decisions, and these will be delegated to engineers.

1.2.8 1st Batch Tender Status

After the submission of the tender documents from TPIS-ERP to CL-PIU, CL-PIU obtains internal confirmation / approval of the documents, makes ITB (Instruction to Bidders), and publicizes the tender on the newspaper and the PPMO web site. The tender method is document or electronic, the preparation period of tender is 30 days; the tender submission and the tender opening are done on the same day. Tender opening, evaluation, contract will be carried out by CL-PIU. Evaluation criteria are prescribed in the tender documents, and if the minimum requirement is met, the lowest price becomes

a successful tender. Therefore, the bid evaluation is mainly to check whether the minimum requirements are met and whether there is any arithmetic error. Prequalification examination (P / Q) is not being carried out. The bidding status of the 1st batch as of the end of January 2017 is shown in the table below.

Table 1-7 1st Batch Tender Status（2016/2017）

District	Package No.	Kick-off meeting	Tender announcement	Tender opening	Contract signing	Contract amount NRP	Commencement of construction
Lalitpur	1	3/31	3/15	4/16	5/26	231,049,958	6/1
Gorkha	1	4/21	5/25	6/24	9/18	116,718,812	9/24
	2		5/25(1st) 9/16(2nd)	6/24(1st) 10/18(2nd)	12/29	180,291,951	1/4
	3		5/27	6/27	9/29	204,403,324	10/5
	4				9/25	266,804,753	10/1
	5		6/12	7/12	9/22	273,295,100	9/28
	6				9/30	270,691,732	10/6
Makwanpur	1	5/13	7/5	8/4	10/17	182,014,292	10/23
Rasuwa	1	6/5	8/16	9/15	12/1	66,383,116	12/7
Dhading	1	6/29	8/29	9/28	12/8	107,800,830	12/14
	2					139,002,611	12/14
	3		9/4(1st) 11/23(2nd)	10/4(1st) 12/23(2nd)	not yet		not yet
	4						not yet
Nuwakot	1	6/6	10/3	11/4	1/16	224,817,895	not yet
	2				1/25	207,574,434	not yet
	3		10/7	11/8	12/29	189,704,094	1/4
	4				not yet	235,971,509	not yet

Source: TPIS-ERP The items in grey are not yet implemented by the end of January 2017

In Gorkha District's package 2, re-tender was carried out because the tender documents were incomplete. In Dhading District's packages 3 and 4, re-tender were carried out because non of the bidder is eligible in the bids.

1.2.9 Investigation of the School Sites where TPIS-ERP hadn't visited

The quick school damage assessment was carried out by DOE immediately after the earthquake under the cooperation of UNICEF. At that time, a green sticker was attached to a building usable safely and a red sticker was attached to a building that could not be used safely. After that, SIDA (Structural

Integrity and Damage Assessment) was implemented by the World Bank to all schools in the afflicted area, but in the survey result report didn't make a judgment on whether existing school buildings are usable or not.

School reconstruction plan has been made based on these survey results and site survey by a local consultant but when we actually visit the school sites, we found that a certain number of usable red sticker buildings and a few unusable green sticker buildings. As a result, TPIS-ERP staff decided to check all the sites directly, in order to avoid dismantling usable school buildings and avoid using school buildings with significant damages. Due to access difficulties during the rainy season, the damage situation of 48 schools (of which 17 were additional schools) out of 83 schools in the 1st Batch was unconfirmed as of the end of September 2016, and we restarted survey from October 26, 2016 and finished on December 15, 2016. We submitted the survey result report of 83 schools to the JICA office on February 8, 2017.

1.2.10 1st Batch Construction Progress

After Lalitpur package was started on June 1, 2016, it took time due to problems such as delay of tender documents evaluation and approval, delay of tender evaluation, re-bidding, understaffing of construction supervision staff in DL-PIUs,. However, from September the remaining packages have started construction one after another. Excluding the re-tender of 2 packages in Dhading in November 2016, 15 packages have started construction in January 2017. With regards to Lalitpur, though the rainy season began just after the commencement and construction was not possible except for 2 sites, the construction has resumed in October 2016, when the rainy season finished. The following table summarizes the construction progress of all 17 packages as of February 2017. For details of each site, see Attachment 1.

Table 1-8 Construction Progress of the 1st Batch as of February, 2017

District	Contract Number	School	Contract Value NRP(Excl. VAT)	Commence-ment (Duration) Target Completion	Progress (%) Actual/Plan @February 2017	Change in Design	Problems
Lalitpur	Package 1 ESRP/DOE/NCB/01-Lalitpur	Mahakalidevi HSS, Bhattedanda-02	55,937,298.25	1 Jun 2016 (15 months) 1 Sep 2017	16.8/28.3	Additional retaining wall, stone masonly and cut/fill	No progress in the rainy season
		Kalidevi HSS, Pyutar-01	46,805,662.95		29.7/55.2	No major change	Shortage of skilled/non-skilled workers
		Shree Vidyadheshwori HSS, Ashrang-06	55,457,618.50		14.0/29.1	No major change	No progress in the rainy season
		Shree Jwala Devi PS, Thuladurlung-06	27,731,553.80		32.8/42.8	No major change	Shortage of skilled/non-skilled workers
		Shree Pathpradarsak SS, Badikhel-02	45,299,999.80		35.7/70.0	Number of blocks has been reduced from 5 to 3 due to lack of land	Shortage of skilled/non-skilled workers
Gorkha	Package 1 ESRP/DOE/NCB/05-Gorkha-1	Bal Kalyan - LSS, Chyangli-06	28,747,290.50	18 Sep 2016 (15 months) 18 Dec 2017	12.87/15.28	No major change	Shortage of workers. Safety and quality management is poor
		Dharmodaya - SS, Mirkot-05	56,143,741.30		20.96/16.23 ahead of schedule	Relocation of 2 blocks	Safety and quality management is poor
		Sharada - SS, Khoplang-02	31,827,779.90		14.89/15.57	No major change	Safety and quality management is poor
	Package 2 ESRP/DOE/NCB/05-Gorkha-2	Champawati - HSS, Harmi-04		4 Jan 2017 (15 months) 4 Apr 2018	No progress data has been submitted yet.		
		Mandali - HSS, Chhoprak-05					
		Shyartan - LSS, Kharibot-01					
		Jivan Jyoti - SS, Hansapur-05					
	Package 3 ESRP/DOE/NCB/06-Gorkha-3	Shaheed Smrity - HSS, Bungkot-03	51,350,765.90	12 Oct 2016 (15 months) 12 Jan 2018	There is significant delay without percentage data, because work schedule has not been submitted yet	3 blocks were shifted	1. Poor constructed methods and workmanship in site due to insufficient number of skilled manpower. 2. Hoarding for construction sites 3. Inadequate construction materials handling at site.
		Kalika Devi Jhalak - PS, Taple-08	26,686,450.70			1 academic block was rotated	
		Navajagriti Chandi - HSS, Asharang-06	40,223,533.60			3 blocks were shifted	
		Saraswati - HSS, Borlang-04	53,575,958.50			No major change	
		Shanti - HSS, Baguwa-06	41,083,420.20			2 blocks were slightly shifted	
	Package 4 ESRP/DOE/NCB/06-Gorkha-4	Bindrawati - HSS, Masel-05	56,362,762.70	25 Sep 2016 (15 months) 24 Dec 2017	8.40/20.32	Position of 2 blocks were exchanged	The safety measures are not sufficient . Works are not in sufficient numbers. The materials storing and housekeeping is poor. Lab in not established as required at site as mentioned in contract document.
		Shailaputri - HSS, P.K.Deurali-05	51,823,395.30		8.95/15.52	No change	
		Janashakti - LSS, Chanaute,Arutar-03	47,260,435.50		16.87/20.00	Toilet was rotated	
		Maikot SS, Takukot-01	48,231,387.05		2.01/5.96	2 blocks were slightly shifted	
		Bhagwati SS, Dhawa-03	63,126,772.40		6.67/11.77	No change	
	Package 5 ESRP/DOE/NCB/08-Gorkha-5	Dhansira - SS, Ghyachchok-04	52,930,547.00	28 Sep 2016 (15 months) 28 Dec 2017	Progress is very slow and no percentage data, because work schedule submitted is incomplete	No change	• Lack of adequate supply of manpower and materials at site. • Lack of skill manpower and technicians. • Lack of proper construction equipment/machines in time. • Labors leaving site due to delay in payment/ festival..
		Jivan Jyoti - LSS, Simjung-09	38,538,429.70			2 blocks were shifted	
		Muchchoktar - LSS, Muchchok-03	43,577,278.00			2-AC and 2-4C(S) were replaced by 3-9C(S) due to space unavailability.	
		Himalaya - HSS, Barpak-04	86,548,135.70			No major change	
		Durga - SS, Saurpani-08	51,700,711.20			2-6C(S) and EML block replaced by 3-9C(S)	
	Package 6 ESRP/DOE/NCB/08-Gorkha-6	Shree Tanglichowk - SS, Tanglichowk-04	55,273,915.00	30 Sep 2016 (15 months) 30 Dec 2017	9.57/33.33	No major change	The contractor hasn't submitted the work plan and schedule yet
		Bijaya Bhawani - HSS, Makaising-08	45,602,600.00		5.74/33.33	No major change	
		Balaki - LSS, Bhumlichowk-08					
		Bhagawati -HSS, Darbung-04					
		Batuki - LSS, Phujel-09	40,440,361.44		7.93/33.33	Only buildings orientation change	
		Janashakti - HSS, Namjung-04	68,475,321.86		8.85/33.33	Only buildings orientation change	
Makwanpur	Package 1 ESRP/DOE/NCB/09-Makawanpur-1	Dewaki SS, Phaparbari-02	23,897,172.20	17 Oct 2016 (15 months) 17 Jan 2018	There is significant delay	All blocks were relocated.	
		Ganesh PS, Barshamadi-04	17,726,303.80				Stakeholders widen site area by cutting earth.
		Mahendra HSS, Bhimphedi-02	39,575,565.70			Toilet blick relocated	Actual land boundary of school was resurveyed.
		Panchakanya PS, Harnamadi-04	19,308,875.70				Construction management is poor
		Tileshwor PS, Kalikatar-07	21,287,050.20				Construction management is satisfactory
		Tistung Deurali Nepal chamber PS, Tistung-04	22,947,555.40			Position of an academic block was shifted	Construction management is very poor
		Kamaladevi SS, Dadakharka-09	40,896,486.90				Transportation of construction materials is very difficult.
Rasuwa	Package 1 ESRP/MOE/CLPIU/01-Rasuwa-1	Nilakanth HSS, Laharepawa-01	23,458,087.14	1 Dec 2016 (15 months) 1 Mar 2018	9.0/7.0 ahead of schedule	No change	Shortage of engineers at site.
		Parwatikunda HSS, Goljung-07	51,554,834.05		1.0/7.0	No change	Lack of aggregate. Lack of engneer and mason.

District	Contract Number	School	Contract Value NRP(Excl. VAT)	Commence-ment (Duration) Target Completion	Progress (%) Actual/Plan @February 2017	Change in Design	Problems
Dhading	Package 1	Jyamire Chaur PS, Salyantar-3	13,648,590.90	8 Dec 2016 (15 months) 8 Mar 2018	21.5/14.94 ahead of schedule	No major change	
	ESRP/MOE/CLPI U/073/74-Dhading-1	Awagaman PS, Salyantar-6	18,071,786.00		21.5/14.94 ahead of schedule	No major change	
		Jaleshwori PS, Aginchowk-07	18,593,650.40		0.0/14.94	No change	The work has not started till date at this site.
		Annapurna PS, Baseri-01	24,013,222.40		0.0/14.94	No change	The work has not started till date at this site.
		Shivalaya SS, Baseri-8	33,390,655.62		0.0/14.94	No change	The work has not started till date at this site.
	Package 2	Bedbyas PS, Salyankot-05	24,837,145.60	8 Dec 2016 (15 months) 8 Mar 2018	0.0/14.94	No change	The work has not started till date at this site.
	ESRP/MOE/CLPI U/073/74-Dhading-2	Thanichandi PS, Salyankot-07	18,148,438.20		14.94/14.94	No change	Progress is site mobilization and desmantling of existing buildings
		Mahendrodaya HSS, Mulpani-08	65,413,914.72		0.0/14.94	No change	The work has not started till date at this site.
		Kamaladevi LSS, Mulpani-02	37,919,039.60		0.0/14.94	No change	The work has not started till date at this site.
	Package 3	Golabhanjhyang PS, Jyamrung-08		Not yet started			
	ESRP/MOE/CLPI U/073/74-Dhading-3	Narayani Devi PS, Katunje-05					
		Jaljale Bhanjhyang PS, Tripureshor-08					
		Nimarchowk LSS, Marpak-05					
		Manakamana PS, Khari-06					
	Package 4	Janakalyan PS, Dhuwakot-04		Not yet started			
	ESRP/MOE/CLPI U/073/74-Dhading-4	Manakamana Devi LSS, Khalte-06					
		Annapurna PS, Khalte-04					
		Juntara PS, Kiranchowk-07					
Nuwakot	Package 1	Deurali - SS, Deurali-04	254,004,221.46 (tolal of 6 sites)	23 Jan 2017 (15 months) 22 Apr 2018	Not available yet because the Contractor has just mobilized.	No change	• Contractor has mobilized few numbers of labours at site which cannot achieved scheduled progress. • Till date no construction materials are transported at site.
	ESRP/MOE/CLPI U/073/74-Nuwakot-1	Sanu Kimtang - SS, Kimtang-04				No change	
		Chandradevi - LSS, Kimtang-07				No change	
		Mangaladevi - LSS, Lachyang-02				No change	
		Sulakshana - SS, Bidur-09				No change	
		Kanyadevi - LSS, Kalyanpur-01				No change	
	Package 2	Khaniya Kharka - LSS, Kumari-09	234,559,110.45 (tolal of 6 sites)	30 Jan 2017 (15 months) 30 Apr 2018	Not available yet because the Contractor has just mobilized.	No change	• Contractor has mobilized few numbers of labor at site. • Till date no construction materials are transported at site. • There is no permeant contract manager and permeant engineer.
	ESRP/MOE/CLPI U/073/74-Nuwakot-2	Tilakeshwor - LSS, Duipipal-05				No change	
		Devisthan PS, Madanpur-07				No change	
		Dangsing - SS, Dandsing-04				No change	
		Bageshwori - LSS, Khadga-02				No change	
		Rastriya - SS, Thansing-09				No change	
	Package 3	Shalme -SS, Shalme-08		Not yet started			
	ESRP/MOE/CLPI U/073/74-Nuwakot-3	Jyoti - LSS, Kaule-02					
		Nawaprakash - SS, Suryamati-04					
		Sundari Keurini - HSS, Gerkhutar-02					
		Shanti Kalyan - LSS, Gerkhu-02					
	Package 4	Jalpadevi - LSS, Mahakali-08		Not yet started			
	ESRP/MOE/CLPI U/073/74-Nuwakot-4	Biggyan - HSS, Narjamandap-01					
		Prabhudanda PS, Ralukadevi-07					
		Raluka- SS, Raluka-04					
		Sundara - HSS, Sundaradevi-02					
		Janasahayog PS, Samundradevi-08					

Source: TPIS-ERP

1.3 Progress of the 2nd and 3rd Batches

1.3.1 Selecting School for 2nd and 3rd Batches

The Nepali side hopes to prioritize the rebuilding of a large-scale school while expressing contradictory desire to secure more number of schools. Due to limited budget, realizing both desires would be difficult. In consultation with CL-PIU, TPIS-ERP has devised measures to reduce project costs, such as removing multi-purpose halls, and has given a simulation of how many PS, LSS, SS, HSS could be constructed in various conditions. Furthermore, TPIS-ERS insisted that rather than constructing a lot of small schools in this Project (quantity), from the viewpoint of the number of beneficiary students, it is more desirable to construct a large size and high quality complete schools in the local town centre with vehicle access and positioning the school as an evacuation centre.

As a result, at the MOE / DOE / JICA meeting held on April 5, 2016, it was tentatively agreed to give a priority to SS and HSS for the 2nd and 3rd batches of JICA project, and PS and LSS should be covered by the Government project or INGO / NGO etc. Furthermore, in the Post Disaster Recovery Framework (PDRF), it was decided to rebuild a complete school that applied to JICA model for the SS and HSS, which are the model schools in each district.

According to JICA support policy of 2nd & 3rd batches described above, TPIS-ERP and CL-PIU discussed the school selection criteria. As a result, the final criteria were proposed by CL - PIU on June 1, 2016. The contents are as follows.

Table 1-9 School Selection Conditions for 2nd & 3rd Batches

Necessary condition
1. School is limited to public SS or HSS
2. School has land ownership or land use certificate
3. School has sufficient construction site
4. School has no integration, relocation and decrease in the number of students
5. School has no fear of flooding and landslides

Priority condition
1. School with significant earthquake damage
2. School with a lot of students
3. School with a lot of classes

In addition, the CL-PIU estimates from the actual cost of the 1st batch (40 to 50 million NPR per school) and aims to construct a total of 200 schools within the loan budget. That is, the target number of school of 2nd and 3rd batches is 200 - 83 = 117 schools. As for the selection of schools of 2nd and 3rd batches, the TPIS-ERP utilizes the results of the Structural Integrity and Damage Assessment (SIDA) by the World Bank and selects the long list of the target schools based on the above mentioned

selection criteria. First of all, CL - PIU requested each DEO to submit a long list (160 schools, 1.35 times the target 117 schools, considering sites excluded due to lack of land etc.) and submitted to TPIS-ERP (The long list was submitted by CL-PIU in early November 2016). TPIS-ERP checked the long list against the SIDA result, and replaced the priority. After that, in consultation with CL-PIU including priority, presented it to DEO via CL-PIU and finally agreed on a long list.

And up to this long list agreement was the scope of TPIS-ERP. Since then, the site survey and making the short list (117 schools) from 160 long list schools will be carried out by the loan project (ESRP), because it is impossible to judge the possibility of construction without checking the site condition through survey. After mobilization of Loan Consultant, the longlist was submitted by from CL-PIU with reduced number of schools from 154 to 143.

1.4 Other Relevant Issues

1.4.1 First Anniversary Workshop of the Nepal Earthquake

To commemorate the first anniversary of the earthquake on April 25, 2015, JICA invited stakeholders from inside and outside of Nepal to hold a workshop on April 25, 2016. TPIS-ERP team prepared the following presentation materials.

- Explanation of the plan using a perspective drawings (panels)
- Description of school list and type design (brochure)

1.4.2 Capacity Survey of Local Contractors

In order to verify the validity of the tender package, TPIS-ERP conducted a capacity survey of the local contractors. After conducting interviews with some local contractors and a local consultant, 19 contractors in the highest level of A class and have a certain size construction experience were selected as the survey target.

<Criteria of A Class Contractor>

1) Financial situation: Contractors registered with Industry Bureau of the Ministry of Industry with a capital of 10,000,000 NRP or more
2) Business experience: Contractors with more than 4 public works projects with 10,005,000 NRP or more or who have conducted public works projects totalling over 60,000,000 NRP.
3) Employee: 2 or more technicians with more than 20 years of public project experience

We requested the contractors who are interested in this Project to submit the company data, and only 9 out of 19 contractors submitted such data. Based on the company data, it turned out that the capacity of the local contractor was the followings.

- The average annual turnover is 150 to 350 million NPR
- They have work experience of over 100 million NPR.
- More than 60% of the contractors' financial burden capacity (Line of Credit) is 150 million NPR or more.

Based on the above survey results, the reasonable amount of package is 200 to 280 million NPR. Also, 5 schools are reasonable for an average of one package.

1.4.3 Training for Construction Supervision

JICA, ADB, CL - PIU and the Australian Embassy held a joint workshop for DL - PIU engineers and sub-engineers from July 12 to 14, 2016. In the workshop JICA, ADB, CL - PIU and the Australian Embassy conducted construction supervision training for the items in the table below for DL - PIU engineers and sub-engineers assigned in 14 districts. The purpose of the joint workshop is to enable DEO engineers (DL-PIU engineers) and newly employed sub-engineers to understand the architectural, structural, mechanical and electrical design of JICA and ADB Projects and to comprehend the know-how of the construction supervision such as quality control, safety control and work schedule management, document management and so on, through utilizing the Supervision Manual provided in the workshop.

Table 1-10 Items of Training for Construction Supervision (July 12 to 14, 2016)

Contents	
1.Type Design	1.1 Background 1.2 Target Area 1.3 Feasibility 1.4 Target Grade 1.6 Block Type 1.7 Main Concept of Type Design 1.8 Image of Type Design
2.Architectural Consideration	2.1 Codes and Standards 2.2 Site Selection 2.3 Design & Planning guidelines 2.4 Design Considerations 2.5 Building Materials and Specifications 2.6 TECHNICAL SPECIFICATION
3.Structural Consideration	3.1 Codes and Standards 3.2 Structure Design Methodology 3.3 Design Parameters and Loads 3.4 Base Shear Calculation 3.5 Load Combination 3.6 Ductile Detailing 3.7 Foundation Design
4.Mechanical & Electrical Consideration	4.1 Power Source 4.2 Power Requirement 4.3 Wiring 4.4 Main Distribution Board (MDB) 4.5 Feeders Current Rating 4.6 Bus Bars 4.7 MCB 4.8 Constructional Features 4.9 Power Distribution Network 4.10 Earthling 4.11 Light Fixtures 4.12 Codes of Practice 4.13 Mounting Heights
5.Site Development Consideration	5.1 Layout 5.2 Open Space 5.3 Use of Available Flat Land 5.4 Minimize Site Development Works 5.5 Retention of Existing Utilities 5.6 Chain Link Fence. 5.7 Hard and Soft Paved Walkway 5.8 Septic Tank and Soak Pit
6.Water Supply and Sanitation Consideration	6.1 Standards and Codes 6.2 Water Supply System 6.3 Sewage & Waste Disposal System 6.4 Waste Water Disposal 6.5 Rain Water Disposal

Source：TPIS-ERP

1.4.4 Maintenance Manual

For appropriate school facilities maintenance after the completion of construction, TPIS-ERP has made a draft "Maintenance Manual (English version)" (see attachment 3). However, the attached version is not the final one. It will be final version by improving through the implementation of the loan project (ESRP). We propose the strategies for improvement as shown below.

1) There is no educational expert in TPIS-ERP, so the technical part of facility maintenance is the centre of the draft version, and it is desirable to enhance the software aspect linking concrete maintenance activities to school operation. In order to improve the software aspect, TPIS-ERP had a discussion with educational experts who are implementing SISM 2. SISM 2 proposed that the school improvement plan (SIP) formulated annually by the SMC should include the method and organization of facility maintenance, budget and so on. And the training for schools and SMCs using this manual during implementation of ESRP is necessary as the following options, to improve the awareness for the importance of maintenance among stakeholders.

   Option A) : ESRP will train DL-PIU engineer and then DL-PIU engineer will implement training for schools and SMCs

   Option B) : Upload the maintenance manual to CL-PIU's web site and NGOs etc. train schools and SMCs

   Option C) : ADB, co-financing partner, conducts training for schools and SMCs by using this manual

2) Since the main actor of school maintenance is students, teachers, staff, SMC, etc., the manual of Nepali version is considered essential. Therefore, we have started translating from English to Nepali.

1.5 Problems and Countermeasures in Construction

After construction starts, the following problems occurred and countermeasures were taken. It is essential to continue these measures during implementation of ESRP.

Table 1-11 Problems and Countermeasures in Construction

Problem	Description	Countermeasures
1.Accessibility in rainy season	Road conditions in rural areas of Nepal where most schools are located is the lowest level in every sense, in pavement rate, high in curves, high in unevenness, difficulty in traffic during rainy season, low speed at which vehicles can pass, road width, risk of landslides, insufficient security equipment (traffic lights, street lights, guardrails, road signs etc.). Even in the dry season, it is not uncommon to take 3-4 hours to travel 20 km. It is assumed that more than half of the sites will be inaccessible by vehicles during rainy season.	If the rainy season comes in during construction, procure construction materials and bring it to the site within the dry season. However, if the rainy season comes soon after the signing of construction contract, it is recommended to wait commencement until the rainy season is over, in order to avoid long-term traffic impossibility and accidents falling from the cliffs or landslide.
2. Lack of capacity for contractors to produce documents	Generally, there is no capable staff in the Contractor who can create construction related documents at the level required by the Project including the work schedule, and the submission of the monthly report delayed significantly. Overall, the awareness of construction management utilizing documents is low, and less detailed construction record remains in the sites.	In Lalitpur District, the consultant prepared the monthly report form and let them follow it. Similar guidance is necessary for other packages. Creation support and guidance are necessary because not only the monthly report but also the ability to comprehensively prepare documents such as work schedules and various test result reports is low.
3.Problems of DL-PIU Engineer / Sub Engineer	TPIS-ERP Consultants are not in a position to supervise construction directly. Their responsibility is limited to guidance, advice, monitoring, quality control inspections and reports to DL - PIU engineers and sub - engineers. Therefore, it is a major premise that DL-PIU (1 engineer and 6 sub-engineers per district) should implement appropriate construction supervision, but because they are also in charge of rebuilding schools of other projects than JICA projects, they remain in the District capital city and cannot be resident or highly frequent supervision at the sites.	Since the supervision by the DL-PIU could not be carried out properly and was not improved at all, we switched to a method to enrich the local consultant engineers as assistants of "engineers". Each site has one resident engineer/sub-engineer from the local consulting firm, with a senior engineer responsible for each District. On the other hand, the loan consultant of ESRP will take the position of "engineer", so proper supervision will be possible with the current supervising organization.

4. Safety Control	The safety consciousness of contractors in Nepal is low. Workers with no helmet and sandals went down by the guidance of TPIS-ERP. However, there were still problems such as the lack of handrails during high position work, insufficient scaffolding, temporary fence that students can go through, defective / insufficient alerting signboards, etc. There are also differences in customs and traditions concerning safety control, and safety control expenses are not sufficiently estimated in the bid price, so the current situation that it is not easy to realize safety level similar to that of Japan or developed countries.	In response to the advice of TPIS-ERP, CL-PIU issued letters to promote safety measures to all the contractors. (refer to Attachment 2) Letter includes (1) temporary fence installation, (2) separation between construction area and student's area, (3) handrails, (4) appropriate scaffoldings, (5) safety net, (6) safety belt, (7) helmet, shoes, gloves, (8) electric shock prevention, (9) safety of dismantling work, (10) organization and cleaning of the site. In addition, construction related persons participated in the safety seminar Mr. Hakojima held at JICA office on January 19 to improve their safety awareness. As for safety control, we keep on instructing contractors as a topic to be discussed in the monthly meeting.

1.6 Handling over from TPIS-ERP to ESRP

1.6.1 Schedule of ESRP

The schedule along with the start of contract on February 8, 2017 is shown below

Table 1-12 Schedule for ESRP (draft)

1.	Construction Supervision of 1st Batch	Early March 2017 – End of March 2018
2.	Site Survey of 2nd Batch	Late February – end of March 2017
3.	Tender and Contract of 2nd Batch	Early April – Mid July 2017
4.	Construction Supervision of 2nd Batch	Mid July 2017 – End of October 2018
5.	Site Survey of 3rd Batch	Early May – Mid June 2017
6.	Tender and Contract of 3rd Batch	Mid July – end of September 2017
7.	Construction Supervision of 3rd Batch	Early October 2017 – End of January 2019

Source: ESRP Consultant

1.6.2 Organization Chart of ESRP Consultant

The Organization Chart of ESRP Consultant is shown in below.

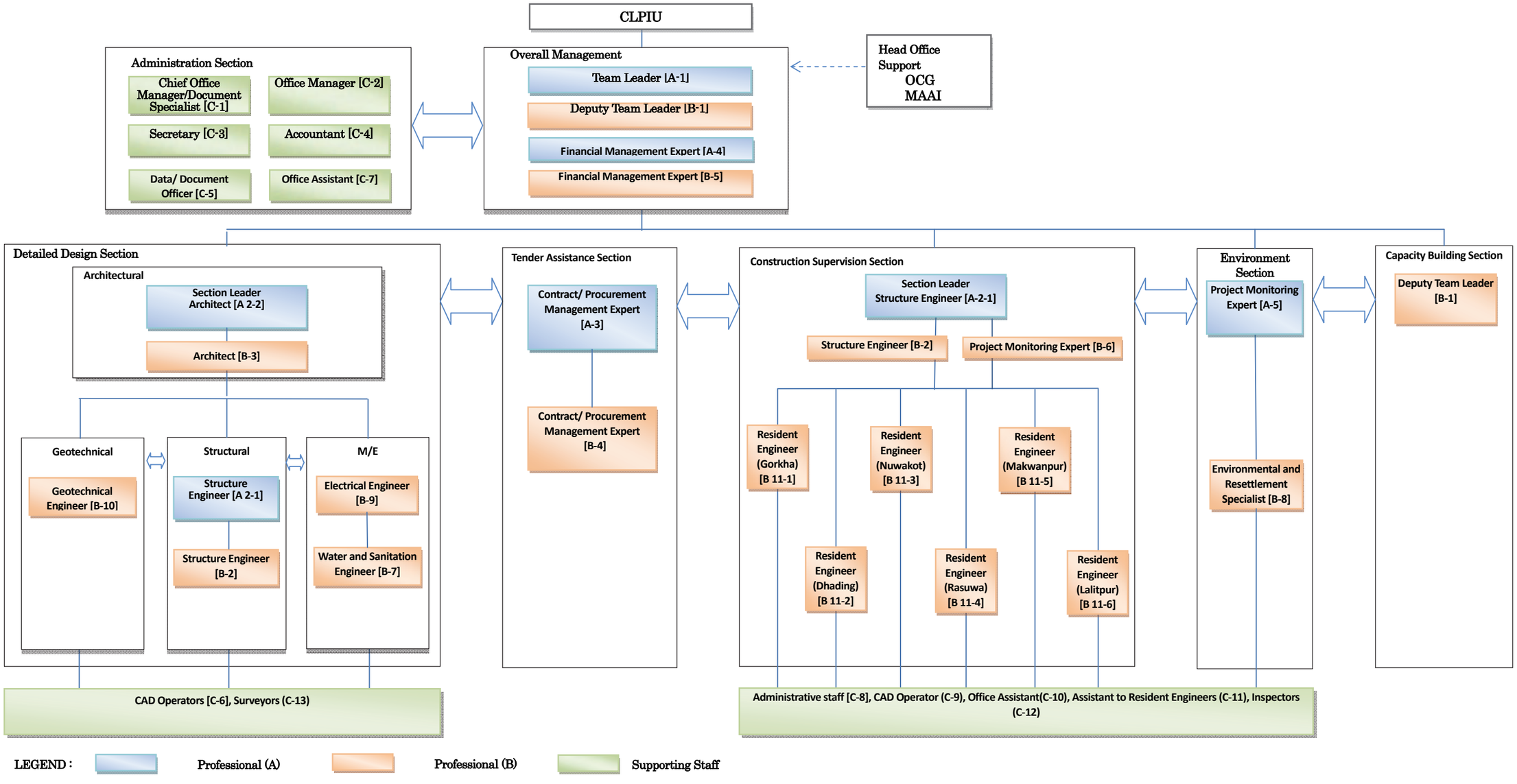


Figure 1-3 Organization Chart of ESRP Consultant

Source：TPIS-ERP

2. Environmental Safeguard

2.1 Brief Summary of District-wide Environmental and Social Baseline Condition

2.1.1 Introduction

This section summarizes baseline environmental and social information of following six districts, namely (1) Gorkha, (2) Lalitpur, (3) Rasuwa, (4) Nuwakot, (5) Dhading and (6) Makawanpur. The detailed baseline natural and social environmental information of each of the six districts are summarized within sets of final study reports, entitled "Baseline Environmental and Social Profile Study for Emergency Reconstruction Project", separately. Figure below shows the major protected areas in Nepal.

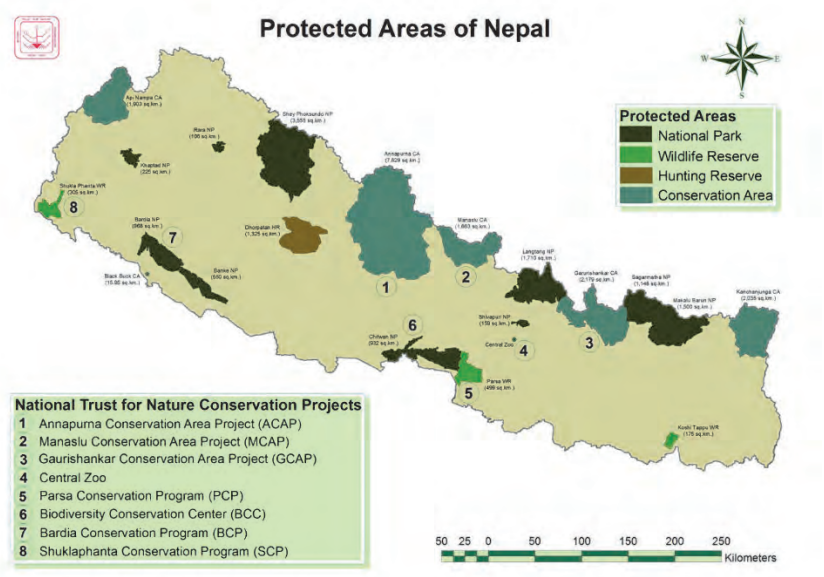


Figure 2-1 Protected Areas in Nepal

2.1.2 Gorkha District

Gorkha District lies in Gandaki zone and has 60 Village Development Committees (VDCs) and 2 municipalities. It stretches from Chitwan District (Mugling) in the south to the Tibetan border with elevation ranging from 488 to 8,156 EL-m (Mt. Manaslu). The climatic condition in Gorkha also

changes with altitude and comprises of all the climatic zones from Upper Tropical in the south to Nival in the north. The temperature ranges from maximum of over 35 °C in upper tropical region to minimum of around -10 °C in Nival zone with the average maximum of 20 °C and average minimum of about 4 °C. The total average annual rainfall in Gorkha is 1,400 mm with about 80 % of the annual precipitation occurring during the monsoon season.

Gorkha District is drained by large number of rivers, their tributaries and sub-tributaries, which are both perennial and seasonal in nature. Trishuli, Budigandaki, Marshyangdi, Daraundi and Chepe Rivers are major perennial and snow feed rivers. Despite richness of water resources in Gorkha, water is not sufficiently available for drinking and irrigation purpose due to terrain characteristics, which has become worse after the 2015 Gorkha Earthquake in upper two-third part of the district, especially in Daraundi catchment. Furthermore, the major rivers can be sources of large hydropower projects.

Geologically speaking, Gorkha District falls both in the Lesser Himalaya and the Higher Himalaya. The Lesser Himalaya is made up of sedimentary, metamorphic and igneous rocks, which are highly folded, jointed and faulted and have developed complicated geological structures. The Higher Himalaya rocks are fresh and hard and exhibit high mountain ranges with steep-very steep slopes. The epicentre of the 2015 Gorkha Earthquake was located at the northern edge of the Lesser Himalaya. Because of the climate, topography, accessibility and presence of fertile soil, most of people live in the Lesser Himalayan zone.

Gorkha District has river valleys, hills, middle mountains (midland) and high mountains. It is a river terrace made by the Marshyangdi River. Mountain slopes are composed either of bare bedrock or, more commonly, of bedrock mantled by thick to very thick unconsolidated soil cover. Physical weathering of rocks in the northern part of this district is relatively high because of the daily high temperature difference, along with freeze. Soils in the lower slope of river valleys of Budigandaki, Daraundi and Chepe Rivers and their tributaries consist of alluvial soils, whereas mountain soils are either residual or colluvial or their combination.

Landslides are a common phenomenon in this district, especially in monsoon rain season. In addition, the 2015 Gorkha Earthquake triggered widespread landslides in more than three-fourth part of Gorkha in the north and damage, destruction and casualties related to them during and after the quake were highest among the affected districts.

Pollutants in soil, water and air affect environment in different ways. Chemical fertilizers have becoming a source of soil pollution in several VDCs in the south. Open defecation has been a major concern after the earthquake as in most of the areas toilets have been damaged or destroyed. Leak from toilet/septic tank or their direct discharge to rivers (e.g., Budigandaki, Daraundi and Chepe Rivers) and their tributaries and sub-tributaries close to settlements, have been pollution sources to water. VDCs are not seen having problem with solid waste but Prithivinarayan Municipality is facing pollution issues as it has not developed proper disposal site and everything they produce as

wastes are disposed to a stream banks close to Laxmi Bazar. Burning of waste in this site is polluting air and liquid waste (lichen) generated from the solid waste is polluting water sources. Air pollution is recognized in the form of dusts produced by vehicles on the earthen roads throughout Gorkha. Crusher industries along the Daraundi valley blow dusts into the atmosphere and pollute air around them to some extent.

This district has 66,458 households and 271,061 populations in 60 VDCs and 2 municipalities. It has 44 caste/ethnic groups having Gurung as the largest group followed by Hill-Brahmina, Chhetri and Magar. There are 7 Dalit groups with their total population 44,113 that comes to 16% of the total district population in 2011 Census. 8 caste ethnic groups are reported as marginalized groups. Chepang is the near to extinguished group is in the district. The average family size is 4.1 while the sex ratio is 80.68. 65 % of total district population are economically active. Major livelihood source for 80 % of the district people is agriculture.

Out of total area of this district, about 29 % area is barren land. Forest covers about 27 % area followed by agricultural land (19 %), grass (14.64 %), and bush (5.76 %). Snow and glacier cover about 3.5 % area of the district. The northern part of the district has parts of Manaslu Conservation Area. Out of the total district area, 29 % is covered by barren land followed by forest (27 %), agricultural land (19 %) and grass land (14.6 %). One third of the total area in the northern part is covered by Manaslu Conservation Area.

The averaged district-wide population density is of 74. The northern VDCs are sparsely populated and thus have lower population density. The south-central part of the district has higher density particularly in municipalities. The district is fairly accessible except few northern VDCs. The southern central part has better road access. Although gravel roads access to almost all VDCs located in the southern part, the average walking time distance to nearest road is 2 hours in central part while it takes up to 4 hours to people living in the northern part of the district to reach to the nearest road.

2.1.3 Lalitpur District

Lalitpur District exists in the Mahabharat Range and Kathmandu Valley, and its altitude varies from close to 500 EL-m to 2,800 EL-m. About 9.9 % of this district in the south lies in the Upper Tropical climate zone (300 - 1,000 EL-m altitude), 79.3 % of the district lies in Sub-tropical (1,000 - 2,000 EL-m altitude) climate while Temperate (2,000 - 3,000 EL-m altitude) climate represents about 3.80 % of this district. The maximum temperature in the hottest part of the district goes over 30 °C and the Phulchoki area during winter extreme experiences temperature below freezing.

The meteorological record shows that the total average rainfall in Lalitpur is about 2,000 mm. The rivers and streams originating from the Mahabharat Range drain through Lalitpur District. They are perennial and seasonal in nature and display variable discharge annual cycle. Geologically, this district belongs to the Lesser Himalaya. The Lesser Himalaya in Lalitpur is the Mahabharat Range

and it consists of varieties of limestones and quartzites, slate and some granite. The main lithologic units are Phulchoki Formation (dolomite and crinoidal limestone), Chitlang Formation (slate, quartzite and limestone), Chandragiri Formation (limestone and quartzite), Sopyang Formation (slate and limestone), Tistung Formation (sandstone and limestone) and Markhu Formation (marble, schist and quartzite. Narayanthan Granite crops out in the south of Lalitpur. The rocks in the Mahabharat are fresh and hard and they develop high mountains and steep slopes. While soil in Kathmandu Valley is Fluvio-lacustrine, a mixture of lake and river deposits. Lower slops in river valleys consist of alluvial soils, which include boulder, gravel, sand, silt and clay in different proportions. Mountain soils are either residual or colluvial or their combination. Mountain slopes and foothill zones are dominated by colluviums, whereas uplands have residual soils.

As the district is one of the valley districts, its northern part within the valley is primarily covered with built up area. The southern part of the district has more forest land. Still 50 % area is covered by district followed by cultivated land (38 %), and bush (8 %).

The average population density of the district is of 1,180 persons/km^2 and it varies from 81 to 10,501 persons/km^2. Lalitpur sub metropolitan city has the highest population density (10,501 persons/km^2) followed by newly declared municipalities, i.e., Mahalaxmi (2,364 persons/km^2), Karyabinayak (1,782 persons/km^2), Bajrabarahai (1,044 persons/km^2), and Godavari (863 persons/km^2). VDCs in the southern part of this district have lower population density (e.g., below 100 persons/km^2).

The district has 109,789 households and 468,132 populations in 19 VDCs and four municipalities and one sub-metropolitan city. It has 91 caste/ethnic groups and Newar is the largest group followed by Tamang, Brhamin-hill and chettri. It was reported that 13 Dalit groups with their total population 14,347 exist in this district. The average family size is 4.26 while the sex ratio is 103.49. Out of total, 67 % people are economically active. The major livelihood base of 50 % of the entire population is agriculture.

The road accessibility is very good within Kathmandu Valley portion of the district. However, the southern part is still having poor road network. Chapagaun-Gottolekhel-Chandanpur road links the southern part and main road linking valley to the southern part of the district.

2.1.4 Rasuwa District

Rasuwa is a northern mountainous district, with its altitude ranging from little less than 1,000 EL-m to higher than 7,000 EL-m, and like in other parts of Nepal, the climatic condition in Rasuwa changes by the altitude. As the altitude range suggests, it has all the climates from Upper Tropical to Nival and Transhimalayan climate in the northernmost part. About 1.2 % of the district area in the south lies in the Upper Tropical climate zone (300 - 1,000 EL-m), 4.4 % in Sub-tropical climate (1,000 - 2,000 EL-m). Temperate zone (2,000 - 3,000 EL-m), Sub-Alpine zone (3,000 - 4,000 EL-m) and Alpine zone (4,000 - 5,000 EL-m) represent about 20.8 %, 20.0 % and 11.0 % of this district, respectively. Nival climate (above 5,000 m) covers about 32.9 % of the district. Transhimalayan climate covers

about 2.0 % area in the northernmost part. Betrawati area represents the hottest parts of the district with maximum temperature of over 27. The Nival and Transhimalayan climate zones receive abundant snowfall and undergoes as low as -18 during winter extremes. The total average annual rainfall is about 1,000 mm. The winter precipitation in the form of snow is due to the Mediterranean wind that brings moistures from the west.

Geologically, Rasuwa District belongs to the Lesser Himalaya and the Higher Himalaya. The Lesser Himalayan rocks are predominantly greenish grey gritty phyllites, gritstones and white quartzite. Large part of this district belongs to the Higher Himalaya and the rocks in the Higher Himalaya are garnet-biotite gneiss, kayanite-biotite gneiss, garnetiferous mica schist, augen gneiss, quartzite and some marble, and this combination of rocks are known by Himal Group. The Main Central Thrust (MCT), which separates the Lesser Himalaya from the Higher Himalaya, is the major geological structure in this district and it passes to the east through Somdang and goes down to Syabrubesi and continues further down. The type of soil in the lower slopes of river valleys of Trishuli and Betrawati Rivers have alluvial soils and their composition consists of boulder, gravel, sand, silt and clay in different proportions. Mountain soils are either residual or colluvial or their combination. Mountain slopes and foothill zones are dominated by colluviums, whereas uplands have residual soils. More than half of the district in the north consists morainic soil (note: soil deposited by past glacier).

A larger proportion of the area (41 %) live in barren land, followed by forest (25 %), grass land (11 %). Only 8 % live in the agricultural land. About two third area of this district in its eastern and southern part is covered by the Langtang National Park (LNP) and its buffer zone.

Population density has higher ranges, i.e., varies from 1 to 473 persons/km^2. The average population density of the district is 29 persons/km^2. Southernmost VDCs have higher population density, and tend to decrease with altitude increasing.

This district has 9,741 households and 4,300 populations in 18 VDCs. It has 45 caste/ethnic groups having Tamang as the largest group followed by Kumal, Brahmu and Brahmin-hill. Three Dalit groups with their total population 1,311 that comes to 3 % of the total population of the district is reported in 2011 Census. The sex ratio of the district is 98.4. 65.6 % of entire district population are economically active. Major livelihood base is agriculture (70 % of people).

Out of total 18, 14 VDCs have road access. Most of these roads are dirt roads and muddy and rough. The southern part of the district is relatively better accessible as district road passes through and reached to Syaphrubesi via Dhunche.

Rasuwa District is very rich in term of flora and fauna diversity as well as micro-habitats created by diverse topographies. The District Forest Office is the main institution for the forest management in this district. Major area (57 %) of this district lies in LNP and its buffer zone. Forests within 7 VDCs as well as forest inside the buffer zone of Rasuwa have been managed by the District Forest Office, also. Remaining 11 village development committees are inside LNP.

Forest of Rasuwa district lies between tropical to alpine vegetation type. LNP holds more than 1,000 floral species and 489 faunal species. Among them, 21 plant species are endemic to this park and 8 mammal species and 2 bird species are under the government protection of Nepal.

2.1.5 Nuwakot District

Nuwakot District has 61 VDCs and one municipality and stretches from Dhading and Kathmandu Districts in the south to Rasuwa District in the north with elevation ranging from lower than 800 EL-m to higher than 5,000 EL-m. The climatic condition of the district changes by the altitude and has all climates from upper tropical in south to nival in north. The temperature ranges from maximum of 35 °C in Trishuli area to minimum of around -4 °C in the northern part of Ghangphedi VDC. The average maximum is about 24 °C, while average minimum temperature is about 8 °C. The total average annual rainfall is over 1,600 mm.

Nuwakot District is drained by various perennial/seasonal rivers and their tributaries and sub-tributaries. The Trishuli River is the main drainage of the whole Nuwakot District. It is snow-fed and one of major rivers in Nepal and has the oldest hydropower in Nepal. It has number of tributaries and the Betrawati River is the only snow-fed tributary. The central-south part of this district has relatively better irrigation system compared to neighboring districts.

Geologically, Nuwakot District entirely belongs to the Lesser Himalaya in which rocks are predominantly greenish grey gritty phyllites, gritstones and white quartzite. It has river valleys, hills, middle mountains (midland) and high mountains in the north. Mountain slopes are generally moderately steep in the lower part and steeper in the upper part. In some VDC, those nearby mountain slopes have become damaged with 2015-Gorkha Earthquake. Physical weathering of rocks in the northern part of this district is relatively high because of the daily high temperature difference, along with freeze–thaw and frost action, which promote expansion and contraction of rocks. Landslide is a common phenomenon in this district, especially in the Trishuli, Betrawati Rivers and TadiKhola and their tributaries and sub-tributaries. Besides the monsoon rain, the 2015-Gorkha Earthquake triggered landslides in some areas and aggravated the already existing slides. Compared to Gorkha District, Nuwakot District has small number of landslides and relevant slope instabilities.

Chemical fertilizers have become major source of the soil pollution. Open defecation has been a major concern after the earthquake. Solid waste disposal and burning of waste in left bank of Trishuli River is polluting water and air. Furthermore, dusts produced by vehicles and crusher industries on the bank of Trishuli River are worsening the local air pollution. Soils in the lower slope of river valleys consist of alluvial soils and these alluvial soils along the river valleys helps in major grain production of Nuwakot District.

Nuwakot District extends from the low to the high elevation. Agriculture, forest, bush and grass are the major land cover types that occupy 54 %, 23 %, 11 % and 6 % area of the district, respectively.

This district has a part of LNP and its buffer zone in the northeastern part and Shivpuri National Park on the southeastern part of the district.

The average population density of the district is 233 persons/km^2. VDCs in the central part has higher population density (i.e., above 300 persons/km^2), and the southern part has 200 – 300 persons/km^2. The eastern and western part of the district has 100 – 200 persons/km^2 and the northern part has lower population density (i.e., below 100 persons/km^2).

The district has 59,215 households and 277,471 populations in 61 VDCs and one municipality. It has 36 caste/ethnic groups and Tamang is the largest group followed by Brahmin-hill, and then, chettri. The population of Dalit in this district is 19,518. The sex ratio in the district was 91.78. Out of total, 67 % people are economically active. Major livelihood base (77 % of district population) is agriculture.

2.1.6 Dhading District

Dhading District has 46 VDCs and one municipality. It stretches from Chitwan and Makawanpur Districts in the south to the Tibetan border in the north with altitude ranging from lower than 600 EL-m to higher than 6,000 EL-m. The climatic condition of this district changes by the altitude and has all climates from upper tropical in south to nival in north. The temperature ranges from maximum of over 33 °C in upper tropical region to minimum of around -6 °C in nival zone. The total averaged annual rainfall is of 1,350 mm. Dhading District is drained by large rivers and their tributaries and sub-tributaries, which are both perennial and seasonal in nature. Trishuli and Budigandaki Rivers and AnkhuKhola are the major perennial and snow-fed rivers of Dhading. Despite abundance in water resources, the irrigation system is not sufficiently developed and people still need to walk long distance for the drinking water. After the 2015-Gorkha Earthquake, the situation has become worse since most of spring sources have been dried up.

Geologically, Dhading District falls both in the Lesser Himalaya and the Higher Himalaya. The epicenter of the 2015 Gorkha Earthquake was located at the northern edge of the Lesser Himalaya. Southern 45 VDCs and Nilkantha Municipality, which altogether accounts two-third of this district, lies in the Lesser Himalaya. Except the carbonates, the Lesser Himalayan rocks are mostly soft and moderately to highly weathered and develop low topographic reliefs of the midland zone. Due to presence of fertile soil most of the people live in the Lesser Himalayan zone. The Higher Himalayan rocks are fresh and hard and exhibit high mountain ranges with very steep slopes. Physical weathering of rocks in the northern part of this district is relatively high because of the daily high temperature difference, along with freeze–thaw and frost action, which promote expansion and contraction of rocks.

Natural disasters such as landslide, flood, glacial lake outburst floods (GLOF), earthquake, erosion (surface and river bank cutting), siltation, drought, forest fire, hail, snow fall, lightening and others are common in Nepal. Dhading District have experienced most of those natural disasters and their

VDC-wise occurrences were reported during the baseline survey. For example, during monsoon season, water-induced disasters such as landslides, significant enough to wipe out villages, is common disaster in this district, especially in the Budigandaki, Ankhu, Malekhu and their tributary valleys during monsoon season. Soil slopes in some areas are chronically unstable and, in places, the whole mountain appears to be moving down; 2015-Gorkha Earthquake triggered more sliding. Floods are of common occurrence along the Budigandaki River and AnkhuKhola during monsoon season. Some VDCs have cases of drought, hail, lightening and forest fires.

Chemical fertilizers have become major soil polluting source in several southern VDCs. Open defecation has been a major concern after the earthquake as in most of the areas toilets have been damaged or destroyed. VDCs have not seen big problem with solid waste treatment, but currently, Nilkantha Municipality face this waste treatment issues since well managed waste collection system is not established yet. Air pollution is recognized in the form of dusts, produced by vehicles on the earthen roads. Crusher industries and sand mining activities on the banks of the Trishuli River along the Prithivi Highway and along the tributary valleys blow dusts. Budigandaki, Ankhu and other tributary and sub-tributary valleys consist of alluvial soils which include boulder, gravel, sand, silt and clay in different proportions. Mountain slopes and foothill zones are dominated by colluviums, whereas uplands have residual soils (in most cases it is categorized as the red soil).

This district has 73,842 households and 336,067 populations in 46 VDCs and 1 municipality. It has 44 caste/ethnic groups having Tamang as the largest group followed by Brahmina-Hill, Chhetri and Newar. Sarki, Kami, gaine and Badi are major Dalit groups. 8 caste ethnic groups are reported as marginalized groups. Chepang is almost-extinct ethnic group having 14,474 populations. The average family size is 4.5 while the sex ratio is 88.55. Out of total district population, 69.1 % of people are economically active. The major livelihood base (75 % of population) is agriculture.

Cultivated land covers about 41 % of the total district area, and is mostly concentrated in the south-eastern, central and northern central part of the district. About 35 % of land area is forest, almost uniformly distributed in the district. Some exceptions are the and in northern parts there is barren land. Similarly, bush covers 11 % followed by barren land (6.63 %). Out of the total area, 41 % area is covered by agricultural land followed by forest area (35 %), bush (11 %) and barren land (6.6 %). The south eastern and norther central part the district has is more agricultural land whereas forest is somehow uniformly distributed in the district.

The average population density of the district is 176 persons/km^2 and it is ranges from 15 to 587 persons/km^2. VDCs with higher population density tend to be located along the highway and the municipal area. The south eastern and central part of the district has higher population density. The northern VDCs are sparsely populated and thus lower population density.

Dhading District has a good road network. The southern and central part of the district is very accessible as there are highways, district road and other roads (e.g., the Prithvi Highway,

TribhuvanRajpath, Kalu pande road). The northern most part of the district such as Jharlang, Sertung, Tipling, Ree and Lapa VDCs are still inaccessible.

2.1.7 Makawanpur District

This district is a unique having both flat lowland inner Tarai and high mountainous land and extends between 27º 10' to 27º 40' N latitude and 84º 41' to 85º 31' E longitude. It occupies 2,426 km^2 land and its altitude ranges from 166 EL-m (Rai Gaoun) to 2,584 EL-m above sea level (Simbhanjang). Geographically, 59 % of the total district land falls under Churiya or Siwalik Hills and 41 % under mid hills.

As mentioned above, Makawanpur District consists of both inner Tarai and hill regions. About 62 % of this district is covered with forest. It is also because of its some area covered by Chitwan National park and Parsa Wildlife Reserve in the south-western part of the district. Agricultural/cultivated land covers 27 % that is widely available in the south-central part and north western part of the district. In addition, sand and bush covers 5 % and 3 % area, respectively.

Population density of the district (184 persons/km^2) is similar to the national average (181 persons/km^2, 2011 Census). It ranges from 52 persons/km^2 to 591 persons/km^2 of Hetauda sub-metropolitan city. The two municipal areas, southern and central part of the district have high population density, compared to VDCs in other parts of the district.

The district has 86,127 households and 420,477 populations in 35 VDCs and one municipality and one sub-metropolitan city. It has 64 caste/ethnic groups and Tamang is the largest group followed by Newar and Chepang. The sex ratio in the district is 96.67. 65 % people of total district population are economically active. Major livelihood base for 52.8 % of district people is agriculture.

Makawanpur District is unique due to connecting link between low lands inner Tarai to Midland high Himalayan range. A short spreading range has lower tropical to temperate type of ecological zones with distinct biota into each. Part of this district lays in the buffer zone of Chitwan National Park and Parsa Wildlife Reserve. This district acted like a corridor for wild animals and birds. 59 % of the district land is the upper tropical type.

In total, 1,088 user committees are responsible for the management of 73,268.5 hectares forest in this district. Among them the district forest office handed over 397 community forests, 221 privates and 5 religious forests to local communities. The district forest office also handed over 401 Leasehold forests to local user groups and Parsa Wildlife Reserve and Chitwan National Park handed over 64 buffer zone leasehold forests. There are 841 plant species under 389 herbs, 189 shrubs, 191 trees and 72 climbers reported from this district. Big keystone species such as Royal Bengal Tiger, Pantheratigris; Gaur, Bosgaurus; wild elephant, Elephus maximus and Hyena, Hyaena are symbolic to both conservation areas are also nearest home range of this district.

Makawanpur District has good road accessibility with 743.87 km road length. The major highways such as Mahendra Highway, TribhuvanRajpath, and KantiRajpath pass through the district that link Kathmandu Valley to the southern Tarai of Nepal.

2.2 Environmental Legal Framework and Organizations

2.2.1 Key Environmental Codes in Nepal

There are several key environmental and social legal codes, enacted in Nepal, that shall be well-addressed within the proposed reconstruction project. The outline of those legal codes is described separately as follows,

1) The Constitution of Nepal

The Constitution has guaranteed every person the right to live in a clean environment as a fundamental right. The Government of Nepal (GoN) has made necessary arrangements to maintain clean environment through different environmental laws and regulations. The State has also vowed to give priority to the protection of the environment, prevent further damage due to physical development and increase the awareness of the general public about environmental cleanliness. The State has also promised to make special arrangements for protection of rare wildlife and their habitat. Protection of forest, vegetation and biodiversity, its sustainable use and for equitable distribution of the benefit derived from it, are other constitutionally recognized legislations.

2) The Environmental Protection Act of 1997 (EPA96) and Environmental Protection Regulation of 1997 (EPR97)

EPA 96 is notable here with the intention to minimize the adverse impacts of environmental degradation, and to protect environment keeping in mind sustainable development. EPR97 also has mentioned that any development project, before implementation, is required to pass through environmental assessment, which may be either IEE or an EIA depending upon the location, type and size of the project. In Act No. 24 of EPA96 there is legal provisions to maintain clean and healthy environment by minimizing, as far as possible, adverse impacts likely to be caused from environmental degradation on human beings, wildlife, plants, nature and physical objects; and to protect environment with proper use and management of natural resources, taking into consideration that sustainable development could be achieved from the inseparable inter-relationship between the economic development and environment protection.

There is the provision of prevention and control of pollution. EPA96 says that nobody shall create pollution in such a manner as to cause significant adverse impacts on the environment or likely to be hazardous to public life and people's health, or dispose or cause to be disposed sound, heat radioactive rays and wastes from any mechanical devices, industrial enterprises, or other places contrary to the

prescribed standards. There is the provision of environment inspector in EPA96. In order to effectively carry out or cause to be carried out the acts of the mitigation, avoidance or control of pollution or the acts required to be carried out in accordance with the IEE or the EIA report, the ministry may, by fulfilling the procedures prescribed by the Public Service Commission, appoint Environmental Inspectors or designate any employee to carry out functions of such Inspectors. The qualifications for the Environment Inspectors shall be as prescribed. In the act, the functions, duties and powers of the Environment Inspector have also been given.

In EPA96, there is the provision of protection of National Heritage. EPA96 also explains about environment protection area; establishment of a laboratory; establishment and operation of environment protection fund; power to constitute environment protection council. Likewise, there is the provision of Concession and Facility, formation of different committees, compensation, punishment, appeal, delegation of power and power to frame rules as well.

3) Forest Act 1993 and Forest Regulations 1995

This act and regulation are another notable legislation related to environment in Nepal. Under the Environmental legal framework, the role of forest rules is also equally important. In the forest rules 1997, considering the environmental protection some provision such as collection, sale and distribution of the forest product; provisions relating to the sale and distribution of timber and firewood; license for grazing the animals have been explained clearly to protect environment and bio diversity.

This act recognizes the importance of forests in maintaining a healthy environment. Therefore, Section 49 of this act prohibits the reclamation of land, the setting of fires, grazing, removal or damage to forest products, the felling of trees or plants, wildlife hunting and the extraction of boulders, sand and soil from the national forest without prior GoN's approval.

Section 68 of the Forest Act, 1993 empowers GoN in case of no alternatives, to use the Forest Area for the implementation of the project if it is considered as a national priority by GoN. If a sub-project is proposed on forest lands. If there are no significant adverse effects on the environment while conducting such a plan, GoN may give assent to use any part of the Government Managed Forest, Community Forest, Leasehold Forest or Religious Forest for the implementation of such a plan or project. According to Clause 68 (2), if any people or communities experience loss while the land is in use, GoN is required to compensate the loss (MoSTE, 2006).

4) Solid Waste Management Act 2011 and Solid Waste Management National Policy 1996

This act and policy are another important environmental related legislation formulated for the systematic and effective management of solid waste by minimizing the solid waste at source, re-using, processing or disposing of the solid waste, and to maintain the clean and healthy environment by minimizing the adverse effects of the solid waste in the public health and environment. Solid Waste

Management and Resource Mobilization Act 1987 (with amendment in 1992) describe the procedures for disposing solid waste. It categorizes harmful hazardous wastes and provides information on several controlling measures. There is provision to appoint inspection officer for checking and monitoring solid waste control and management. The inspector has authority to take action against the polluter or polluting agency. Disposal of battery and electronic goods can be carried out on the basis this act but it does not provide specific guidelines for the disposal of such wastes. Auctions are the procedure usually followed to dispose such wastes.

5) The Labor Act, 2048 BS (1992)

This act regulates the working environment and deals with occupational health and safety aspects. **Local Self Governance Act (LSGA), 2055 BS (1999)** empowers the local bodies for conservation of soil, forest and other natural resources. Sections 28 and 43 of the Act provide the Village Development Committee (VDC) a legal mandate to formulate and implement programs related to protection/conservation of environment during the formulation and implementation of a district level plan. This act provides more autonomy to District Development Committees (DDC), Municipalities and VDCs. The LSGA empowers the local bodies for the conservation of soil, forest and other natural resources and implements environmental conservation activities. Sections 28 and 43 of the Act provide the VDC a legal mandate to formulate and implement programs related to protection of environment during the formulation and implementation of a district level plan.

6) Land Act 1964

The role of this act is also equally crucial for protecting environment. In Chapter 9A of this act considering the issue of environment, there is the provision relating to land-use, control of land fragmentation, and plotting (Chaklabandi). The appropriate land fragmentation and plotting is important to protect environmental degradation such as landslide, soil erosion etc. In Plant Protection Rules, 2010 (the elaborated version of Plant Protection act, 2007), some key provisions like procedures to destroy plants, quarantine, pest free production area, pest free area has been explained properly to protect environment.

Prior to 1990, there was no constitutional obligation for GoN to pay compensation for the acquisition of personal property. The right to receive compensation was therefore, not a fundamental right. Article 17 of the Constitution of the Kingdom of Nepal (1990), however, established the right to property as a fundamental right, stating that 'no person shall be deprived of his property save in accordance with the law'. Article 25 (1) establishes the right to property for every citizen of Nepal. Article 25 (2), states that except for social welfare, the state will not acquire or exercise authority over individual property. According to the Article 25 (3), when the state acquires or establishes its right over private property, the state will compensate for loss of property and the basis and procedure for such compensation will be specified under relevant laws. The basis of compensation and the

procedures for delivering compensation for any property acquired by the State are therefore, prescribed by law. Land and asset acquisition is undertaken within the framework of the Land Acquisition Act (for permanent land acquisition and the Public Road Act (for temporary land acquisition). The 1978 amendment to the Public Road Act, to be described later, was promulgated to ensure uniformity with the Land Acquisition Act, to be described later. The follows are main legal framework related to the land acquisition of Nepal.

7) Land Acquisition Act (1977)

This Act empowers GoN to acquire any land for public purposes or works on payment of compensation. The acquisition and compensation of privately owned assets are undertaken according to a formal procedure consisting of (a) initial procedures, (b) a preliminary investigation process, (c) an acquisition notification, (d) a compensation notification and (e) appeal procedures.
Compensation Fixation Committees (CFC) is established at district level to ascertain compensation rates for land and other assets. Compensation is paid (a) for damages caused as a result of investigations during the preliminary investigation process and (b) for land and assets permanently acquired by the project (including standing crops, trees and houses). Compensation is paid in a cash lump sum although title holders who have lost all of their landholdings may be given replacement land, if available. Title holders are required to submit compensation claims or complaints within a specified period after the land acquisition notice has been issued by the local authority (Chief District Officer). Compensation for land is paid after the determination of rates and verification of the list of entitled applicants by the CFSC.

8) Public Road Act (1974)

This act empowers the Department of Roads (DoR) to acquire any land on a temporary basis (for storage facilities, construction camps, etc.) during road construction and upgrades. The temporary acquisition of land containing any buildings (e.g. houses, sheds, temples and schools) is avoided where possible. The Act also empowers the DoR to 'lift earth, stone or sand from any adjoining land' during construction and upgrading works but does not provide for the leasing of land. However, the DoR is required to pay compensation for any damages caused to buildings, crops and trees where the farming activity of the landowner is interrupted or the landowner incurs expenses to restore the land after its return.

9) Land Reform Act (1964)

The provisions of this act that relate to the maximum permitted size of individual land holdings also apply to land acquisition since a landowner may not be compensated for more land than he is entitled to under this act. In 1996, this act was amended and this step was considered revolutionary in that it changed the existing system of land tenure by establishing the rights of tenants and providing

ownership rights to the actual tiller. Different ceilings of agricultural land were set for Kathmandu Valley (50 ropani), hills and mountains (80 ropani) and the Tarai (25 bigha). It is noted that one bigha is the equivalent of 0.66 hectares while one ropani equals to 0.05 hectares. In addition to this ceiling, for houses and kitchen gardens, a family may own 8 ropani in the Kathmandu Valley, 16 ropani in hills and mountains and 3 bigha in the Tarai.

This act also specifies compensation entitlements for registered tenants on land sold by the owner or acquired for development purposes. The provisions of the Land Acquisition Act are consistent with those of this act of 1964, namely, that a registered tenant is entitled to 25 % of the total compensation. However, the fourth amendment of the Land Reform Act in 1996 increased the tenant's entitlement to 50 %.

10) Guthi Corporation Act (1976)

Land acquisition must also comply with the provisions of this act. Section 42 of this act states that Guthi (i.e., religious trust land) acquired for a development must be replaced with other land rather than compensated in cash.

11) Water Resources Act (1993)

The main objective of this act is to make legal arrangements for determining beneficial uses of water resources, preventing social, environmental and other hazardous effects to water resources, and also for keeping these resources free from pollutions. There is a provision in Section 16 for land acquisition from GoN or the public for the construction of water resource projects. If the project is undertaken by the GoN or a licensee, GoN may forbid the use of a house or land located in the area where the construction work is being performed or within a prescribed distance from the construction work by any other person for any reason. GoN or licensee is, however, required to pay compensation, as prescribed under Land Acquisition Act, to the concerned person for any resultant damage or loss.

12) Local Self Governance Act (1999)

Part 5 of Clause 258 states that if a local governing body needs to acquire land to carry out any development and/or construction work within its area, it can acquire the land required as long as it follows the requirements of the prevailing law and provides compensation to the concerned landowner for the land.

13) Town Development Act (1988)

This act provides the legal basis for implementing town development plans. This act empowers both central and local government agencies to carry out land pooling projects. The Local Self Governance Act also allows municipalities and village development committees to carry out town development plans but is not as comprehensive as this act. According to Clause 12.1.1 of this act, the government

can acquire pieces of land so that it can integrate them and add facilities and services. The Town Development Committee can then reimburse its investment by selling the developed plots of land and transferring the remaining land to the original landowners. In Clause 5.2 of the Town Planning Directives (2005), there is provision to distribute the plots to marginal and excluded communities albeit with certain conditions.

14) Act Relating to Reconstruction of the Earthquake Affected Structures, 2015 (2072) (Reconstruction Act 2015) and Rule of Relating to Reconstruction of the Earthquake Affected Structures, 2016 (2072) (Reconstruction Rule 2016)

GoN has published a notice in Nepal Gazette, section 65, number 49 part 5 on 2072/12/1 B.S. (March 14, 2016), specifying this Reconstruction Act 2015 and Reconstruction Rule 2016, including re-construction environmental assessment working procedure. This Act and Rule was enacted to promote reconstruction and/or recover from the damage from the earthquake in 2015. This Act and Rule delegate authority of the environment clearance and the land acquisition of all type of land; private, public or government and trust to the NRA (National Reconstruction Authority) in order to speed up for reconstruction and/or recover project, except land compensation of trust land. For the trust land compensation, the government shall follow the regular law; Guthi Corporation Act (1976).
According to the procedure of environmental assessment of this Act and Rule, overall examination process of both IEE and EIA tend to be made simpler, more transparent and effective for the purpose of quick implementing the development and reconstruction projects. The procedure has lessened the time taken for IEE and EIA to facilitate the speedy completion of reconstruction work.

2.2.2 International conventions, protocols and treaties related to the environment

Nepal is a signatory of many international conventions, protocols and treaties related to the environment (see Table 1). Nepal signed the United Nations Framework Convention on Climate Change (UNFCCC) on 12 June 1992 during the UN conference on Environment and Development in Rio de Janeiro, Brazil. The Instrument of Ratification was submitted to the Convention Depository on 2 May 1994 and the UNFCCC entered into force in Nepal from 31 July 1994. The parties to the Convention adopted the Kyoto Protocol (KP) on 11 December 1997 in order to pursue the ultimate objective of mitigating climate change. Nepal submitted the Instrument of Accession to the Kyoto Protocol to its depository on 16 September 2005. The Protocol entered into force in Nepal from 14 December 2005.In the process of implementing the Rio Convention, Nepal has implemented various measures with respect to the UNFCC- preparing action plan to implement the Convention, issuing Clean Development Mechanism (CDM) project-approval processes to benefit from the provisions of the Kyoto Protocol, preparing the National Adaptation Program of Action (NAPA), implementing a project on strengthening capacity for managing climate change and the environment.

United Nations initiated actions towards the environment by establishing United Nations Environment Program (UNEP) in 1972 that aims to coordinate the development of environmental policy by keeping the global environment under review and bringing emerging issues to the attention of the governments and the international community for action.

Table 2-1 Status of Major International Conventions, Protocols and Treaties Related to Environmental and Social Considerations in Nepal

International agreement	Signature	Ratification	Accession	Succession	Acceptance	Provisional Application
Convention on the High Seas	29 Apr 1958	28 Dec 1962				
Optional Protocol of Signature concerning the Compulsory Settlement of Disputes	29 Apr 1958*					
Constitution of the United Nations Industrial Development Organization	11 Aug 1983	6 Dec 1983				
International Tropical Timber Agreement,1994						23 May 1997
Constitution of the Asia-Pacific Tele-community	15 Sep 1976	12 May 1977				
Convention and Statute on Freedom of Transit			22 Aug 1966			
Agreement establishing the International Fund for Agricultural Development			5 May 1978			
Convention on the Prevention and Punishment of Crimes against Internationally Protected Persons, including Diplomatic Agents			9 Mar1990			
International Convention on the Suppression and Punishment of the Crime of Apartheid			12 Jul 1977			
Convention on Transit Trade of Land-locked States	9 Jul 1965	22 Aug 1966				
Vienna Convention on Diplomatic Relations			28 Sep 1965			
Customs Convention on the Temporary Importation of Private Road Vehicles			21 Sep 1960			
United Nations Convention against Corruption	10 Dec 2003	29 Mar 2011				
Convention concerning Customs Facilities for Touring			21 Sep 1960			
Slavery Convention, signed at Geneva on 25 September 1926 and amended by the Protocol			7 Jan 1963			
Convention on the Political Rights of Women			26 Apr 1966			
Constitution of the World Health Organization					2 Sep1953	
Convention for the Suppression of the Traffic in Persons and of the Exploitation of the Prostitution of Others			10 Dec 2002			
International Covenant on Economic, Social and Cultural Rights			14 May 1991			
Agreement establishing the Asian Development Bank	4 Dec 1965				21 Jun 1966	
Convention on Biological Diversity	12 Jun 1992	23 Nov 1993				
Convention on the Prevention and Punishment of the Crime of Genocide			17 Jan 1969			
Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction	19 Jan 1993	18 Nov 1997				
Agreement establishing the Asia-Pacific Institute for Broadcasting Development	15 May 1980	11 Sep 1980				
Kyoto Protocol to the United Nations Framework Convention on Climate Change			16 Sep 2005			
Convention on the Rights of the Child	26 Jan 1990	14 Sep1990				
Montreal Protocol on Substances that Deplete the Ozone Layer			6 Jul 1994			
Vienna Convention for the Protection of the Ozone Layer			6 Jul 1994			
International Convention against Apartheid in Sports	24 Jun 1986	1 Mar 1989				

Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment			14 May 1991			
Agreement establishing the Common Fund for Commodities	7 Sep 1981	3 Apr 1984				
United Nations Framework Convention on Climate Change	12 Jun 1992	2 May 1994				
United Nations Convention on the Law of the Sea	10 Dec 1982	2 Nov 1998				
Convention on the Safety of United Nations Associated Personnel			8 Sep 2000			
International Convention for the Suppression of the Financing of Terrorism			23 Dec 2011			
Vienna Convention on Consular Relations			28 Sep 1965			
Convention on the Privileges and Immunities of the Specialized Agencies			23 Feb 1954			
Convention on the Privileges and Immunities of the United Nations			28 Sep 1965			
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade			9 Feb 2007			
Convention on the International Maritime Organization					31 Jan 1979	
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal			15 Oct 1996			
International Convention on the Elimination of All Forms of Racial Discrimination			30 Jan 1971			
United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances			24 Jul 1991			
Convention on psychotropic substances			9 Feb 2007			
International Covenant on Civil and Political Rights			14 May 1991			
Convention on the Elimination of All Forms of Discrimination against Women	5 Feb 1991	22 Apr 1991				
Stockholm Convention on Persistent Organic Pollutants	5 Apr 2002	6 Mar2007				
United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa	12 Oct 1995	15 Oct 1996				
WHO Framework Convention on Tobacco Control	3 Dec 2003	7 Nov 2006				
Intergovernmental Agreement on the Asian Highway Network	26 Apr 2004	14 Jun 2010				
International Convention Against the Taking of Hostages			9 Mar 1990			
Intergovernmental Agreement on the Trans-Asian Railway Network	10 Nov 2006	6 Mar 2012				
Convention on the Rights of Persons with Disabilities	3 Jan 2008	7 May 2010				
Convention on the International Trade in Endangered Species of Wild Fauna and Flora			18 Jun 1975			
Single Convention on Narcotic Drugs, 1961, as amended by the Protoc s ol amending the Single Convention on Narcotic Drugs, 1961			29 Jun1987			

Note: * Definitive signature

Source: JICA (2013)

2.2.3 Environmental Standards

1) Generic Standards for Industrial Effluents

MOSTE (2001) had developed "generic standards of tolerance limit for industrial effluents to be discharged into inland surface waters". According to this, the tolerance limit for BOD for 5 days at 20 is between 30 – 100 mg/L. The table below shows the tolerance limit industrial effluents:

Table 2-2 Tolerance limits for industrial effluents to be discharged into inland surface water

S. No.	Characteristics	Tolerance limit
1	Total suspended solids, mg/L, Max	30-200
2	Particle size of total suspended particles	Shall pass 850-micron sieve
3	pH	5.5 to 9.0
4	Temperature	Shall not exceed 40 ℃ in any section of the stream within 15 meters down-stream
5	Biochemical oxygen demand (BOD) for 5 days at 20 ℃, mg/L, Max	30-100
6	Oils and grease, mg/L, Max	10
7	Phenolic compounds, mg/L, Max	1
8	Cyanides (as CN), mg/L, Max	0.2
9	Sulphides (as S), mg/L, Max	2
10	Radioactive materials:	
	a. Alpha emitters, c/ml, Max	10-7
	b. Beta emitters, c/ml, Max	10-8
11	Insecticides	Absent
12	Total residual chlorine, mg/L	1
13	Fluorides (as F), mg/L, Max	2
14	Arsenic (as As), mg/L, Max	0.2
15	Cadmium (as, Cd), mg/L, Max	2
16	Hexavalent chromium (as Cr), mg/L, Max	0.1
17	Copper (as Cu), mg/L, Max	3
18	Lead (as Pb), mg/L, Max	0.1
19	Mercury (as Hg), mg/L, Max	0.01
20	Nickel (as Ni), mg/L, Max	3
21	Selenium (as Se), mg/L, Max	0.05
22	Zinc (as Zn), mg/L, Max	5
23	Ammoniacal nitrogen, mg/L, Max	50
24	Chemical Oxygen Demand, mg/L, Max	250
25	Silver, mg/L, Max	0.1

[Published in Nepal Gazette in 2058/01/17(April 30, 2001)]

Source:*www.moste.gov.np [Ashad 2071 (2014)]*

2) Air Quality Standards

MOSTE (2003) had developed "generic standards of tolerance limit for ambience air". Some of relevant parameters set by the GoN are presented in the table below. The emission from the industrial plants is monitored in accordance to the following standard.

Table 2-3 National Ambient Air Quality Standard, 2012

S. No.	Parameters	Units	Averaging time	Concentration Max	Test methods
1	TSP	$\mu g/m^3$	Annual	-	
			24-hours	230	High volumetric sampling Gravimetric Analysis

2	PM10	µg/m^3	Annual	-	
			24-hours	120	High volumetric sampler and Gravimetric Analysis, TOEM, Beta analysis
3	Sulphur Dioxide	µg/m^3	Annual	50	Ultraviolet Fluorescence, West and Gaeke Method
			24-hours	70	Same as annual
4	Nitrogen Dioxide	µg/m^3	Annual	40	Chemiluminescence
			24-hours	80	Same as annual
5	Carbon Monoxide	µg/m^3	8-hours	10,000	Non Dispersive Infra-Red Spectrophotometer (NDIR)
6	Lead	µg/m^3	Annual	0.5	High volume sampling, followed by atomic absorption spectrometry
7	Benzene	µg/m^3	Annual	5	Gas Chromatographic Technique
8	$PM_{2.5}$	µg/m^3	24-hours	40	$PM_{2.5}$ sampling gravimetric analysis
9	Ozone	µg/m^3	8-hours	157	UV spectrophotometer

Source: www.moste.gov.np *[Ashad 2071 (2014)]*

3) Indoor Air Quality Standards

During the production process, industries emit several kinds of air pollutants. As GoN has developed the indoor air quality standards, these standards are expected to be maintained by the industries. The following table shows the government endorsed indoor air quality standards to be followed.

Table 2-4 National Indoor Air Quality Standards, 2009 (Max Concentration)

S. No.	Pollutants	Level	Average Time
1	Particulate Matter (PM_{10})	120 µg/m^3	24-hour
		200 µg/m^3	1-hour
2	Particulate Matter ($PM_{2.5}$)	60 µg/m^3	24-hour
		100 µg/m^3	1-hour
3	Carbon Monoxide (CO)	9 ppm (10 mg/m^3)	8-hour
		35 ppm (40 mg/m^3)	1-hour
4	Carbon dioxide (CO_2)	1,000 ppm (1,800 mg/m^3)	8-hour

ppm = parts per million by volume

Source: www.moste.gov.np *[Ashad 2071 (2014)]*

4) Vehicle Emission Standards

Similarly, MOSTE has developed vehicle emission standards. Department of Transport is expected to check emission standards based on the following standard at the time of registration and renewal of the vehicle registration.

Table 2-5 Vehicle Emission Standards for Green Stickers, effective since October 23, 2000 Petrol operated vehicles

S. No.	Types of vehicles	CO % by volume	HC (ppm)
1	Four wheelers 1980 or older	4.5	1000
2	Four wheelers 1981 onwards	3	1000
3	Two wheelers (two-stroke)	4.5	7800
4	Two wheelers (four-stroke)	4.5	7800
5	Three wheelers	4.5	7800
Gas operated vehicles			
1	Four-wheelers vehicles	3	1000
2	Three wheelers vehicles	3	7800
Diesel operated vehicles			
1	Older than 1994 A.D.	75	
2	1995 A.D. onwards	65	

Source: www.moste.gov.np *[Ashad 2071 (2014)]*

5) Brick Industry: Chimney Height and Emission Standards

Brick factories emit carbon mixed smokes and deteriorate the environment of nearby places. GoN has attempted to relocate such factories away from residential areas. It was also realized to regulate levels of emission from brick factories. MOSTE has also developed the standards for Brick Industries, their chimney height and emission standards. Brick factories are expected to maintain these standards in order to continue operation. The following table shows the chimney height and emission standards to be maintained by brick factories.

Table 2-6 Brick industry, Chimney height and Emission standard

S. No.	Types of Kiln	Suspended particulate matter (Maximum limit)	Heights of Chimney (Minimum limit)
1	Bull's Trench Kiln, Forced Draught (Fixed Chimney)	600mg/Nm^3	17 Meter
2	Bull's Trench Kiln, Natural Draught (Fixed Chimney)	700mg/Nm^3	30 Meter
3	Vertical Shaft Brick Kiln (VSBK)	400mg/Nm^3	15 Meter

Source: www.moste.gov.np *[Ashad 2071 (2014)]*

2.3 Preparation of ESMS Checklist

ESMS Checklist shall be developed in order to make the proposed school sector reconstruction project environmentally and socially sound one. The development of this ESMS checklist was initiated in August 2015 and completed in June 2016 through a series of discussion among JICA Tokyo Headquarter, JICA Nepal Office and DoE (see Table 8). Relevant ESMS implementation - related capacity development (CD) programs, to be described later, are developed based on this ESMS checklist as well as engineering results of the proposed school-sector reconstruction project.

Table 2-7 ESMS Checklist (School Sector)

	Questions	Original Response from DoE	Improvement Plan
1. Policy (environmental and social policy)			
1	Do you have any formal environmental policy or procedures? If yes, please describe them and provide appropriate documentation. If no, do you have any plan to set such policy or procedures?	Yes, we have. 1. Environmental Protection Act 1996 (EPA96) 2. Environmental Protection Rules 1997 (EPR97) 3. Act Relating to Reconstruction of the Earthquake Affected Structure, 2015 (2072) (RA2015) 4. Rules Relating to Reconstruction of the Earthquake Affected Structure (2072) (RR2015/6)	ESMS (Environmental and Social Management System) of all DoE (Department of Education) projects are conducted based on following two environmental protection codes regularly, 1. Environmental Protection Act 1996 (EPA96) 2. Environmental Protection Rules 1997 (EPR97) Besides, DoE has developed its own Environmental Management Framework (EMF) for School Sector Reform Plan (SSRP, revised February. 2015), based on EPA96 and EPR97, mentioned above. In addition to these, RA2015 and RR2015/16 was enacted and enforced in order to promote reconstruction activities related to the earthquake of 25 April 2015, including environment clearance of IEE and EIA. According to the RA2015 and RR2015/16, some of EIA/IEE categorization criteria in EPA96 and EPR97 is relaxed and the clearance process and time is due to streamline. This project shall be implemented under the RA2015 and RR2015/16 and EMF apply to the internal environmental clearance process of DoE. Under the JICA-financed project, DoE will not select those sub-projects where land acquisition and involuntary resettlement will occur, and thus JICA-financed sub-projects are likely to have limited or minimal environmental and social environmental impacts. On the other hand, in the longer time framework, DoE may implement those sub-subjects which are required to conduct IEE/EIA study, that fall into "Category-B" under ADB Safeguard Statements and JICA Environmental Guidelines. Thus, the

			Environmental and Social Management Framework (ESMF) will be established, based on SSRP's EMF, Nepalese Environmental laws and/or regulation and each donor's environmental and social guidelines. As to the location of reconstruction, the following are guiding principles that will be adopted for the school reconstruction sub-projects. 1) The basic rule of GoN (Government of Nepal) to build the school is in original land as long as that land is safe for rebuilding and have proper land title. 2) If the original land is not safe for reconstruction and need additional land-take, then, the potential subproject will not be adopted as JICA-financed sub-projects. In addition, public consultations shall be conducted to avoid social adverse impacts to entire communities as well as SMC while establishing community-wide consensus for the school reconstruction policy prior to the implementation of school reconstruction. The Environmental and Social Management Framework will envisage such procedures. Note that Subprojects of school-sector reconstruction under ADB-funded project have already been initiated. Within this on-going reconstruction projects, intensive preliminary environmental scoping and screening have been implemented, and then, sub-projects have been selected out of those which are not required to conduct IEE/EIA study and to obtain environmental approval from either of MoE (Ministry of Education, IEE) or MoSTE (Ministry of Science, Technology and Environment, EIA) under EPA96 and EPR97 (i.e., cost less than Rs. 50 million each: see more detailed description for environmental categorization of EPR97 in the comment of Column 3). In order to guarantee the accountability of all ADB-funded school reconstruction sub-projects, MoE (Ministry of Education), issued one environmental approval letter indicating that relevant environmental clearance process were carried out based on SSRP, EPR97 and ADB Guideline and MoE concluded that all ADB-funded subprojects will be expected to cause no or negligible/minimal negative impacts.
2	Are there any types of projects in which you will not take part due to the environmental risks? (e.g., projects involving handling of hazardous wastes or endangered plants or animals).	No	Environmental risks of all subprojects are examined, based on EPA96 and EPR97, and RA2015 and RR2015/16, mentioned above. Note that development subprojects causing significant negative impacts such as "Category A"-classed ones, specified within JICA Guidelines for Environmental and Social Guidelines (hereinafter referred to as JICA Guidelines), causing large-scale resettlement, land acquisition, and /or would require EIA study, based on EPR97 and RR2015/16, are to be rejected from the subproject selection

			process, as designed specifically for the proposed Project (positive list, to be used for this subproject selection is not finalized, yet). EIA/IEE categorization criteria, specified in RR2015/16, are summarized in Clause 3 below (IEE EIA Category of Nepal).
2. Procedures (screening category classification and review procedures)			
3	Do you have any environmental procedures such as screening, categorization and environmental review? If yes, please describe.	Yes. We have 1. Initial Environmental Examination (IEE), for small projects. 2.Environmental Impact Assessment (EIA), for larger projects. 3. Environmental Management Framework (EMF) for School Sector Reform Plan (revised February. 2015), based on EPA96 and EPR97 4. Act Relating to Reconstruction of the Earthquake Affected Structure, 2015 (2072) (RA2015) 5. Rules Relating to Reconstruction of the Earthquake Affected Structure (2072) (RR2015/6)	EPA96 and EPR97, and RA2015 and RR2016 of Nepal specify relevant environmental procedures such as screening, categorization, IEE and/or EIA studies and environmental reviews processes. In addition to these, EMF provides internal procedure for DoE, DEO, SMC and MoE. For this project, under the establishing ESMF, the following review process on environment and social considerations will be taken, 1) Site Selection. Check preliminary environmental categorization based on RR2015/16 (to be described later). Then, using this categorization results, DoE shall apply for relevant environmental approvals for proposed subprojects (e.g., IEE/EIA or the case that would require no IEE nor EIA). 2) SMC (School Management Committee)-level screening; 3) Development of SMC-level ESMS; 4) Specification of minimum requirements on environment and social safeguard issues into MOU (Memorandum of Understanding between DEO and SMC witnessed by DOE; 5) Review and clearance of SMC level screening and ESMS; 6) Consultation, communication and awareness raising; 7) Implementation and monitoring of SMC level ESMS; and 8) Grievance redress mechanism. Followings are environmental categorization criteria, specified within RE2015/16 and important for the environmental clearance of the proposed subproject, **Environmental Categorization** **(1) Protected Area** 1) Any reconstruction projects of earthquake-damaged schools with environmental approvals issued already before earthquake (located inside of protected area) are exempt for neither of IEE nor EIA study. It is noted that same type of school structure shall be established for this exemption. 2) Any reconstruction projects of earthquake-damaged schools without environmental approvals issued before earthquake (located inside of protected areas) shall conduct either of IEE or EIA study. **(2) Construction Cost** According to RR2015/16, No17, Appendix 1, Notice 1, any reconstruction projects with the cost between Rs 150 million and Rs 250 million requires IEE study. No IEE is required

			for any reconstruction projects with the cost less than Rs 150 million whereas EIA is required for any reconstruction projects with the cost more than Rs 250 million. It is noted that any reconstruction projects with the cost less than Rs 150 million, located inside of protected areas such as conservation areas and/or community forests would require IEE studies. **(3) Earthwork** There is another categorization clause in RR2015/16, as follows, No IEE is required for any reconstruction projects with soil cutting and/or filling less than 20,000.00 m^3. Otherwise, IEE is required.
4	Please describe how you ensure that your subproject companies and their subprojects are operated in compliance with the national laws and regulations and applicable JICA's requirements.	The government permission for IEE and EIA as per acts and rules are taken for the approval of the projects.	In the procedures described above about the Environmental and Social Management Framework, the following assurance to the compliances to national regulations and JICA's requirement will be made by the environmental section, to be set up at both central (DoE) and district levels (more detailed description for this new environmental section is summarized in column 8). 1) Site Selection and Initiation of Application of Environmental Approvals. Site Selection for proposed school reconstruction subprojects will be conducted. Then, relevant environmental approval application will be conducted by DoE, based on preliminary environmental categorization results, based on RR2015/26 (e.g., IEE/EIA) while instructing relevant both DL-PIU and SMC to initiate environmental and social screening process. Note: The site selection for proposed school reconstruction subprojects of Batch 1 was already conducted by DoE, DEO and SMC, based on RR2015/16. 2) Screening Stage SMC level screening will be implemented, identifying the potential risk in environment and social consideration such as forest resources, landslides and erosion, and exclusion of vulnerable groups. Upon this screening process, relevant directions for proper environmental and social consideration, to be implemented for school recovery projects, will be determined in compliance with relevant laws and guidelines. 3) Implementation Stage Minimum standards will be highlighted in the MoU between SMC and DEO with the DoE including earthquake resilience, sanitation facilities, entitlement of valid environmental license for school facilities before earthquake, entitlement of land certificate for school facilities, geographical relationship with environmental reserves and/or community forests and others. The review process of ESMS will be turned

			among SMC, VDC, DL-PIU and CL-PIU. Also, in order to timely and effectively receive the claims from the beneficiaries, grievance redress mechanism will be established including SMC, VDC grievance management committee, district level grievance management committee and central grievance management and policy reform recommendation committee. It is noted that relevant environmental approval, issued by NRA, shall be officially obtained prior to implementation of subprojects. 4) Monitoring Stage Periodic site monitoring will be implemented by DL-PIU and DL-PIU will prepare the monitoring report. CL-PIU will consolidate this report and submit the quarterly report to MOE and JICA. CL-PIU will be responsible for overall compliance with existing environmental regulations and guidelines.
5	How are environmental considerations taken into account in the credit review and approval process for project loans or equity investments?		N/A
6	How are environmental issues taken into account in deciding whether to offer or extend commercial credit, working capital finance, trade finance, payment services and other financial services to a company?		N/A
3. Organization and Staff			
7	Please provide us with the organization chart of your Environmental and Social Management System (ESMS).	According to EPA96 and EPR97. Ministry of Education (MoE) to approve the IEE report submitted by Project proponent, and Ministry of Science, Technology and Environment (MoSTE) to approve the EIA report submitted by Project proponent According to RA2015 and RR2015/16, NRA to approve the IEE/EIA report submitted by Project proponent.	See attached Sheet (file name is Appendix A).
8	Who is responsible for environmental and social management? (name/role and title)	Currently, nobody is assigned specifically. Earlier, one Environment Engineer was contracted in Physical Services Section (PSS) of DOE but she left after 2 years of working. The Department of Education (DOE), District Education Office (DEO) and School Management Committee (SMC) are the main implementing agencies.	Currently, no full-time and/or part-time personnel is assigned for the environmental governance for DoE-funded school construction projects. Qualified full-time Environmental Section Chief shall be hired and/or shall be transferred from relevant governmental organizations and/or institute in order to supervise environmental and social consideration activities of all DoE-projects. Besides, J-ESMS (see attached file, named

		Each participating school will utilize the Environmental Management Framework (EMF) while preparing the School Improvement Plan (SIP) to consider all the environmental and social issues while planning, designing and construction of education buildings under SSRP. Note: SSRP is to be completed at the end of FY 2015-16 (July 2016). It has been developed by the Government of Nepal and Development Partners including JICA and ADB, and will start as SSDP (School Sector Development Plan) from new FY 2016/2017 (July 2016).	Appendix A) will provide relevant technical advices while doing capacity building to strengthen the overall environmental governance for JICA-funded school reconstruction projects within DoE (It is noted that DoE plan to hire one permanent environmental staff (DoE has already initiated relevant advertisement and is now in the final selection process, as of April 2016).
9	Are there any staffs with training for environmental and social considerations? If so, describe.	No.	Currently, no staff with training for environmental and social considerations is assigned. Qualified full-time Environmental Section Chief shall be hired and/or shall be transferred from relevant governmental organizations and/or institute at both central and district levels in order to supervise environmental and social consideration activities of all DoE-projects. Besides, J-ESMS (see attached file, named Appendix A) will provide relevant technical advices while doing capacity building to strengthen the overall environmental governance for JICA-funded school reconstruction projects within DoE at both central and district levels.
10	Are there any technical staffs with an engineering/industry background responsible for technical analysis of credit proposals?	No	All staffs of Physical Service Section of DoE have engineering backgrounds (some of them were transferred from DUDBC). DEO has at least one engineer and one sub-engineer.
11	What experience, if any, do you have of hiring or dealing with environmental consultants?	Environmental Engineer hired by DoE under SSRP. Consultants hired for preparing National Environmental Guidelines for School Improvement and Facility Management in Nepal, 2004 under BPEP II by DoE	No experience to hire environmental consultants so far. It is informed that ADB-hired consultants sometime at DoE work within ADB-funded school sector projects. Thus, the consultant, to be employed by this Project, will provide the above mentioned capacity building measures. Within the proposed subproject, following two ESMS-related experts (1 environmental and 1 social expert) are to be assigned at Kathmandu, and ESMS-related works and coordination among JICA, MOE, DOE and others is to be conducted (see attached file, named Appendix A). At District level, another two ESMS-related experts (1 environmental and 1 social expert) are to be assigned. They will support local DOE staff to prepare the community-wide environmental scoping/ screening work. Besides them, another two staff members for ESMS Inspection team (1 environmental and 1 social background) are to be assigned by DEO. This inspection team conduct periodical on-site ESMS-related work such as monitoring, auditing and others.
12	What was the budget allocated to the ESMS and its implementation	Remuneration, Out of Pocket expenses for Travel and daily allowances etc.	The cost for consultancy services for international and national experts are borne by the principle of yen loan eligible portion, enabling the EA/IA to review the environment

	during a year? Please provide budget details including staff costs and training as well as any actual costs.		and social considerations. The necessary cost for staffs stationed in EA/IA will be covered by general budget of GoN.
4. Monitoring and Reporting (Reporting procedures and monitoring)			
13	Do you receive environmental and social monitoring reports from subproject companies that you finance?	No.	Under this Project, appropriate environmental and social monitoring reports of each subproject shall be prepared by DL-PIU. Those monitoring reports are collected by CL-PIU, and then, submitted periodically as part of their quarterly progress report prepared by the CL-PIU and will be submitted to MoE and JICA for its review.
14	Please describe how you monitor the subproject company and their subprojects' social and environmental performance.	The DEO regularly monitors/supervises implementation of the environmental works in the schools.	Please see the above number 4.
15	Is there an internal process to report on social and environmental issues to senior management?	The DEO regularly monitors/supervises of the environmental works in the schools and reports to DoE.	As described in the response of column 11, ESMS-related experts, to be hired within these subprojects, are to provide relevant technical supports to strengthen an internal process to report on social and environmental issues to senior management.
16	Do you prepare any social and environmental reports: -For other multilateral agencies or other stakeholders -E&S reporting in the Annual Report	Environmental Management Framework, Feb 2015 Available at: http://doe.gov.np/SoftAdmin/content/SSRP_EMF_P113441-_revised_March_20151.pdf	Environmental Monitoring Reports for this Project are to be periodically prepared by CL-PIU, and delivered to MoE and JICA as well as other international donors.
5. Experience (Results of the environmental and social management)			
17	Have you signed any national or international agreements or declarations concerning environmental issues?	Not by EA itself but Government of Nepal has signed in such documents.	Compliance to the signed international treaty/law will be necessary. List of international conventions and/or treaties Nepal ratifies is summarized in Table 1 of this main report.
18	Have you ever received any criticism of its environmental record? If so, what was the criticism?	No	No.
19	Do you carry out environmental audits of its properties to analyze health and safety issues, waste disposal, etc.?	No	Under the environmental and social management framework, the monitoring of ESMS will be ensured. As mentioned in Column 11, ESMS-related units are to be set up at both central and district levels. This ESMS-related unit is to conduct environmental audits on subprojects of concerns. Article 13 of EPR97 specifies the requirement of relevant monitoring and evaluation activities of environmental impact to be caused by projects applying for environmental

			approval. Within this subproject, either of IEE or EIA studies is to be conducted for the application of the environmental approval, based on the environmental categorization, described in Columns 3. As mentioned in Column 11, environmental audit and monitoring is to be conducted at district level by ESMS unit, to be set up within this ESMS framework.
20	Please state any difficulties and/or constrains related to the implementation of the ESMS.	Lack of Environmental experts.	No environmental expert works at all VDC, SMC and/or Districts, so that no accumulation of experience and/or knowledge of environmental and social considerations for project implementation exist. Therefore, comprehensive capacity building shall be necessary to raise environmental staff at local level. Capacity development programs regarding the improvement of environmental governance is to be developed and implemented by CL-PIU as well as by hiring environmental consultants who oversee all Districts, SMCs and/or VDCs for environmental management.
6. Need of Capacity Development and Improvement Plan **(Improvement and the need for capacity building measures)** The training is necessarily needed.			As mentioned above, no environmental staff exists at all Districts, SMCs and/or VDCs. It is strongly recommended to implement capacity development regarding the environmental clearance for selected school-sector recovery projects while raising strong environmental awareness within Districts, SMCs and/or VDCs in order to improve environmental governance therein. Overall environmental clearance and governance regarding the implementation of infrastructure development project in Nepal is still at the rudimentary stage. So that, it is essential to provide the capacity building by the consultant hired under this Project such as development of assessment tools/guidelines, hands-on training and orientation, awareness raising to the beneficiaries mobilizing social mobilizers. Note: Both WB and ADB plan to implement following capacity development program at central and district levels, 1. Improvement of overall Environmental Governance 2. Environmental Management 3. Environmental Monitoring 4. PI and Information Disclosures Currently, details of those capacity development programs both WB and ADB plan to implement is under preparation process.

(Source: This Study, 2017)

2.4 ESMS Implementation Framework

2.4.1 Introduction

It is important to make this JICA-funded school reconstruction project environmentally safe and sound. As mentioned earlier, this reconstruction project covers roughly about 200 school reconstruction projects of six districts such as Gorkha, Dhading, Nuwakot, Rasuwa, Makawanpur and Lalitpur Districts, and about 83 school reconstruction projects are to be implemented within the 1st batch of entire school reconstruction project. It is noted that there will be three batches (or phases) within the scope of this reconstruction project. In general, one SMC manages the operation and maintenance of one school, so that about 200 SMCs (i.e., School Management Committees) are to be concerned within this entire JICA-funded school reconstruction project.

2.4.2 Implementation Framework

The implementation of JICA-ESMS and its relevant examinations are to be conducted at SMC-level (i.e., one ESMS monitoring activity per one school). Within this school-sector reconstruction project, two ESMS staffs are to be assigned (4 months/year for one staff and 1 moth for another, in total 5 months/year) within the JICA loan project.

Upon considering the accessibility (e.g., current road conditions and network) from Kathmandu to each reconstruction site of six districts, mentioned above, ESMS reporting schedule (4 times per year) and assignment schedule of two ESMS staff to be assigned for the JICA loan project, it would be quite difficult to conduct meaningful ESMS-related monitoring works at all reconstruction sites and reporting to both JICA Tokyo and JICA Nepal Office by JICA ESMS staff within 5 months every year.

For example, theoretically speaking, assigned two ESMS staff shall conduct entire ESMS activities covering from the periodical site monitoring, preparation of ESMS survey sheet and relevant discussion with SMC, submission of approved ESMS monitoring survey sheet to CLPIU, compiling those ESMS reports into quarterly ESMS report after its report review and check, and then, submission to JICA Nepal within 1 month four times per year. To make this school-sector ESMS monitoring more workable and meaningful, on-site ESMS monitoring tasks are to be conducted by Engineer and Sub-Engineers of each DLPIU.

As mentioned earlier, to increase the transparency and guarantee the accountability of this ESMS implementation, DLPIU is to have explanation meetings to relevant SMC member to explain contents of draft ESMS monitoring sheet at each time. After SMC members approve those contents of the draft ESMS monitoring sheet, then, DLPIU can submit final ESMS monitoring sheet to CLPIU. After CLPIU examines those ESMS monitoring sheets, to be submitted by DLPIU, then periodical reporting of ESMS-related monitoring progress to JICA Nepal from CL-PIU (DoE) are to be conducted. It is noted that the ESMS-related monitoring survey sheet is prepared by the JICA Study

Team, based on JICA Guidelines, Environmental Management Framework For School Sector Reform Program (SSRP) Nepal, EPA96, EPR97 and others (see Appendix B). This reporting is planned to be conducted quarterly (4 times per year during implementation of the entire reconstruction project). Figure 2-2 shows the entire framework of school-sector ESMS implementation.

Besides, ESMS-related water quality test at nearby tributaries and/or water bodies such as springs, located at both upstream and downstream sides from the reconstruction site, are to be conducted, using water analysis kits by DLPIU.

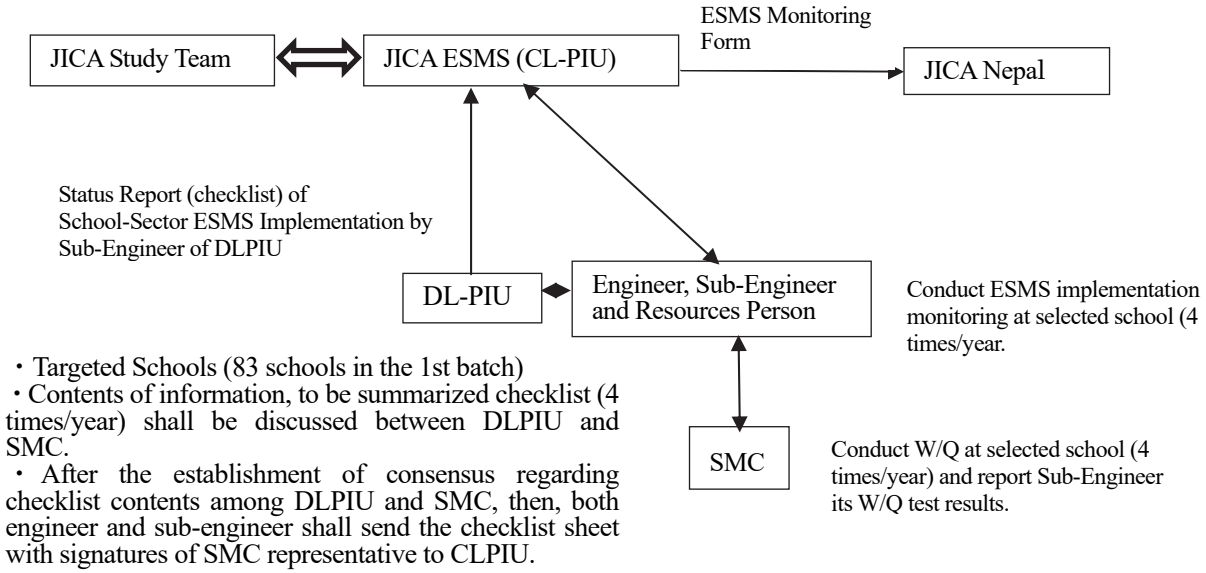
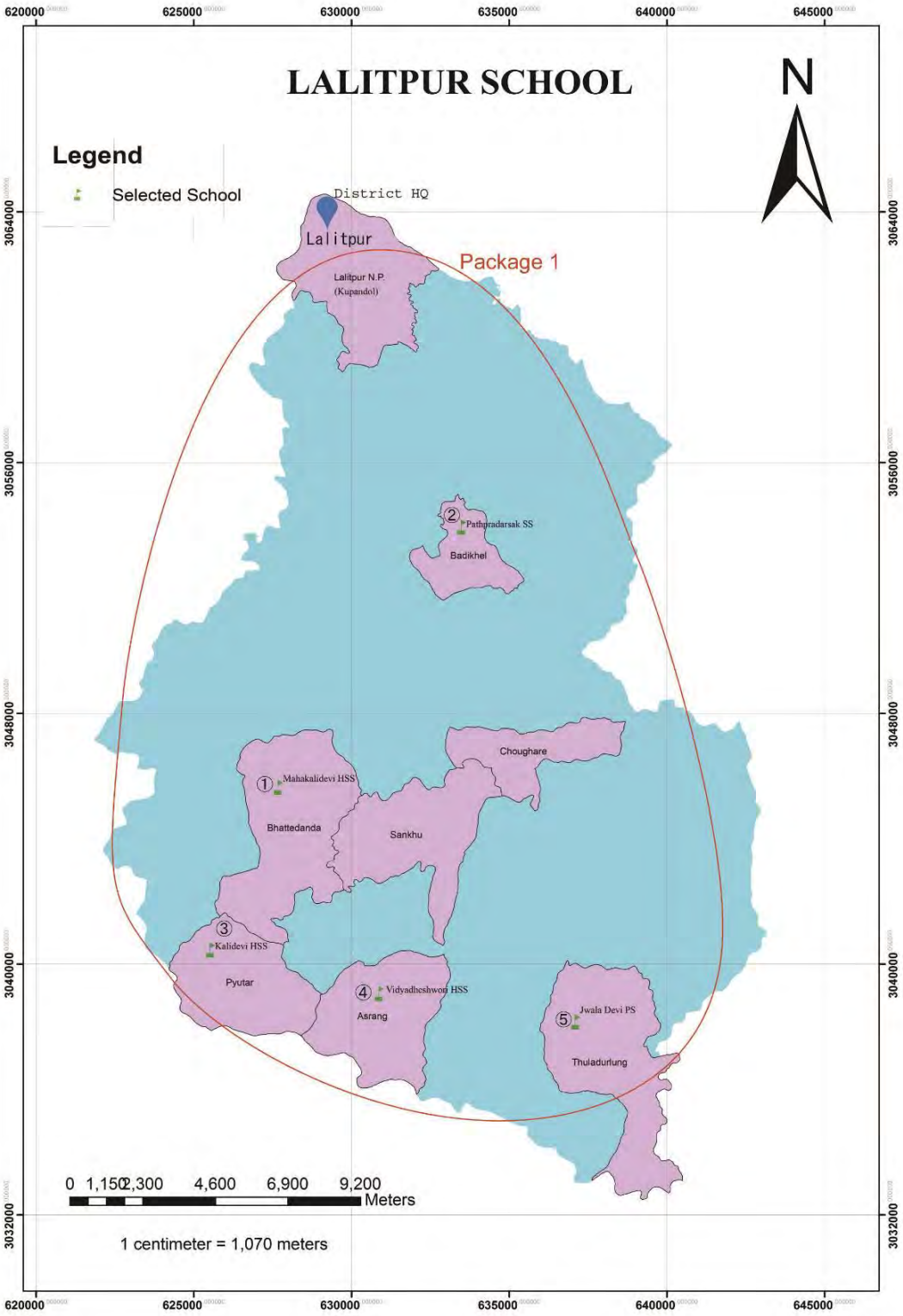


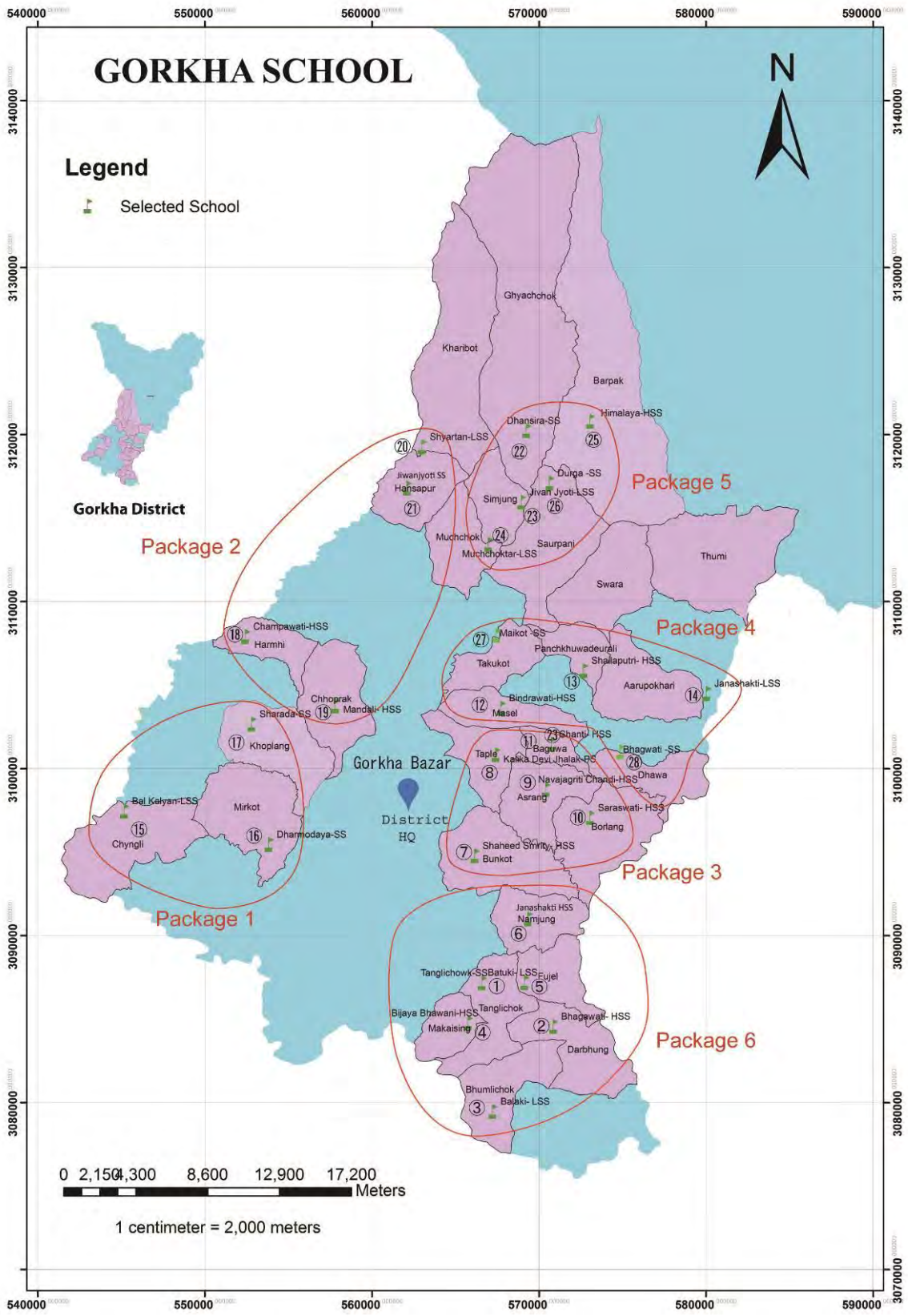
Figure 2-2 JICA ESMS Implementation Framework (School Sector)

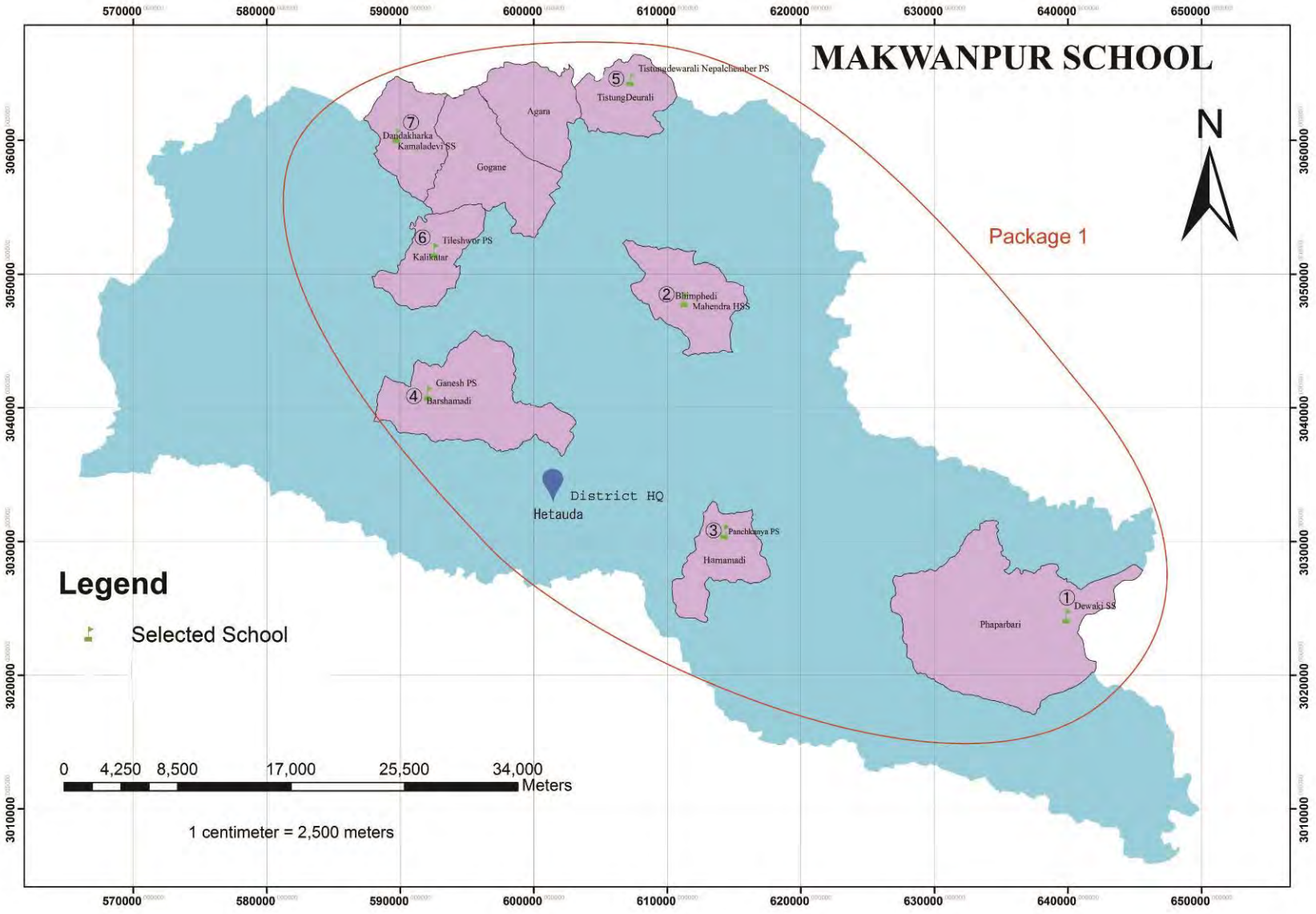
Source: This Study, 2017

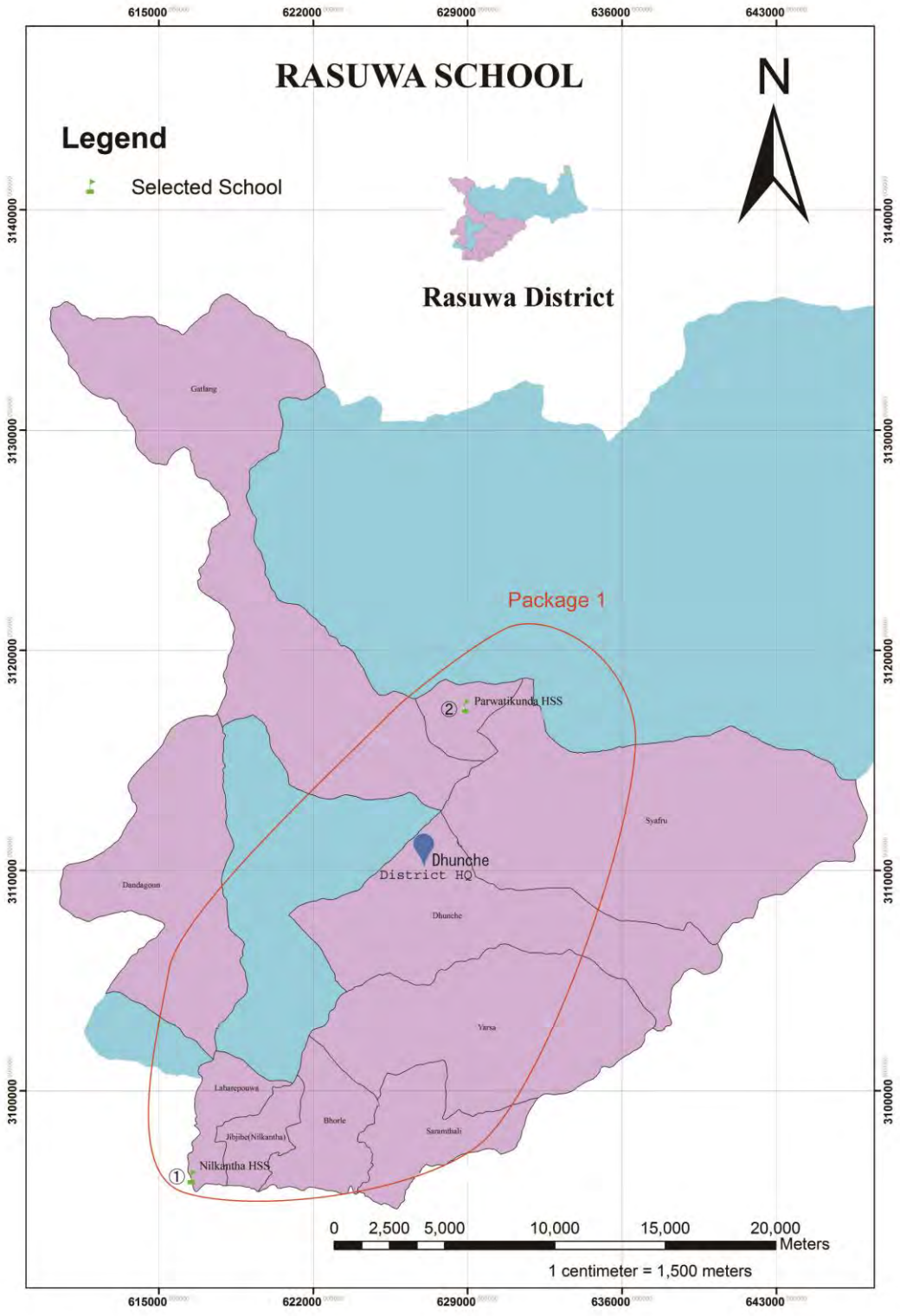
As mentioned within the column, entitled as "6. Need of Capacity Development and Improvement Plan (Improvement and the need for capacity building measures)" of ESMS Checklist, no environmental staff exists at all Districts, SMCs and/or VDCs. So, it is strongly recommended to implement capacity development (CD) regarding the JICA-ESMS-based environmental clearance for selected school-sector recovery projects while raising strong environmental awareness within Districts, SMCs and/or VDCs in order to improve environmental governance therein. More detailed descriptions of this CD program are to be summarized within following section.

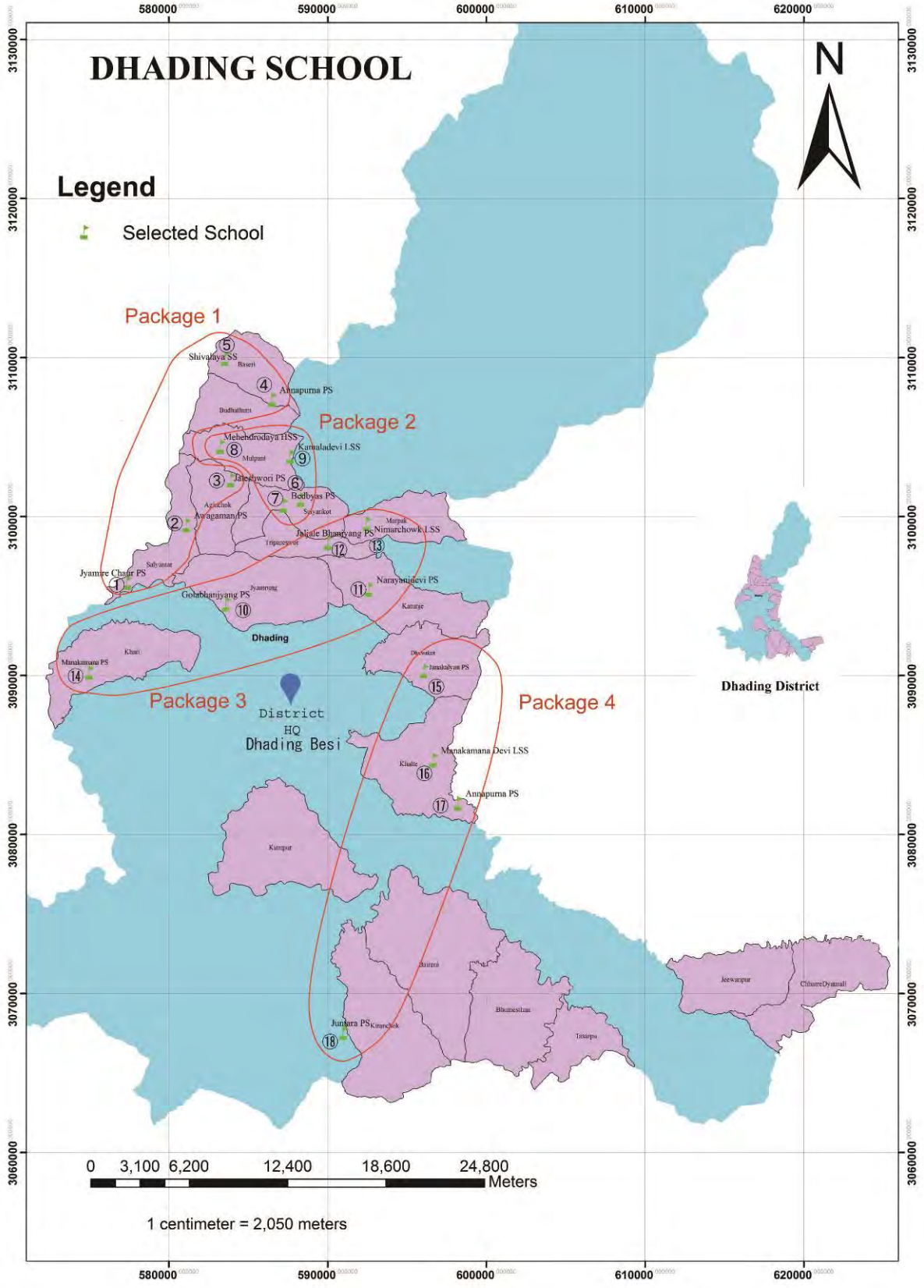
Attachment 1
Location Map of 1st Batch
83 Schools

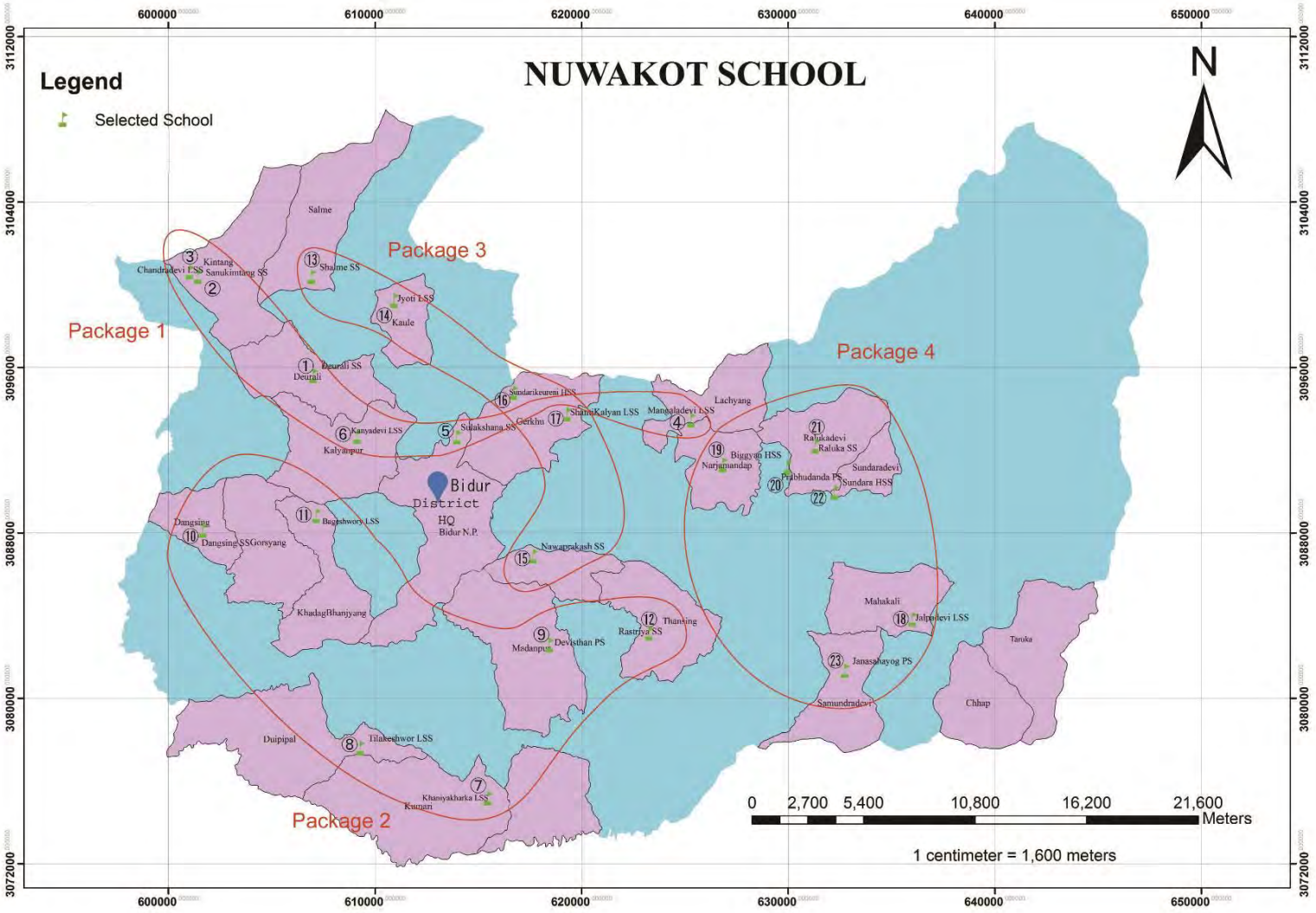

LALITPUR SCHOOL
N
Legend
Selected School
District HQ
Lalitpur
Package 1
Lalitpur N.P.
(Kupandol)
② Pathpradarsak SS
Badikhel
Choughare
① Mahakalidevi HSS
Bhattedanda
Sankhu
③ Kalidevi HSS
Pyutar
④ Vidyadheshwori HSS
Asrang
⑤ Jwala Devi PS
Thuladurlung
620000
625000
630000
635000
640000
645000
3064000
3056000
3048000
3040000
3032000
0 1,150 2,300 4,600 6,900 9,200
Meters
1 centimeter = 1,070 meters


GORKHA SCHOOL
N
Legend
Selected School
Gorkha District
Package 1
Package 2
Package 3
Package 4
Package 5
Package 6
Gorkha Bazar
District HQ
Ghyachchok
Kharibot
Barpak
Himalaya-HSS
Dhansira-SS
Shyartan-LSS
Jiwanjyoti SS
Hansapur
Durga -SS
Jivan Jyoti-LSS
Simjung
Muchchok
Muchchoktar-LSS
Saurpani
Thumi
Swara
Champawati-HSS
Harmhi
Maikot -SS
Panchkhuwadeurali
Takukot
Shalaputri- HSS
Aarupokhari
Janashakti-LSS
Bindrawati-HSS
Masel
Chhoprak
Mandali- HSS
Sharada-SS
Khoplang
Shanti HSS
Bagtuwa
Taple
Kalika Devi Jhalak-PS
Bhagwati -SS
Dhawa
Navajagriti Chandi-HSS
Asrang
Saraswati- HSS
Borlang
Shaheed Smriti- HSS
Bunkot
Bal Kalyan-LSS
Mirkot
Chyngli
Dharmodaya-SS
Janashakti HSS
Namjung
Tanglichowk-SS
Batuki- LSS
Fujel
Tanglichok
Bijaya Bhawani-HSS
Makaising
Bhagawati- HSS
Darbhung
Bhumlichok
Balaki- LSS
0 2,150 4,300 8,600 12,900 17,200
Meters
1 centimeter = 2,000 meters
540000
550000
560000
570000
580000
590000
3140000
3130000
3120000
3110000
3100000
3090000
3080000
3070000


MAKWANPUR SCHOOL
N
Package 1
Tistungdewarali Nepalchember PS
TistungDeurali
Agara
Gogane
Dandakharka
Kamaladevi SS
Tileshwor PS
Kalikatar
Bhimphedi
Mahendra HSS
Ganesh PS
Barshamadi
District HQ
Hetauda
Panchkanya PS
Hamamadi
Dewaki SS
Phaparbari
Legend
Selected School
0 4,250 8,500 17,000 25,500 34,000
Meters
1 centimeter = 2,500 meters
570000
580000
590000
600000
610000
620000
630000
640000
650000
3060000
3050000
3040000
3030000
3020000
3010000


RASUWA SCHOOL
N
Legend
Selected School
Rasuwa District
615000
622000
629000
636000
643000
3140000
3130000
3120000
3110000
3100000
Gatlang
Package 1
② Parwatikunda HSS
Syafru
Dhunche
District HQ
Dandagaun
Dhuniche
Yarsa
Laharepouwa
Bhorle
Saramthali
Jibjibe(Nilkantha)
① Nilkantha HSS
0 2,500 5,000 10,000 15,000 20,000
Meters
1 centimeter = 1,500 meters

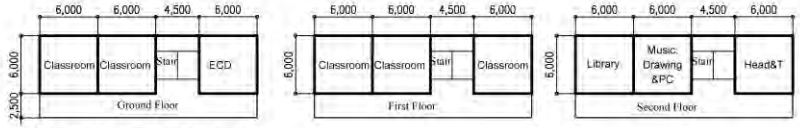

DHADING SCHOOL
N
Legend
Selected School
Package 1
Package 2
Package 3
Package 4
Shivalaya SS
Annapurna PS
Mehendrodaya HSS
Kamaladevi LSS
Bedbyas PS
Awagaman PS
Jyamire Chaur PS
Golabhanjyang PS
Jaljale Bhanjyang PS
Nimarchowk LSS
Narayanidevi PS
Dhading
District HQ
Dhading Besi
Manakamana Devi LSS
Annapurna PS
Junjara PS
Dhading District
0 3,100 6,200 12,400 18,600 24,800
Meters
1 centimeter = 2,050 meters
580000
590000
600000
610000
620000
3130000
3120000
3110000
3100000
3090000
3080000
3070000
3060000


NUWAKOT SCHOOL
Legend
Selected School
N
Package 1
Package 2
Package 3
Package 4
Bidur
District
HQ
Bidur N.P.
Salme
Kintang
Chandradevi LSS
Sanukimtang SS
Shalme SS
Jyoti LSS
Kaule
Deurali SS
Deurali
Kanyadevi LSS
Kalyanpur
Sukakshang SS
Gerkhu
Sundarikeureni HSS
Shanti Kalyan LSS
Mangaladevi LSS
Lachyang
Rajukadevi
Raluka SS
Biggyan HSS
Narjanandap
Sundaradevi
Prabhudanda PS
Sundara HSS
Bageshwory LSS
Dangsing
Dangsing SSGorsyang
Nawaprakash SS
KhadagBhanjyang
Devisthan PS
Madanpur
Thansing
Rastriya SS
Mahakali
Jalpadevi LSS
Janasahayog PS
Taruka
Samundradevi
Chhap
Duipipal
Tilakeshwor LSS
Khaniyakharka LSS
Kumari
0 2,700 5,400 10,800 16,200 21,600
Meters
1 centimeter = 1,600 meters
600000
610000
620000
630000
640000
650000
3112000
3104000
3096000
3088000
3080000
3072000

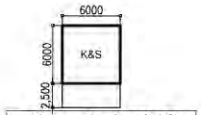
Attachment 2
Combination of Type Design

Ex. 1A) TD-PS, Grade 1-5, 80 students

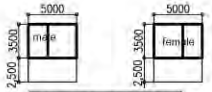
1 ECD Classroom
5 Classrooms
Library
Music,Drawing&PC
Headmaster&Teachers Room
Kitchen&Store
Toilets (Male & Female)



Academic Block, 3-9C(S) -A



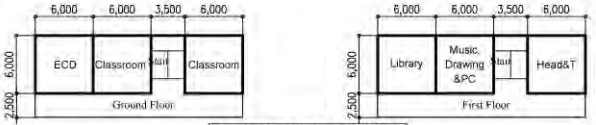
Primary Block, 1C (S)



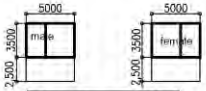
Toilet block, T (S)

Ex. 1B) TD-PS, Grade 1-5, 60 students

1 ECD Classroom
2 Classrooms
Library
Music,Drawing&PC
Headmaster&Teachers Room
Toilets (Male & Female)



Academic Block, 2-6C(S)-C

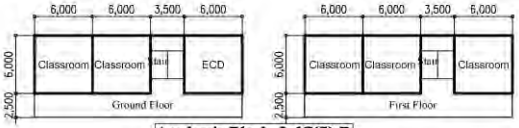


Toilet block, T (S)

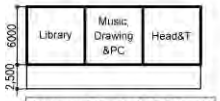
Check	Type Combination -PS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 1C) TD-PS, Grade 1-5, 80 students

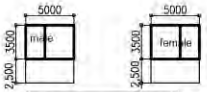
1 ECD Classroom
5 Classrooms
Library
Music,Drawing&PC
Headmaster&Teachers Room
Toilets (Male & Female)



Academic Block, 2-6C(S)-B



Primary Block, 3C (S) -B

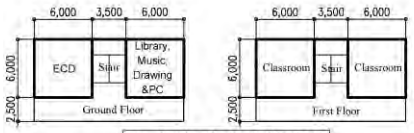


Toilet block, T (S)

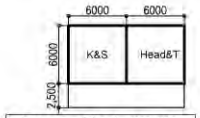
Check	Type Combination -PS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 3A) TD-PS, Grade 1-5, 60 students

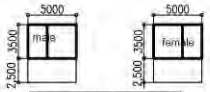
1 ECD Classroom
2 Classrooms
Library
Music,Drawing&PC
Headmaster&Teachers Room
Toilets (Male & Female)



Academic Block, 2-4C (S)-C



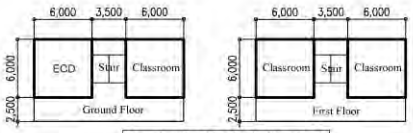
Primary Block, 2C (S)



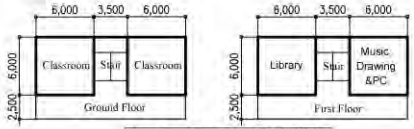
Toilet block, T (S)

Ex. 3B) TD-PS, Grade 1-5, 60 students

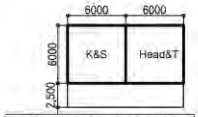
1 ECD Classroom
5 Classrooms
Library
Music,Drawing&PC
Headmaster&Teachers Room
Kitchen&Store
Toilets (Male & Female)



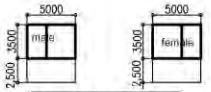
Academic Block, 2-4C (S)-B



Academic Block, 2-4C (S)-D



Primary Block, 2C (S)



Toilet block, T (S)

Check

Type Combination -PS

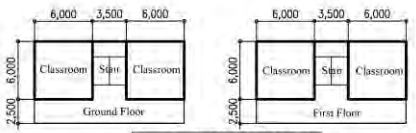
JICA Project

Architecture Drawing

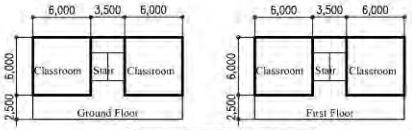
2017.02.01

Ex. 5) Type: TD-LS, Grade 1-8, 140 students

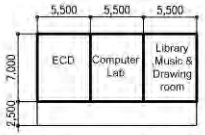
8 Classrooms
Library ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



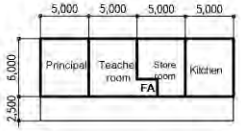
Academic Block, 2-4C (S)



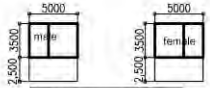
Academic Block, 2-4C (S)



Practical Classroom Block, EMC



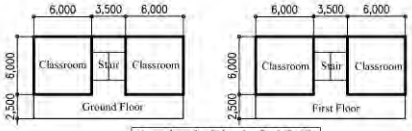
Admin. Block, A (S)



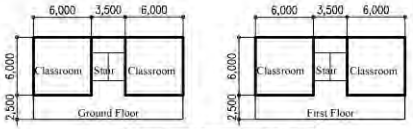
Toilet block, T (S)

Ex. 7) Type: TD-LS, Grade 1-8, 220 students

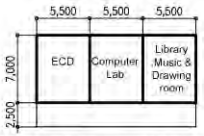
8 Classrooms
Library ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



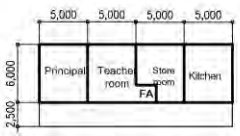
Academic Block, 2-4C (S)



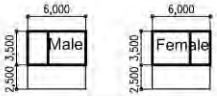
Academic Block, 2-4C (S)



Practical Classroom Block, EMC



Admin. Block, A (S)

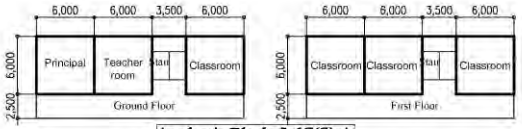


Toilet block, T (M)

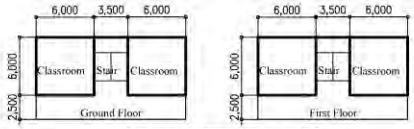
Check	Type Combination -LS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 7A) Type: TD-LS, Grade 1-8, 220 students

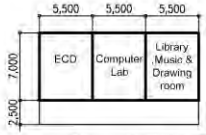
8 Classrooms
Library ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



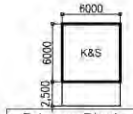
Academic Block, 2-6C(S)-A



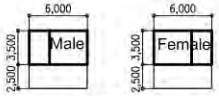
Academic Block, 2-4C (S)



Practical Classroom Block, EMC



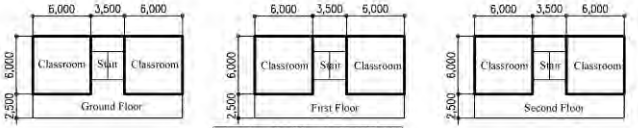
Primary Block, 1C (S)



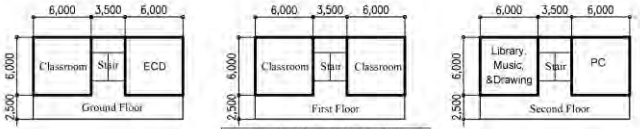
Toilet block, T (M)

Ex. 7B) Type: TD-LS, Grade 1-8, 220 students

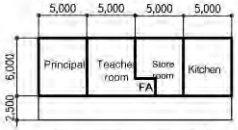
9 Classrooms
Library ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



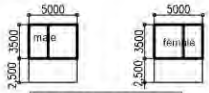
Academic Block, 3-6C (S)



Academic Block. 3-6C (S) -A



Admin. Block, A (S)



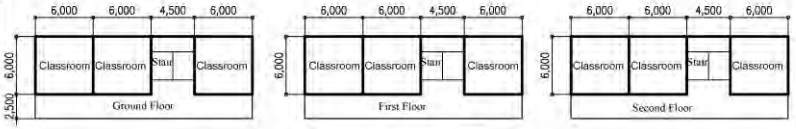
Toilet block, T (S)

Check

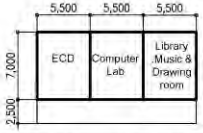
Type Combination -LS	Architecture Drawing
JICA Project	2017.02.01

Ex. 7C) Type: TD-LS, Grade 1-8, 220 students

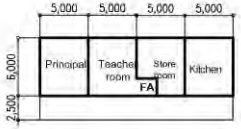
9 Classrooms
Library ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



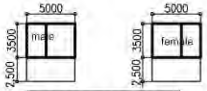
Academic Block, 3-9C(S)



Practical Classroom Block, EMC



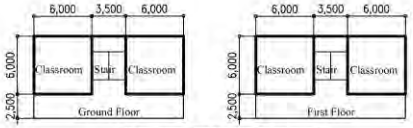
Admin. Block, A (S)



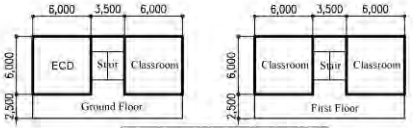
Toilet block, T (S)

Ex. 7D) Type: TD-LS, Grade 1-8, 220 students

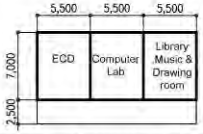
7 Classrooms
Library 2 ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



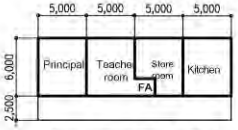
Academic Block, 2-4C (S)



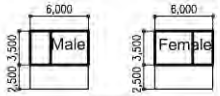
Academic Block, 2-4C (S)-B



Practical Classroom Block, EMC



Admin. Block, A (S)



Toilet block, T (M)

Check

Type Combination - LS

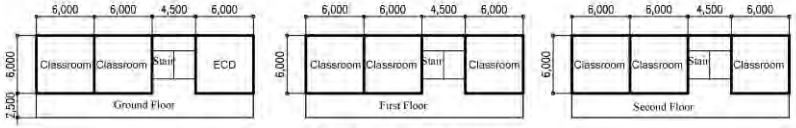
JICA Project

Architecture Drawing

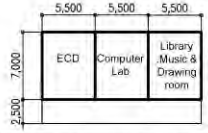
2017.02.01

Ex. 7E) Type: TD-LS, Grade 1-8, 220 students

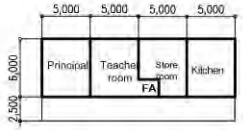
8 Classrooms
Library 2 ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



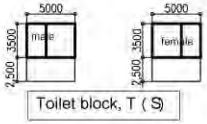
Academic Block, 3-9C(S)-C



Practical Classroom Block, EMC



Admin. Block, A (S)

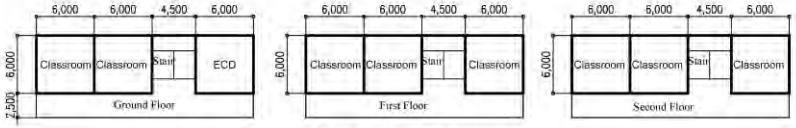


Toilet block, T (S)

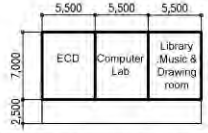
Check	Type Combination -LS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 7E) Type: TD-LS, Grade 1-8, 220 students

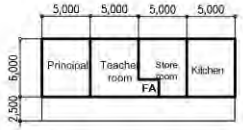
8 Classrooms
Library 2 ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



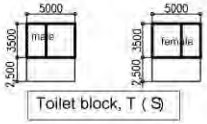
Academic Block, 3-9C(S)-C



Practical Classroom Block, EMC



Admin. Block, A (S)

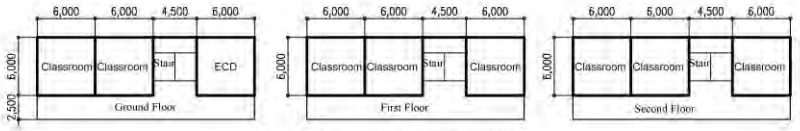


Toilet block, T (S)

Check	Type Combination -LS	Architecture Drawing
	JICA Project	2017.02.01

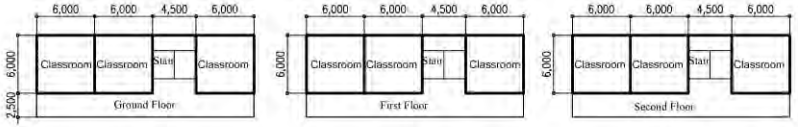
Ex. 7G) Type: TD-LS, Grade 1-8, 220 students

9 Classrooms
Library **ECD, Computer Lab, Music & Drawing**
Teacher room, Principal, Kitchen, Store room
Toilet (Male & Female)

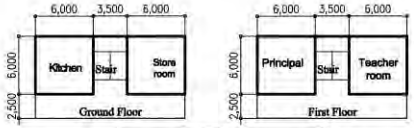


Academic Block, 3-9C(S)-C

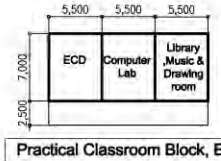
NOTE: 3-9C(S)-C will be used as per site condition



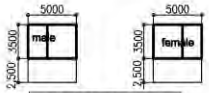
Academic Block, 3-9C(S)



Academic Block, 2-4C (S)-E



Practical Classroom Block, EMC

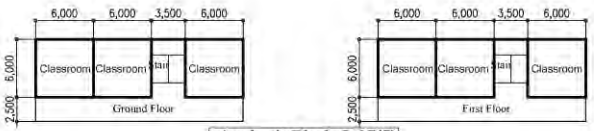


Toilet block, T (S)

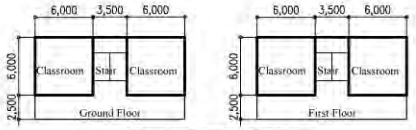
Check	**Type Combination -LS**	Architecture Drawing 2017.02.01
	JICA Project	

Ex. 9) Type: TD-SS, Grade 1-10, 300 students

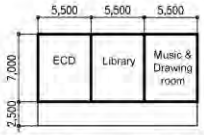
10 Classrooms
Library ECD, Computer Lab, Music & Drawing
Teacher room, Principal, Kitchen, Store room First Aid
Toilets (Male & Female)



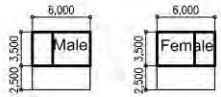
Academic Block, 2-6C(S)



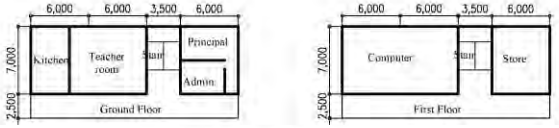
Academic Block, 2-4C (S)



Practical Classroom Block, EML



Toilet block, T (M)

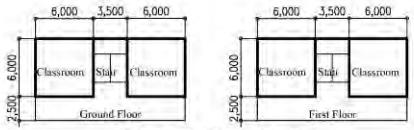


Admin. Block, 2-AC

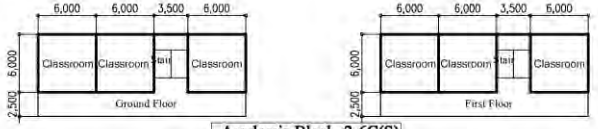
Check	Type Combination -SS	Architecture Drawing 2017.02.01
	JICA Project	

Ex. 10) Type: TD-SS, Grade 1-10, 480 students

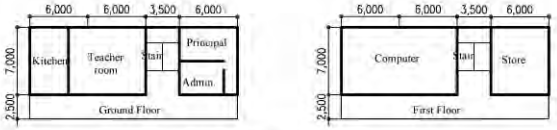
10 Classrooms
Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Toilets (Male & Female)



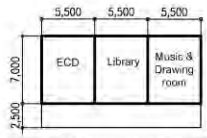
Academic Block, 2-4C (S)



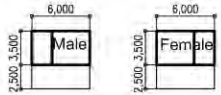
Academic Block, 2-6C(S)



Admin. Block, 2-AC



Practical Classroom Block, EML

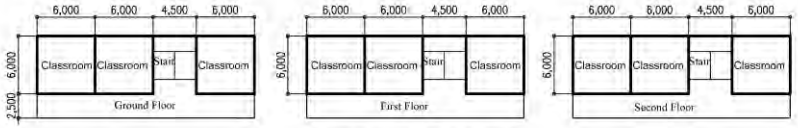


Toilet block, T (M)

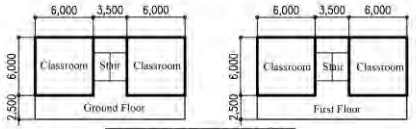
Check	Type Combination -SS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 10A) Type: TD-SS, Grade 1-10, 480 students

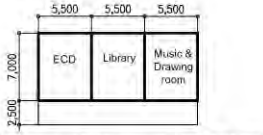
13 Classrooms
Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)



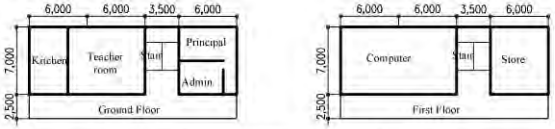
Academic Block, 3-9C(S)



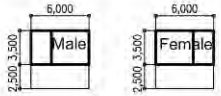
Academic Block, 2-4C (S)



Practical Classroom Block, EML



Admin. Block, 2-AC

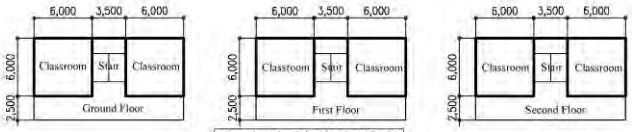


Toilet block, T (M)

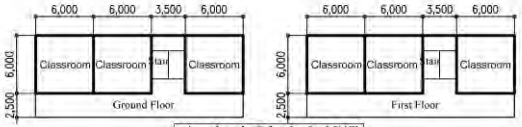
Check	Type Combination -SS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 10B) Type: TD-SS, Grade 1-10, 480 students

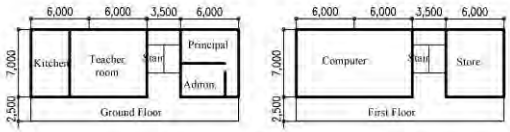
12 Classrooms
Laboratory, Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)



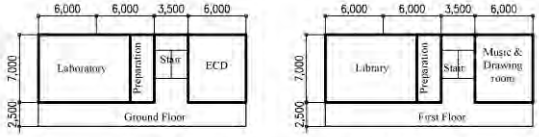
Academic Block, 3-6C (S)



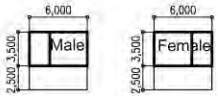
Academic Block, 2-6C(S)



Admin. Block, 2-AC



Practical Classroom Block, 2-LaLiEM

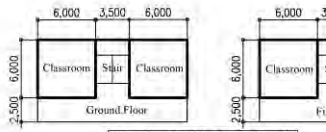


Toilet block, T (M)

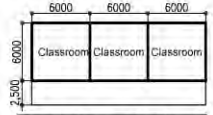
Check	Type Combination -SS-3	Architecture Drawing
	JICA Project	2017.02.01

Ex. 10C) Type: TD-SS, Grade 1-10, 480 students

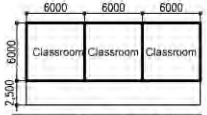
10 Classrooms
Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)



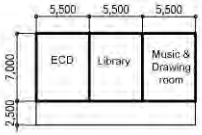
Academic Block, 2-4C (S)



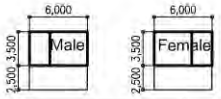
Primary Block, 3C (S) -A



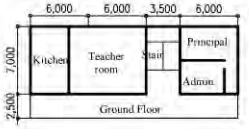
Primary Block, 3C (S) -A

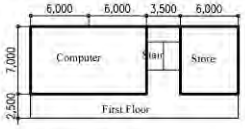


Practical Classroom Block, EML



Toilet block, T (M)



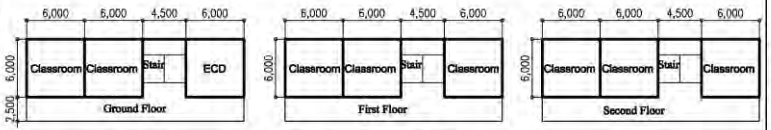


Admin. Block, 2-AC

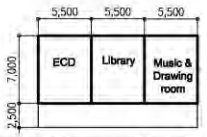
Check	Type Combination -SS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 10D) Type: TD-SS, Grade 1-10, 480 students

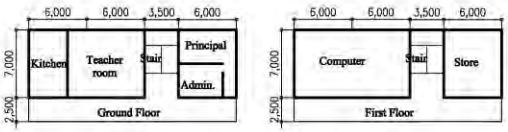
8 Classrooms
Library 2 ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)



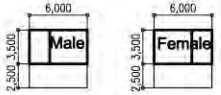
Academic Block, 3-9C(S)-C



Practical Classroom Block, EML



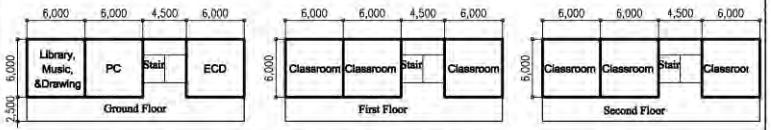
Admin. Block, 2-AC



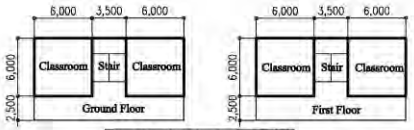
Toilet block, T (M)

Ex. 10E) Type: TD-SS, Grade 1-10, 480 students

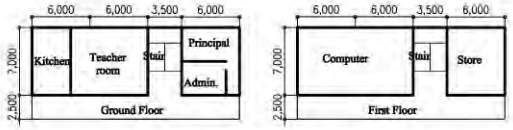
10 Classrooms
Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)



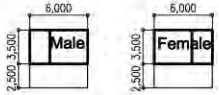
Academic Block, 3-9C(S)-B



Academic Block, 2-4C (S)



Admin. Block, 2-AC



Toilet block, T (M)

Check

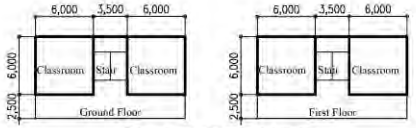
Type Combination -SS

JICA Project

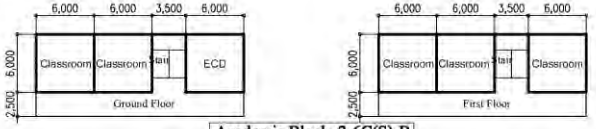
Architecture Drawing
2017.02.01

Ex. 10F) Type: TD-SS, Grade 1-10, 480 students

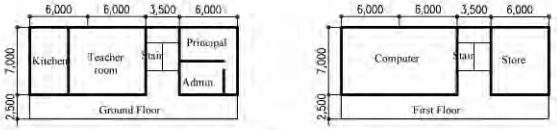
9 Classrooms
Library 2 ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)



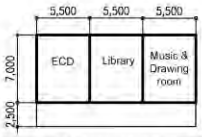
Academic Block, 2-4C (S)



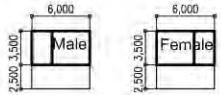
Academic Block, 2-6C(S)-B



Admin. Block, 2-AC



Practical Classroom Block, EML



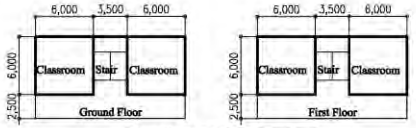
Toilet block, T (M)

Check		Type Combination -SS	Architecture Drawing
		JICA Project	2017.02.01

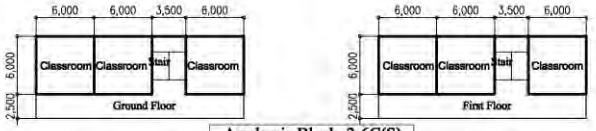
Ex. 10G) Type: TD-SS, Grade 1-10, 480 students

14 Classrooms
Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)

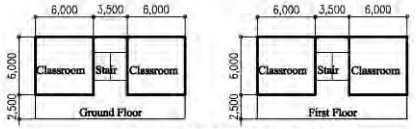
2-4C(S) - Existing Building



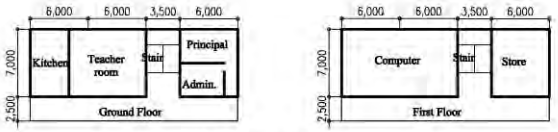
Academic Block, 2-4C (S)



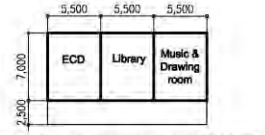
Academic Block, 2-6C(S)



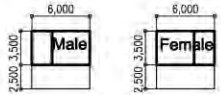
Academic Block, 2-4C (S)



Admin. Block, 2-AC



Practical Classroom Block, EML

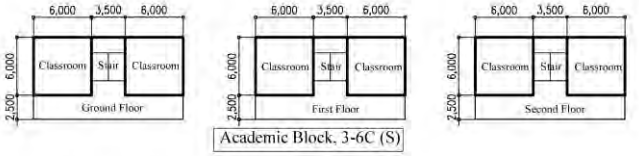


Toilet block, T (M)

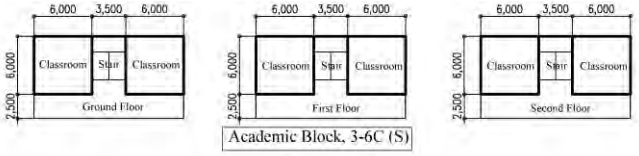
Check	Type Combination -SS	Architecture Drawing
	JICA Project	2017 (2021)

Ex. 11A) Type: TD-HS, Grade 1-12, 400 students

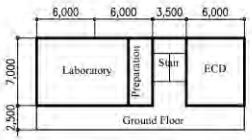
12 Classrooms
Laboratory, Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer labs, Teacher
Multipurpose Hall
Toilet (Male & Female)

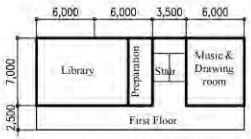


Academic Block, 3-6C (S)

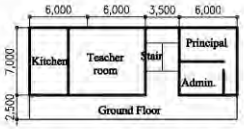


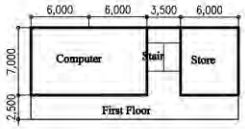
Academic Block, 3-6C (S)



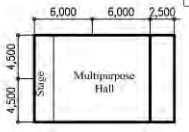


Practical Classroom Block, 2-LaLiEM

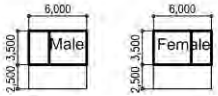




Admin. Block, 2-AC



Multipurpose Block, M(S)

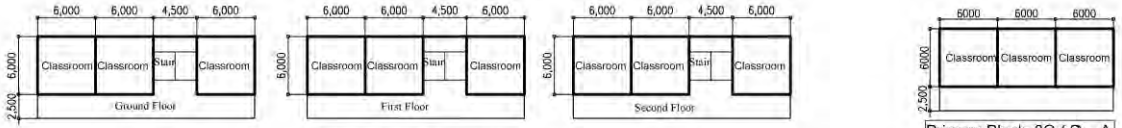


Toilet block, T (M)

Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017.02.01

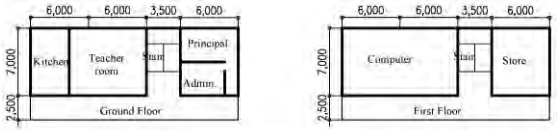
Ex. 11B) Type: TD-HS, Grade 1-12, 400 students

12 Classrooms
Laboratory, Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)

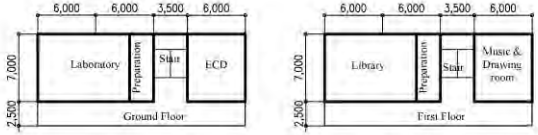


Academic Block, 3-9C(S)

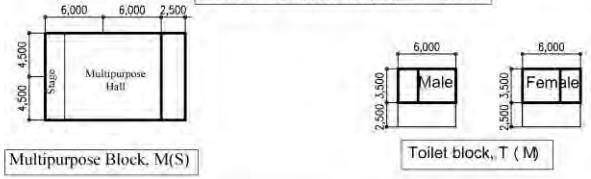
Primary Block, 3C (S) -A



Admin. Block, 2-AC



Practical Classroom Block, 2-LaLiEM



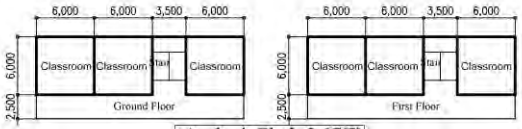
Multipurpose Block, M(S)

Toilet block, T (M)

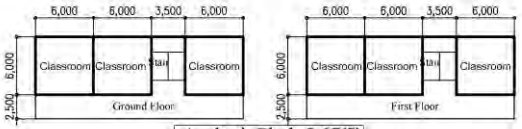
Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017 02 01

Ex. 11C) Type: TD-HS, Grade 1-12, 400 students

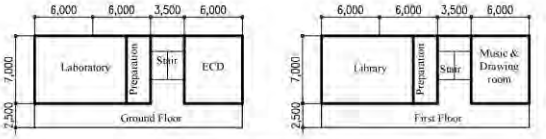
12 Classrooms
Laboratory, Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)



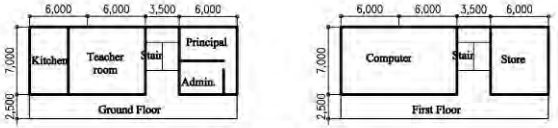
Academic Block, 2-6C(S)



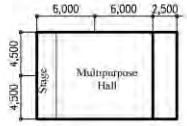
Academic Block, 2-6C(S)



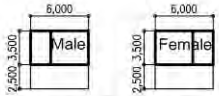
Practical Classroom Block, 2-LaLiEM



Admin. Block, 2-AC



Multipurpose Block, M(S)

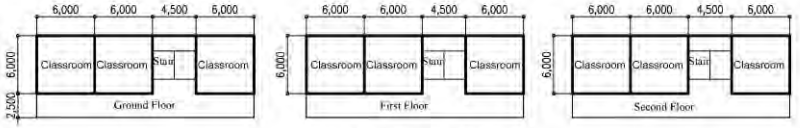


Toilet block, T (M)

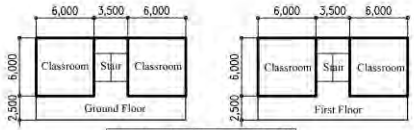
Check		Type Combination - HS	Architecture Drawing
		JICA Project	2017.02.01

Ex. 11D) Type: TD-HS, Grade 1-12, 400 students

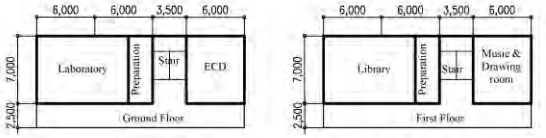
13 Classrooms
Laboratory, Library ECD, Music & Drawing
Principal, Kitchen, Store room First Aid Computer lab, Teacher
Multipurpose Hall
Toilet (Male & Female)



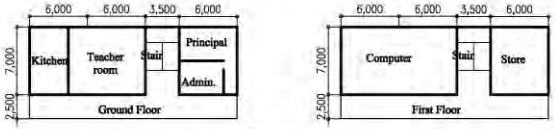
Academic Block, 3-9C(S)



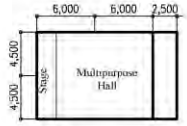
Academic Block, 2-4C (S)



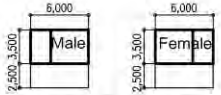
Practical Classroom Block, 2-LaLiEM



Admin. Block, 2-AC



Multipurpose Block, M(S)

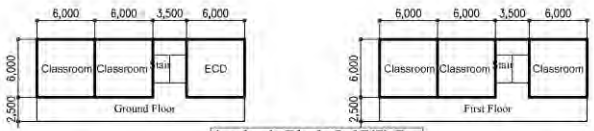


Toilet block, T (M)

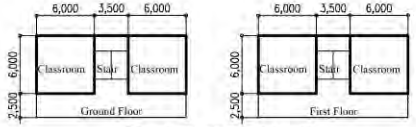
Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 12) Type: TD-HS, Grade 1-12, 600 students

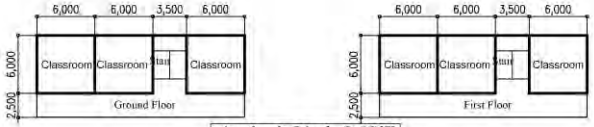
15 Classrooms
Laboratory, Library Computer lab, Drawing & Music
Principal, Kitchen, Store room First Aid ECD, 2 Teacher Room
Multipurpose Hall
Toilets (Male & Female)



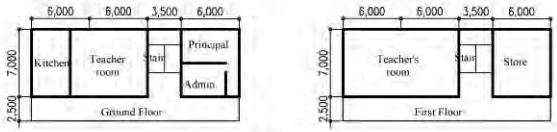
Academic Block, 2-6C(S)-B



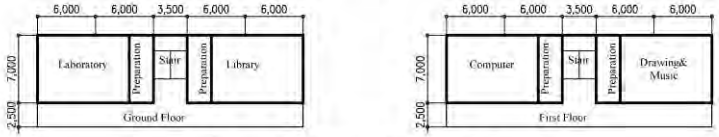
Academic Block, 2-4C (S)



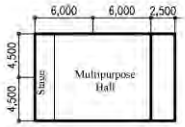
Academic Block, 2-6C(S)



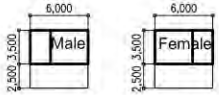
Admin. Block, 2-AC-A



Practical Classroom Block, 2-LaLiCM



Multipurpose Block, M(S)

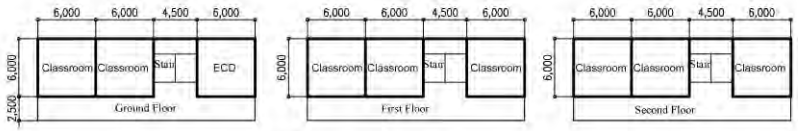


Toilet block, T (M)

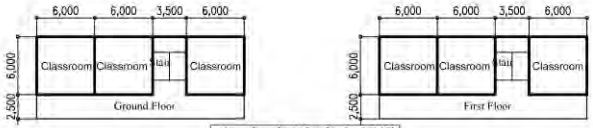
Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 12A) Type: TD-HS, Grade 1-12, 600 students

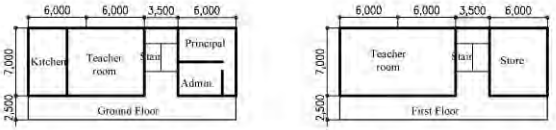
14 Classrooms
Laboratory, Library Computer lab, Drawing & Music
Principal, Kitchen, Store room First Aid ECD, 2 Teacher room
Multipurpose Hall
Toilet (Male & Female)



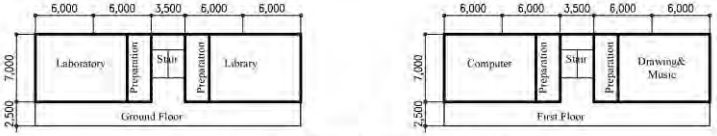
Academic Block, 3-9C(S)-C



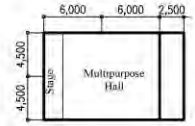
Academic Block, 2-6C(S)



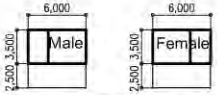
Admin. Block, 2-AC-A



Practical Classroom Block, 2-LaLiCM



Multipurpose Block, M(S)

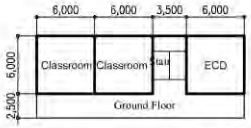


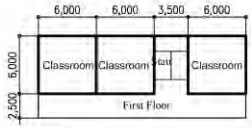
Toilet block, T (M)

Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017.02.01

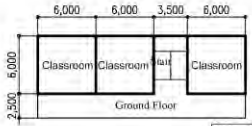
Ex. 12B) Type: TD-HS, Grade 1-12, 480 students

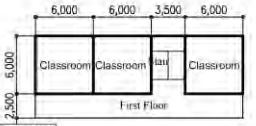
11 Classrooms
Laboratory, Library Computer lab, Drawing & Music
Principal, Kitchen, Store room First Aid ECD, 2 Teacher room
Multipurpose Hall
Toilet (Male & Female)



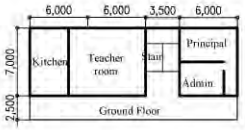


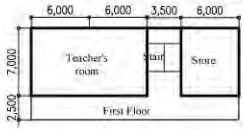
Academic Block, 2-6C(S)-B



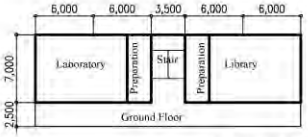


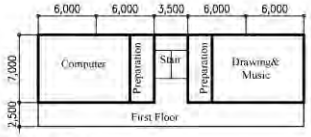
Academic Block, 2-6C(S)



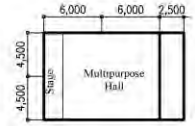


Admin. Block, 2-AC-A

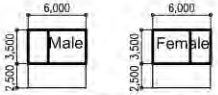




Practical Classroom Block, 2-LaLiCM



Multipurpose Block, M(S)

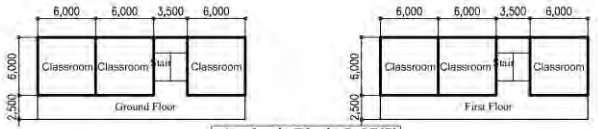


Toilet block, T (M)

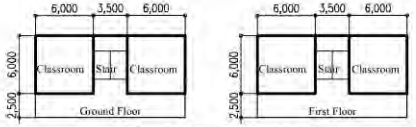
Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 13) Type: TD-HS, Grade 1-12, 600 students

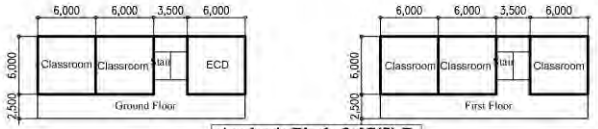
15 Classrooms
Laboratory, Library Computer lab, Drawing & Music
Principal, Kitchen, Store room First Aid ECD, 2 Teacher's room
Multipurpose Hall
Toilets (Male & Female)



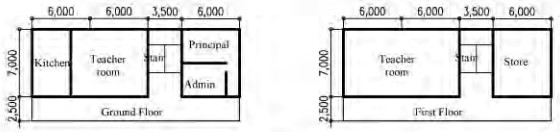
Academic Block, 2-6C(S)



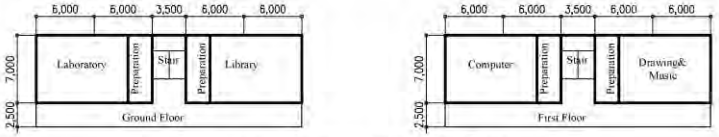
Academic Block, 2-4C (S)



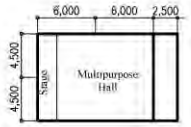
Academic Block, 2-6C(S)-B



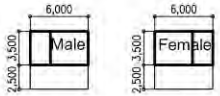
Admin. Block, 2-AC-A



Practical Classroom Block, 2-LaLiCM



Multipurpose Block, M(S)

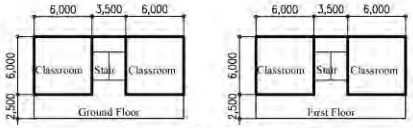


Toilet block, T (M)

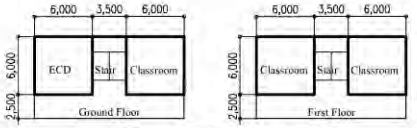
Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017.02.01

Ex. 13A) Type: TD-HS-2b, Grade 1-12, 600 students

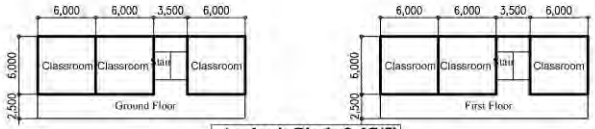
13 Classrooms
Laboratory, Library Computer lab, Drawing & Music
Principal, Kitchen, Store room First Aid ECD, 2 Teacher room
Multipurpose Hall
Toilet (Male & Female)



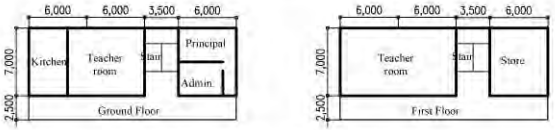
Academic Block, 2-4C (S)



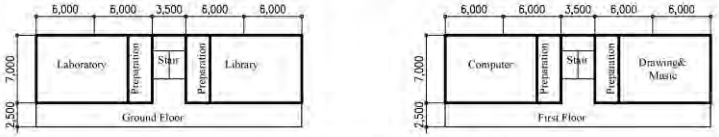
Academic Block, 2-4C (S)-B



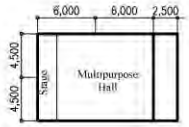
Academic Block, 2-6C(S)



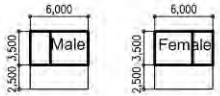
Admin. Block, 2-AC-A



Practical Classroom Block, 2-LaLiCM



Multipurpose Block, M(S)



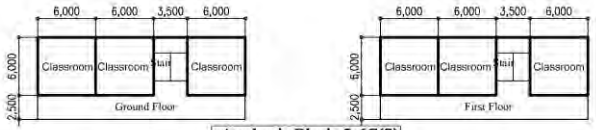
Toilet block, T (M)

Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017.02.01

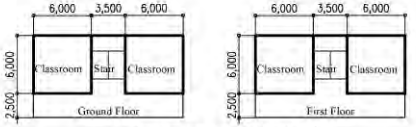
Ex. 13B) Type: TD-HS, Grade 1-12, 600 students

19 Classrooms
Laboratory, Library Computer lab, Drawing & Music
Principal, Kitchen, Store room First Aid ECD, 2 Teacher's room
Multipurpose Hall
Toilet (Male & Female)

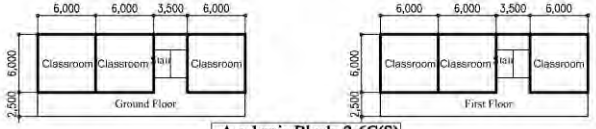
Special case:
Academic Block, 2-6C(S)- existing building
Academic Block, 2-6C(S)- existing building
Academic Block, 2-4C(S)- existing building
Admin Block, 2-AC-A- existing Building



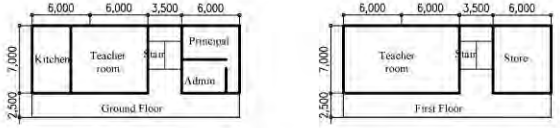
Academic Block, 2-6C(S)



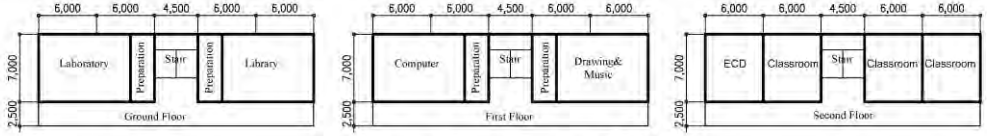
Academic Block, 2-4C (S)



Academic Block, 2-6C(S)

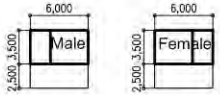


Admin. Block, 2-AC-A



Practical Classroom Block, 3-LaLiCM4C

Multipurpose Block, M(S)



Toilet block, T (M)

Check	Type Combination - HS	Architecture Drawing
	JICA Project	2017.02.01

Attachment 3
Construction Progress by Package

Lalitpur Package 1

STATUS REPORT OF EMERGENCY SCHOOL RECONSTRUCTION UNDER JICA - TPIS

1. Project Details

1.1 Name of Project: Emergency School Reconstruction Project

1.2 Client: Ministry of Education, Central Level Project Implementation Unit (CLPIU)

1.3 Development Partner: Japan International Cooperation Agency (JICA)

1.4 Name of the Consultant: OCG in association with MOHRI & EWES

1.5 Name of Contractor: M/S MB-Gauri Parbati J/V

1.6 Project District: Lalitpur

1.7 Contract Package No.: ESRP/DOE/NCB/01 – Lalitpur 1

1.8 Location of Site/Name of School: **Bhattedanda**, Mahakalidevi HS School

1.9 Contract Signed Date: 26 May 2016

1.10 Contract Duration: 15 Months

1.11 Date of the Start of Work: 2 June 2016

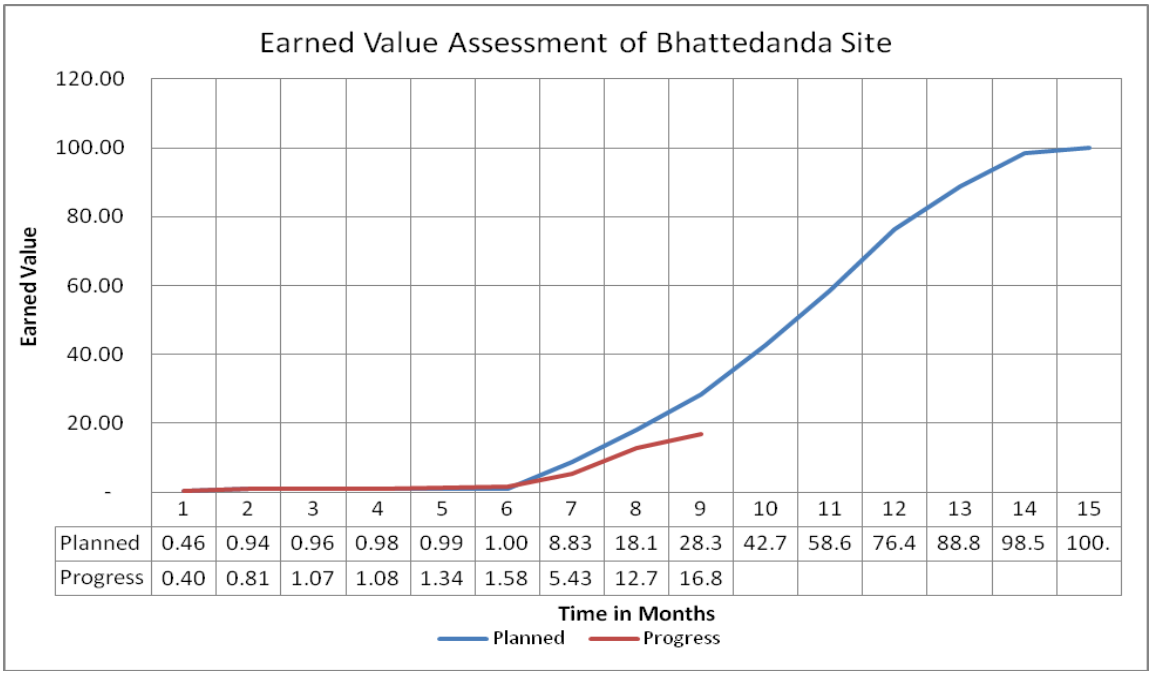
1.12 Scheduled Date of Completion: 1st Sept. 2017

1.13 Total Contract Value: NPR. 55,937,298.25 Excl. VAT

1.14 Contract Type: Unit Rate Contract

2. Report Date: 9th March 2017

3. Progress and Deviation from Plan at this Report Date (End of February 2017)



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Planned	0.46	0.94	0.96	0.98	0.99	1.00	8.83	18.1	28.3	42.7	58.6	76.4	88.8	98.5	100.
Progress	0.40	0.81	1.07	1.08	1.34	1.58	5.43	12.7	16.8						

Contractor's plan and deviation in progress can be visualized with the above Earned value analysis curve (as shown).

4. Test Metrics

Contractor has been doing Concrete cube sampling and testing for each/every structural work (RCC) in site for every concreting day. For example Column footings, Lower Tie-beam, Columns upto UTB, Upper Tie-beams, Ground floor columns, Slab etc. Besides that Contractor also performs Concrete's slump cone test, Clay content test of sand, Sieve analysis test of both sand & aggregate in site as per DLPIU/EWES engineer's instruction.

5. Change in Design

There was no any major change in design/drawing in the building structure part; but there will be big quantity variation (increase) in Retaining-wall stone-masonry work and Earthwork cut/fill in the site due to steep terrain.
Some modifications (in Truss, rebar in RCC members, Column footings etc.) have been issued in October 2016 and are being implemented in all sites without any difficulty since then.

6. Financial Progress

Total Contract Value	NPR 55,937,298.25
Value of Work Till Date	NPR 9,419,169.78
Financial Progress (%)	16.8

7. Physical Progress

Scheduled Progress (%)	28.3
Actual Progress (%)	16.8
Scheduled Time of Construction	4 Months
Total Time Consumed	9 Months
Time Elapsed (%)	60

8. Contractor's Submittal

Contractor has been submitting some documents:

Organization chart, Quality control plan, Preliminary test reports (for Cement, Rebar, Sand, Aggregate), Progress reports in monthly basis, Construction schedule (to be updated in monthly basis), Compressive strength test reports for the concrete works in site.

9. Issues and Problems Facing at Site and Resolution

Contractor could not keep the experienced engineer and skilled worker for long period which is being affecting the quality and progress in site. Changing workers frequently in site requires new orientation classes for workers every time; creating difficulty to get improvement as expected.

10. Photographs of Site and Buildings

Site Layout:

Blocks 2-LaLiEM and 3-6C(S)

Block 2-LaLiEM

1st Block 3-6C(S)

Note: Work in other three Blocks not started yet.

11. Management Summary

As we see in S-curve above, project is not in the state of meeting Key delivery dates and is very difficult to complete the project within stipulated time because we achieved only 16.8% progress in 60% elapsed time period. Project will have time extension in such circumstance which results additional burden to project cost for

supervision/monitoring also. In my opinion, there is no any remarkable thing to be done by Consultant/Employer for the improvement of the situation.
Contractor should engage experienced Site engineer and increase resources (especially manpower) with improved practical plan in site. Contractor must have plan and resources to expedite the works in all blocks of the site in parallel way at the same time.

Reported by: Biraj KC

Designation: Resident Engineer

Date: 9th March 2017

STATUS REPORT OF EMERGENCY SCHOOL RECONSTRUCTION UNDER JICA - TPIS

1. Project Details

1.1 Name of Project: Emergency School Reconstruction Project

1.2 Client: Ministry of Education, Central Level Project Implementation Unit (CLPIU)

1.3 Development Partner: Japan International Cooperation Agency (JICA)

1.4 Name of the Consultant: OCG in association with MOHRI & EWES

1.5 Name of Contractor: M/S MB-Gauri Parbati J/V

1.6 Project District: Lalitpur

1.7 Contract Package No.: ESRP/DOE/NCB/01 – Lalitpur 1

1.8 Location of Site/Name of School: **Ashrang**, Vidhyadheshwori HS School

1.9 Contract Signed Date: 26 May 2016

1.10 Contract Duration: 15 Months

1.11 Date of the Start of Work: 2 June 2016

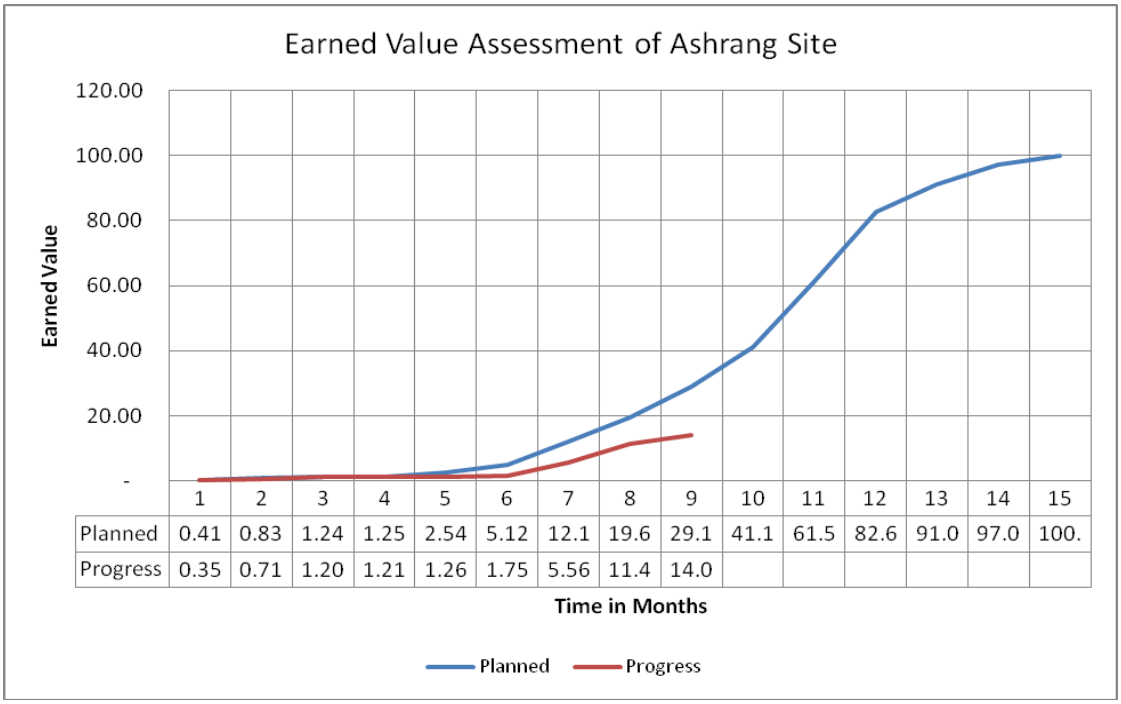
1.12 Scheduled Date of Completion: 1st Sept. 2017

1.13 Total Contract Value: NPR. 55,457,618.50 Excl. VAT

1.14 Contract Type: Unit Rate Contract

2. Report Date: 28th February 2017

3. Progress and Deviation from Plan at this Report Date (End of February 2017)



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Planned	0.41	0.83	1.24	1.25	2.54	5.12	12.1	19.6	29.1	41.1	61.5	82.6	91.0	97.0	100.
Progress	0.35	0.71	1.20	1.21	1.26	1.75	5.56	11.4	14.0						

Contractor's plan and deviation in progress can be visualized with the above Earned value analysis curve (as shown).

4. Test Metrics

Contractor has been doing Concrete cube sampling and testing for each/every structural work (RCC) in site for every concreting day. For example Column footings, Lower Tie-beam, Columns upto UTB, Upper Tie-beams, Ground floor columns, Slab etc. Besides that Contractor also performs Concrete's slump cone test, Clay content test of sand, Sieve analysis test of both sand & aggregate in site as per DLPIU/EWES engineer's instruction.

5. Change in Design

There was no any major change in Design/drawing in this site. We found little bit level differences in edge side (of ground terrace) one column and other columns of the building of one Academic block 3-6C(S). That longer Column was strengthened with attached shear walls within the footing; as per the suggestion of Sr. Structure engineer. Some modifications (in Truss, rebar in RCC members, Column footings etc.) have been issued in October 2016 and are being implemented in all sites without any difficulty since then.

6. Financial Progress

Total Contract Value	NPR 55,457,618.50
Value of Work Till Date	NPR 7,786,249.64
Financial Progress (%)	14.0

7. Physical Progress

Scheduled Progress (%)	29.1
Actual Progress (%)	14.0
Scheduled Time of Construction	5 Months
Total Time Consumed	9 Months
Time Elapsed (%)	60

8. Contractor's Submittal

Contractor has been submitting some of the documents as per requirement:

Organization chart, Quality control plan, Preliminary test reports (for Cement, Rebar, Sand, Aggregate), Progress reports in monthly basis, Construction schedule (to be updated in monthly basis), Compressive strength test reports for the concrete works in site.

9. Issues and Problems Facing at Site and Resolution

Contractor could not keep the experienced engineer and skilled workers for long period which is being affecting the quality and progress in site. Changing workers frequently in site requires new orientation classes for workers every time; creating difficulty to get improvement as expected.

10. Photographs of Site and Buildings

Site: 1st 3-6C(S), 2nd 3-6C(S), 2-LaLiEM 	1st Block 3-6C(S) 
2nd Block 3-6C(S) 	Block 2-LaLiEM 

Note: Work in other two Blocks not started yet.

11. Management Summary

As we see in S-curve above, project is not in the state of meeting Key delivery dates and is very difficult to complete the project within stipulated time because we achieved only 14.0% progress in 60% elapsed time period. Project will have time

extension in such circumstance which results additional burden to project cost for supervision/monitoring also. In my opinion, there is no any remarkable thing to be done by Consultant/Employer for the improvement of the situation.
Contractor should engage experienced Site engineer and increase resources (especially manpower) with improved practical plan in site. Contractor must have plan and resources to expedite the works in all blocks of the site in parallel way at the same time.

Reported by: Biraj KC

Designation: Resident Engineer

Date: 28th February 2017

STATUS REPORT OF EMERGENCY SCHOOL RECONSTRUCTION UNDER JICA - TPIS

1. Project Details

1.1 Name of Project: Emergency School Reconstruction Project

1.2 Client: Ministry of Education, Central Level Project Implementation Unit (CLPIU)

1.3 Development Partner: Japan International Cooperation Agency (JICA)

1.4 Name of the Consultant: OCG in association with MOHRI & EWES

1.5 Name of Contractor: M/S MB-Gauri Parbati J/V

1.6 Project District: Lalitpur

1.7 Contract Package No.: ESRP/DOE/NCB/01 – Lalitpur 1

1.8 Location of Site/Name of School: **Pyutar**, Kalidevi HS School

1.9 Contract Signed Date: 26 May 2016

1.10 Contract Duration: 15 Months

1.11 Date of the Start of Work: 2 June 2016

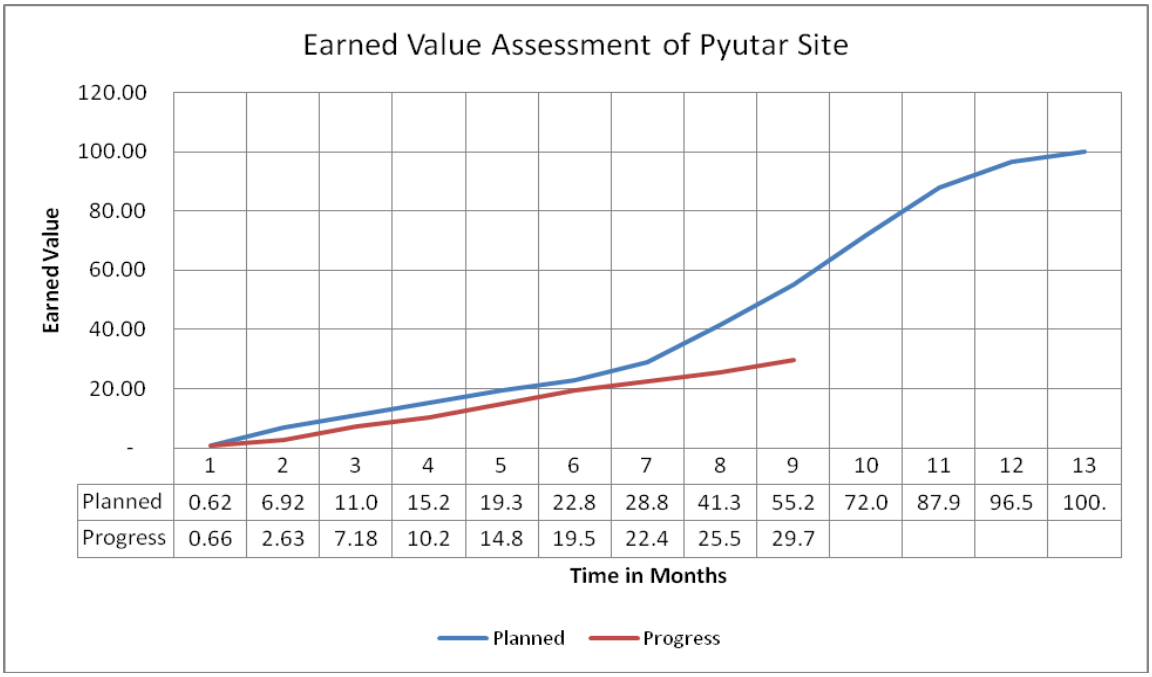
1.12 Scheduled Date of Completion: 1st Sept. 2017

1.13 Total Contract Value: NPR. 46,805,667.95 Excl. VAT

1.14 Contract Type: Unit Rate Contract

2. Report Date: 9th March 2017

3. Progress and Deviation from Plan at this Report Date (February end 2017)



	1	2	3	4	5	6	7	8	9	10	11	12	13
Planned	0.62	6.92	11.0	15.2	19.3	22.8	28.8	41.3	55.2	72.0	87.9	96.5	100.
Progress	0.66	2.63	7.18	10.2	14.8	19.5	22.4	25.5	29.7				

Contractor's plan and deviation in progress can be visualized with the above Earned value analysis curve (as shown).

4. Test Metrics

Contractor has been doing Concrete cube sampling and testing for each/every structural work (RCC) in site for every concreting day. For example Column footings, Lower Tie-beam, Columns upto UTB, Upper Tie-beams, Ground floor columns, Slab etc. Besides that Contractor also performs Concrete's slump test, Clay content test of sand, Sieve analysis test of both sand & aggregate in site as per DLPIU/EWES engineer's instruction.

5. Change in Design

There was no any major change in Design/drawing in this site. We found little bit level differences in Edge side (of ground terrace) columns and other columns of the building of total three blocks in this site; i.e. two Academic blocks and LaLiEM block. Those longer Columns were strengthened with attached shear walls within the footing; as per the suggestion of Sr. Structure engineer. Some modifications (in Truss, rebar in RCC members, Column footings etc.) have been issued in October 2016 and are being implemented in all sites without any difficulty since then.

6. Financial Progress

Total Contract Value	NPR 46,805,667.95
Value of Work Till Date	NPR 13,942,846.81
Financial Progress (%)	29.7

7. Physical Progress

Scheduled Progress (%)	55.2
Actual Progress (%)	29.7
Scheduled Time of Construction	9 Months
Total Time Consumed	9 Months
Time Elapsed (%)	60.0

8. Contractor's Submittal

Contractor has been submitting some documents:

Organization chart, Quality control plan, Preliminary test reports (for Cement, Rebar, Sand, Aggregate), Progress reports in monthly basis, Construction schedule (to be updated in monthly basis), Compressive strength test reports for the concrete works in site.

9. Issues and Problems Facing at Site and Resolution

Contractor could not keep the experienced engineer and skilled worker for long period which is being affecting the quality and progress in site. Changing workers frequently in site requires new orientation classes for workers every time; creating difficulty to get improvement as expected.

10. Photographs of Site and Buildings

1st Block 3-6C(S)	2nd Block 3-6C(S)
	
Block 2-LaLiEM	Block Tc(M)
	

11. Management Summary

As we see in S-curve above, project is not in the state of meeting Key delivery dates and is very difficult to complete the project within stipulated time because we achieved only 29.7% progress in 60% elapsed time period. Project will have time extension in such circumstance which results additional burden to project cost for supervision/monitoring also. In my opinion, there is no any remarkable thing to be done by Consultant/Employer for the improvement of the situation.

Contractor should engage experienced Site engineer and increase resources (especially manpower) with improved practical plan in site. Contractor must have plan and resources to expedite the works in all blocks of the site in parallel way at the same time.

Reported by: Biraj KC

Designation: Resident Engineer

Date: 9th March 2017

STATUS REPORT OF EMERGENCY SCHOOL RECONSTRUCTION UNDER JICA - TPIS

1. Project Details

1.1 Name of Project: Emergency School Reconstruction Project

1.2 Client: Ministry of Education, Central Level Project Implementation Unit (CLPIU)

1.3 Development Partner: Japan International Cooperation Agency (JICA)

1.4 Name of the Consultant: OCG in association with MOHRI & EWES

1.5 Name of Contractor: M/S MB-Gauri Parbati J/V

1.6 Project District: Lalitpur

1.7 Contract Package No.: ESRP/DOE/NCB/01 – Lalitpur 1

1.8 Location of Site/Name of School: **Thuladurlung**, Jwaladevi Primary School

1.9 Contract Signed Date: 26 May 2016

1.10 Contract Duration: 15 Months

1.11 Date of the Start of Work: 2 June 2016

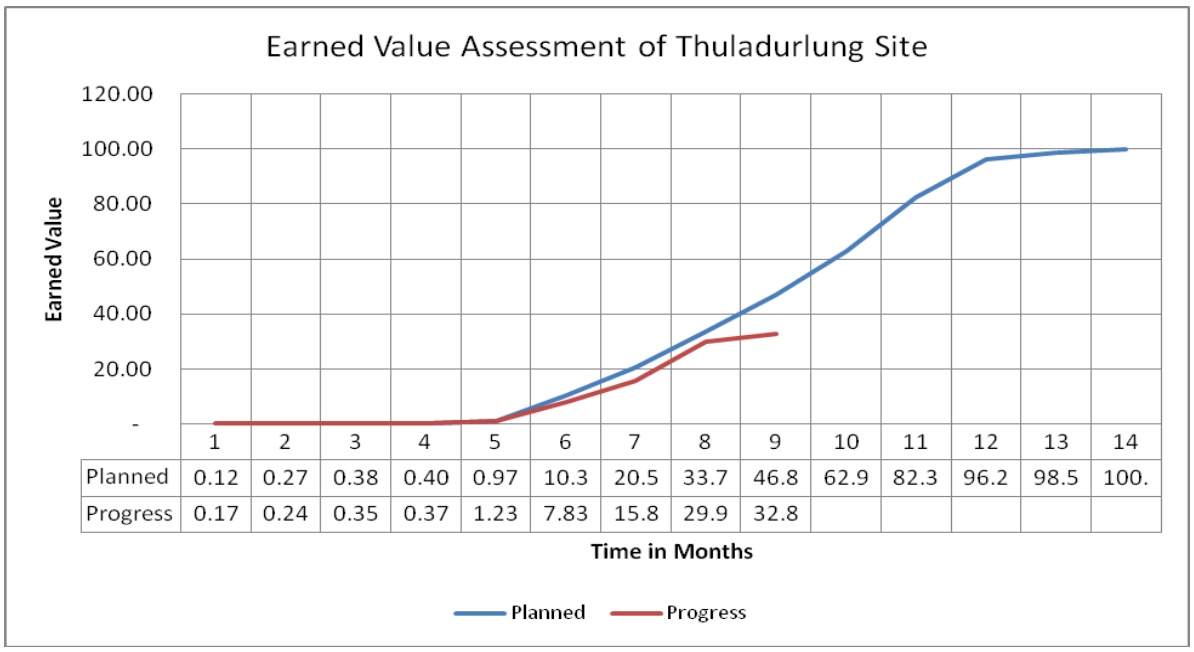
1.12 Scheduled Date of Completion: 1st Sept. 2017

1.13 Total Contract Value: NPR. 27,731,553.80 Excl. VAT

1.14 Contract Type: Unit Rate Contract

2. Report Date: 9th March 2017

3. Progress and Deviation from Plan at this Report Date (End of February 2017)



	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Planned	0.12	0.27	0.38	0.40	0.97	10.3	20.5	33.7	46.8	62.9	82.3	96.2	98.5	100.
Progress	0.17	0.24	0.35	0.37	1.23	7.83	15.8	29.9	32.8					

Contractor's plan and deviation in progress can be visualized with the above Earned value analysis curve (as shown).

4. Test Metrics

Contractor has been doing Concrete cube sampling and testing for each/every structural work (RCC) in site for every concreting day. For example Column footings, Lower Tie-beam, Columns upto UTB, Upper Tie-beams, Ground floor columns, Slab etc. Besides that Contractor also performs Concrete's slump cone test, Clay content test of sand, Sieve analysis test of both sand & aggregate in site as per DLPIU/EWES engineer's instruction.

5. Change in Design

There was no any major change in design/drawing in this site. We had made little bit layout change of building blocks initially which did not affect the work progress in site. Some modifications (in Truss, rebar in RCC members, Column footings etc.) have been issued in October 2016 and are being implemented in all sites without any difficulty since then.

6. Financial Progress

Total Contract Value	NPR 27,731,553.80
Value of Work Till Date	NPR 9,094,757.19
Financial Progress (%)	32.8

7. Physical Progress

Scheduled Progress (%)	46.8
Actual Progress (%)	32.8
Scheduled Time of Construction	5 Months
Total Time Consumed	9 Months
Time Elapsed (%)	60.0

8. Contractor's Submittal

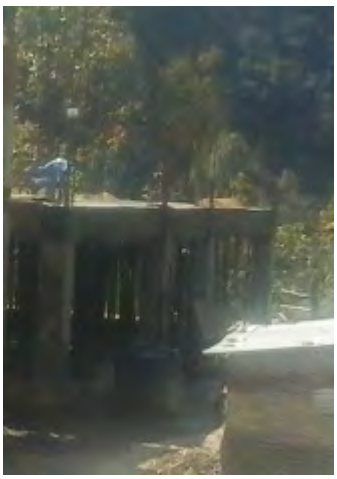
Contractor has been submitting some documents:

Organization chart, Quality control plan, Preliminary test reports (for Cement, Rebar, Sand, Aggregate), Progress reports in monthly basis, Construction schedule (to be updated in monthly basis), Compressive strength test reports for the concrete works in site.

9. Issues and Problems Facing at Site and Resolution

Contractor could not keep the experienced engineer and skilled worker for long period which is being affecting the quality and progress in site. Changing workers frequently in site requires new orientation classes for workers every time; creating difficulty to get improvement as expected.

10. Photographs of Site and Buildings

<table>
<tr><td>Site layout:
  </td><td>Block 2-4C(S)
  </td></tr>
<tr><td>Block 2-4C(S)-A
  </td><td>Block 2C(S)
  </td></tr>
</table>

Note: Work in block Tc(S) not started yet.

11. Management Summary

As we see in S-curve above, project is not in the state of meeting Key delivery dates and is very difficult to complete the project within stipulated time because we achieved only 32.8% progress in 60% elapsed time period. Project will have time extension in such circumstance which results additional burden to project cost for supervision/monitoring also. In my opinion, there is no any remarkable thing to be done by Consultant/Employer for the improvement of the situation.
Contractor should engage experienced Site engineer and increase resources (especially manpower) with improved practical plan in site. Contractor must have plan and resources to expedite the works in all blocks of the site in parallel way at the same time.

Reported by: Biraj KC

Designation: Resident Engineer

Date: 9th March 2017

STATUS REPORT OF EMERGENCY SCHOOL RECONSTRUCTION UNDER JICA - TPIS

1. Project Details

1.1 Name of Project: Emergency School Reconstruction Project

1.2 Client: Ministry of Education, Central Level Project Implementation Unit (CLPIU)

1.3 Development Partner: Japan International Cooperation Agency (JICA)

1.4 Name of the Consultant: OCG in association with MOHRI & EWES

1.5 Name of Contractor: M/S MB-Gauri Parbati J/V

1.6 Project District: Lalitpur

1.7 Contract Package No.: ESRP/DOE/NCB/01 – Lalitpur 1

1.8 Location of Site/Name of School: **Badikhel**, Pathpradarshak Secondary School

1.9 Contract Signed Date: 26 May 2016

1.10 Contract Duration: 15 Months

1.11 Date of the Start of Work: 2 June 2016

1.12 Scheduled Date of Completion: 1st Sept. 2017

1.13 Total Contract Value: NPR. 45,299,999.80 Excl. VAT

1.14 Contract Type: Unit Rate Contract

2. Report Date: 9th March 2017

3. Progress and Deviation from Plan at this Report Date (End of February 2017)

Contractor's plan and deviation in progress can be visualized with the above Earned value analysis curve (as shown).

4. Test Metrics

Contractor has been doing Concrete cube sampling and testing for each/every structural work (RCC) in site for every concreting day. For example Column footings, Lower Tie-beam, Columns upto UTB, Upper Tie-beams, Ground floor columns, Slab etc. Besides that Contractor also performs Concrete's slump cone test, Clay content test of sand, Sieve analysis test of both sand & aggregate in site as per DLPIU/EWES engineer's instruction.

5. Change in Design

There were altogether five blocks to be constructed in Badikhel site originally in Contract. We could construct only three blocks later due to land availability and SMC suggestion. The location of 3-6C(S) block has been shifted due to electricity transmission line in Badikhel; some site development works like footpath pavement layouts are modified accordingly.
Some modifications (in Truss, rebar in RCC members, Column footings etc.) have been issued in October 2016 and are being implemented in all sites without any difficulty since then.

6. Financial Progress

Total Contract Value	NPR. 45,299,999.80
Value of Work Till Date	NPR. 16,194,840.53
Financial Progress (%)	35.7

7. Physical Progress

Scheduled Progress (%)	70.0
Actual Progress (%)	35.7
Scheduled Time of Construction	9 Months
Total Time Consumed	9 Months
Time Elapsed (%)	60.0

8. Contractor's Submittal

Contractor has been submitting some documents:

Organization chart, Quality control plan, Preliminary test reports (for Cement, Rebar, Sand, Aggregate), Progress reports in monthly basis, Construction schedule (to be updated in monthly basis), Compressive strength test reports for the concrete works in site.

9. Issues and Problems Facing at Site and Resolution

Contractor could not keep the experienced engineer and skilled worker for long period which is being affecting the quality and progress in site. Changing workers frequently in site requires new orientation classes for workers every time; creating difficulty to get improvement as expected.

10. Photographs of Site and Buildings

Site: 	2-LaLiEM & Tc(M) 
2-LaLiEM, Tc(M), Septic tank 	3-6C(S) 

11. Management Summary

As we see in S-curve above, project is not in the state of meeting Key delivery dates and is very difficult to complete the project within stipulated time because we achieved only 35.7% progress in 60% elapsed time period. Project will have time extension in such circumstance which results additional burden to project cost for supervision/monitoring also. In my opinion, there is no any remarkable thing to be done by Consultant/Employer for the improvement of the situation.

Contractor should engage experienced Site engineer and increase resources (especially manpower) with improved practical plan in site. Contractor must have plan and resources to expedite the works in all blocks of the site in parallel way at the same time.

Reported by: Biraj KC

Designation: Resident Engineer

Date: 9th March 2017