



Mainstreaming Disaster Risk Reduction in the Education Sector in the Philippines

Integrating Disaster Risk Reduction in the School Curriculum
Impacts of Disasters on the Education Sector
School Construction: Current Practices and Improvements Needed

April 2008



MAINSTREAMING

OF DISASTER RISK REDUCTION IN THE EDUCATION
SECTOR IN THE PHILIPPINES

- Integrating DRR in the School Curriculum: Project Experience
- Study on Impact of Disasters on the Education Sector
- School Construction: Current practices and Improvements needed

APRIL 2008



EUROPEAN COMMISSION



**Advocacy and Pilot Project Implementation in Education Sector
in South East Asia**

Impact of Disasters
on the Education Sector in the Philippines

by

Center for Disaster Preparedness

Emmanuel M. Luna, Lead Researcher

Maria Leonila P. Bautista, Research Associate

Mark P. De Guzman, Research Associate

Under Advocacy and Pilot Project Implementation in Education Sector in South East Asia this study report is prepared by Centre for Disaster Preparedness (CDP), the Philippines



Emmanuel M. Luna, Ph.D.

Maria Leonila P. Bautista, D. Sc.

Mark P. De Guzman, D. Eng. (Candidate)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

PART A:

**OUTCOMES OF THE MAINSTREAMING OF DISASTER RISK REDUCTION
IN EDUCATION PROJECT**

- A. Project Background / **10**
- B. Activities in 3 South East Asian Countries / **11**
- C. Activities under the project in Cambodia / **19**

PART B:

IMPACT OF DISASTERS ON THE EDUCATION SECTOR IN THE PHILIPPINES

I. INTRODUCTION

- A. Background of the Study / **32**
- B. Objectives of the Study / **33**
- C. Methodology and Limitations / **33**

II. EDUCATION SECTOR AND INSTITUTIONS IN COMBATING DISASTERS

- A. **Structure and Functions of the Department of Education / 34**
- B. **Philippine Disaster Management System / 38**
 - 1. National Disaster Coordinating Council / **38**
 - 2. The Department of Education and the Disaster Management System / **43**
 - 3. Agency Coordination in Pre, During and Post Disaster Events / **46**
 - 4. Education in Emergencies: The Philippine Cluster in DRR / **47**

III. SOCIAL AND ECONOMIC IMPACTS OF DISASTERS

- A. Present Situation of the Education Sector / 48**
- B. Drop Out Rates Related to Disaster / 50**
- C. Disruptions Caused by Disaster on Schools / 51**
 - 1. Facilities Used as Emergency Shelter / 51
 - 2. Effects of Disasters on Students / 53
 - 3. Effects of Disasters on Teachers / 53
 - 4. Effects of Disasters on Personnel / 54
 - 5. General Effects of Disasters / 54
 - 6. Effects of Man-Made Disasters Such as Armed Conflict / 55
 - 7. Case on Effects of Disaster in Education / 56
- D. Coping Mechanisms and Positive Effects of Disasters / 57**
 - 1. Coping Mechanism of Teachers / 57
 - 2. Positive Effects of Disasters / 57
- E. Recommendations for Minimizing the Socio-Economic Impacts of Disaster on the Education Sector / 60**

IV. PHYSICAL IMPACTS OF DISASTERS ON EDUCATION SECTORS

- A. Country and Vulnerability / 61**
- B. Organization Structure for Physical Development / 62**
- C. Impact of Past Disasters / 63**

PART C:

SCHOOL CONSTRUCTION IN THE PHILIPPINES

- D. Analysis of the Budget for Education and Building / 66**
- E. Process of Construction of School Buildings / 66**
 - 1. Agency Roles in Building Schools / 66
 - 2. Proposed Plans for Building Schools in the Next Five Years / 73
 - 3. Human Resource Capacity for Safe Construction Practices / 75
- F. Standards and Guidelines for Construction of School Buildings / 75**
 - 1. Design of School Buildings / 78
 - 2. Design Requirements / 79
 - 3. Building Risk Reduction Requirements / 80
 - 4. Identification of Sites / 81
 - 5. Standard Classroom Design / 82

- G.** Review of Typical plans for School Buildings Followed by DepEd / **82**
- H.** Pipeline and Continuing Projects for School Construction and Other Programs for DepEd / **83**
 - 1. School Construction Projects by the Dep Ed / **83**
 - 2. The Millennium School Design Competition / **84**
 - 3. New Technology to Fast-Track Classroom Construction / **84**
 - 4. Education Related Projects by the Asian Development Bank / **86**
 - 5. Foreign Assisted Project for the Department of Education / **88**
- I.** Recommendations for Introduction of Disaster Risk Concerns in the Construction of Schools / **92**
 - 1. Disaster Risk Reduction Measures / **92**
 - 2. School Sites / **92**
 - 3. Structural Design / **93**
 - 4. DepEd Architects and Engineers' Perspective / **96**

V. CASE STUDIES OF BEST PRACTICES IN INTEGRATING DRR IN EDUCATION

- Case No.1:** Policies for Disaster Risk Reduction in the Education Sector / **96**
- Case No.2:** Buildings Safe Learning Environment: Safe School Project of UNICEF / **99**
- Case No.3:** School Building Design for Disaster Reduction:
The Learning and Public Use School Building (LAPUS Building) / **102**
- Case No.4:** NGO Involvement in Education: Child Centered Disaster Risk Reduction / **104**
- Case No.5:** Education as a Strategy for Psychosocial Recovery for Children in Emergencies / **107**

PART D:

RECOMMENDATIONS AND SUGGESTED NEXT STEPS

VI. RECOMMENDATIONS

REFERENCES APPENDICES

- A.** Questionnaires for the Survey on the Impact of Disasters in Education (A1 & A2) / **119**
- B.** The Principal-Led School Building Program / **127**
- C.** Cost of DepEd School Buildings / **148**
- D.** Presentation on Safer School Construction in the Philippines / **151**
- E.** Recommended Structural Detailing Practices / **155**
- F.** Natural Hazard Risks in Philippines / **158**

LIST OF TABLES

Table 1:	Total number of Training of Trainers (TOT) conducted for teachers and officials in project countries / 12
Table 2:	Outputs/Indicators of the Project / 13
Table 3:	Total pilot schools in Philippines / 22
Table 4:	Personnel Complement of the Department of Education / 37
Table 5:	Basic Education Key Indicators, SY 2002 – 2003 (in %) / 50
Table 6:	Evacuation Practices Among the Five Case Schools / 52
Table 7:	General Effects of Disaster in the School / 54
Table 8:	Losses Due to Disasters, 1984- 2006 / 63
Table 9:	Damages to School by Earthquakes / 64
Table 10:	Cost of Academic Classrooms / 74
Table 11:	Classroom Designs / 74
Table 12:	Cost of Toilet Designs / 75
Table 13:	Descriptions of Building Structures / 76
Table 14:	Types of Buildings / 77
Table 15:	Priorities for Building Construction / 81
Table 16:	Target Classroom Size / 84
Table 17:	Possible Sources of Funds for the Dura-Quick Project / 85
Table 18:	Education Projects by the Asian Development Bank / 86
Table 19:	Foreign-Assisted Projects in Basic Education (As of June 2007) / 88

LIST OF FIGURES

Figure 1.	Organizational Chart of the Department of Education / 36
Figure 2.	The Calamity Disaster and Fire Control Group at DepEd / 44
Figure 3.	Document/Process Flow for Suspension of Work in Government Offices and Classes During Inclement Weather / 46
Figure 4.	Coordination Arrangement of the Education Cluster / 49
Figure 5.	The Negative Socio-Economic Impact of Disaster in Education Sector / 59
Figure 6.	Functional Organizational Structure Physical Facilities and Schools Engineering Division (PFSED) / 63
Figure 7.	Allocation Procedure of New Buildings / 70
Figure 8.	Critical Stages of Construction / 71
Figure 9.	Typical Slab Elevation / 93
Figure 10.	Typical Beam Elevation / 94
Figure 11.	Size of Beams and Bars / 95
Figure 12-A.	Two slopes with gable ends / 96
Figure 12-B.	Hipped Type with four slopes / 96
Figure 13.	Strategies for Disaster Risk Reduction in Education / 109

LIST OF ABBREVIATIONS AND ACRONYMS

BEE	Bureau of Elementary Education
BSE	Bureau of Secondary Education
BNFE	Bureau of Non formal Education
CBEWS	Community-Based Early Warning System
CSCAND	Collective Strengthening for Community Awareness for Natural Disasters
DECS	Department of Education, Culture and Sports
DepEd	Department of Education
DIPHECO	Disaster Preparedness of the European Commission
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EDPITAF	Educational Development Projects Implementing Task Force
EIA	Environmental Impact Assessment
GOP	Government of the Philippines
HNC	Health and Nutrition Center
IMCS	Instructional Materials Council Secretariat
IMC	Instructional Materials Council
LCC	Literacy Coordinating Council
MRC	Mekong River Commission
NDCC	National Disaster Coordinating Council
NETRC	National Education Testing and Research Center
NEAP	National Educators Academy of the Philippines
NSTIC	National Science Teaching Instrumentation Center
OCD	Office of Civil Defense
PHIVOLCS	Philippine Institute of Volcanology and Seismology
RCC	Regional Consultative Committee
TEC	Teacher Education Council
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNICEF	United Nations Children's Fund

PART A: OUTCOMES OF THE MAINSTREAMING OF DISASTER RISK REDUCTION IN EDUCATION PROJECT

A) PROJECT BACKGROUND

The RCC is comprised of 30 members from 26 Countries who are working in key Government positions in the National Disaster Management systems of countries of the Asian region.

The Regional Consultative Committee (RCC) on Disaster Management was established at the initiative of the Asian Disaster Preparedness Center (ADPC) in 2000. The RCC is comprised of 30 members from 26 countries who are working in key government positions in the National Disaster Management systems of countries of the Asian region. A key priority identified by the RCC is the integration of disaster risk consideration into development planning. To initiate action on this agreed direction, the RCC program on Mainstreaming Disaster Risk Reduction into Development Policy, Planning and Implementation (MDRD) was launched at the 4th RCC meeting in Bangladesh in March 2004. In its 5th meeting in Hanoi, the RCC adopted the Hanoi 5 statement on Mainstreaming Disaster Risk Reduction into Development in Asian Countries, which prioritizes mainstreaming of Disaster Risk Reduction (DRR) to be initiated in the national development planning process as well as in six sectors, namely agriculture, urban planning and infrastructure, education, health, housing and financial services. Within the education sector, the Hanoi RCC 5 statement identified the following sub-themes to initiate mainstreaming of DRR:

- Integrating DRR modules into school curriculum
- Promoting hazard resilient construction of new schools
- Introducing features into schools for their use as emergency shelters

MRRD-Education project includes four main activities, namely:

- i) Initiating Mainstreaming of Disaster Risk Reduction into Secondary School Curriculum,*
- ii) Study on Impacts of Disasters on the Education Sector,*
- iii) Advocacy Workshop on Mainstreaming Disaster Risk Reduction into the Education Sector,*
- and iv) Stakeholder consultation as follow up to the Advocacy Workshop.*

Realizing the importance of mainstreaming of DRR in the Education Sector as identified by the RCC, one of the most recent interventions was “Support to Implementation of Hyogo Framework for Action (HFA) through Mainstreaming of Disaster Risk Reduction into Development Planning, Policy and Implementation in Asia: Advocacy and Pilot Implementation Project in Education Sector in 3 South East Asian RCC member countries (Cambodia, Lao PDR and the Philippines)”. The project (hereinafter referred to as MDRD-Education) has been implemented by the UNDP and ADPC, with support from ECHO.

Under the RCC umbrella, this collaborative (ECHO-UNDP-ADPC) project was implemented as a major contribution to the implementation of the Hyogo Framework for Action. The Project was designed with the primary focus to assist the Ministry of Education in 3 RCC countries to implement a Priority Implementation Partnership (PIP), working with the National Disaster Management Organizations, to undertake integration of DRR into the secondary school curriculum and promoting resilient construction of new schools using research on the past impact of disasters on the Education sector. Building on the current and likely future initiatives to support the Hyogo Framework for Action, the MRRD-Education project includes four main activities, namely:

- i) Initiating Mainstreaming of Disaster Risk Reduction into Secondary School Curriculum,
- ii) Study on Impacts of Disasters on the Education Sector,
- iii) Advocacy Workshop on Mainstreaming Disaster Risk Reduction into the Education Sector, and
- iv) Stakeholder consultation as follow up to the Advocacy Workshop.

The Phase I (2007-2008) of this project helped advance the mainstreaming of disaster risk reduction in these 3 countries in Asia, strengthen networking among disaster risk reduction practitioners and enhanced the government commitment in making communities safer and upholding government responsibility to ensure public safety.

B) ACTIVITIES IN 3 SOUTH EAST ASIAN COUNTRIES

Initiation of Mainstreaming of DRR: The NCDM Cambodia, NDMO Lao PDR, and NDCC Philippines, together with the respective Ministry of Education and other relevant organizations in the 3 countries were briefed about the project by ADPC. The details of the project were also shared with NGOs and international organizations in the countries such as World Bank, ADB, Save the Children - Australia, World Vision, UNESCO, UNICEF, EU, AusAid, USAID, etc. A Project Working Group (PWG) was formed for each of the 3 countries. The PWG meetings were regularly held in each country during the project period.

Project Technical Working Group: Ministry of Education with National Disaster Management Office in 3 project countries formed a Technical Working Group (TWG) to discuss the proposals for integrating DRR. The TWG members consist of curriculum specialists; lessons plan writers and education specialists from MOE and DRR specialists from NDMO and ADPC.

Development of DRR Module: Each country has developed a country specific DRR curriculum. There is local flavor to the curriculum e.g., Lao PDR has added traffic accidents in the curriculum along with a chapter on alcoholism and drug abuse. Similarly, the Philippines has added a chapter on volcanic eruptions in the curriculum. This is a hazard very specific to the Philippines. The curriculum of each country reflects the needs and risk assessment of the country government.

The curriculum has been developed for the lower secondary in the three countries; specifically Grade 8 in Cambodia, in Lao PDR the module has been integrated in the Natural Science and Social Studies of Grade 7, in the Philippines the DRR module has been integrated in the Science and Social Sciences subjects of Grade 7. Draft modules have received comments from UNICEF, and were shared with Save the Children, local NGOs and donors.

Except the DRR modules developed under this project, there is no educational program on integrating DRR into the school curriculum in Cambodia and Lao PDR yet. In the Philippines, only some DRR concepts can be found in existing subjects but there was no curriculum related to DRR.

The Ministries of Education in all 3 countries have endorsed the DRR module. The letters of endorsement/ proposals for integration are annexed.

The curriculum has been developed for the lower secondary in the three countries; specifically Grade 8 in Cambodia, in Lao PDR the module has been integrated into Natural Science and Social Studies of Grade 7, in the Philippines the DRR module has been integrated into Science and Social Sciences subjects of Grade 7. Draft modules have received comments from UNICEF, and were shared with Save the Children, local NGOs and donors.

Teaching of the DRR module: Starting from October 2007, DRR module was taught in classrooms at the selected schools. Before this, the teachers were trained on DRR module, lessons plan, and teaching techniques on DRR curriculum in the project countries.

Table 1/ Total number of Training of Trainers (TOT) conducted for teachers and officials in project countries

Country	Province Name	No. of teachers trained	No. of officials trained	TOT Venue
Cambodia	Kandal & Prey Veng	12	20	Phnom Penh
	Kandal, Prey Veng & Kratie	48	18	Phnom Penh
	Takeo, Kompong Chhnang & Kampong Cham (12 districts from 3-province)	51	0	Phnom Penh
Lao PDR	Khammoune and Vientiane	15	17	Bolikhamsay province
	3 districts from Khammoune and 2 districts from Vientiane	28	18	Bolikhamsay province
	2 districts from Khammoune & 3 districts from Bolikhamsay	15	35	Khammoune province
	Sayaboury	26	20	Sayaboury province
Philippines	Visayas	4		Southern Leyte
	Luzon	10		Albay
	Mindanao	9		Basilan
	17 regions	51	24	Antipolo City
Total		269	162	

Monitoring of Teaching: Teaching of the DRR module in classrooms was monitored in December 2007 and January 2008 by visiting the pilot schools. The monitoring was done by curriculum specialists from Ministry of Education, NDMO focal point, project working group members and school principals/school directors in project countries. Based on the comments some lesson plans were revised.

School Safety Day: A new initiative was introduced by ADPC to evaluate the teaching and the effectiveness of the module. This was done by organizing a School Safety Day which includes activities such as hazard hunt, poster painting competition, and a quiz in the schools. This was conducted in January - February 2008. ADPC provided concept notes of school safety week, hazard hunt, questionnaires, and technical support.

Organization of a School Safety Day including activities such as hazard hunt, poster painting competition and a quiz in the schools.

During school safety day at the pilot schools in the project countries, students from other classes also participated in hazard hunt, quiz, and poster painting competition. The (15) outstanding students from Cambodia and (9) outstanding students from Lao presented their experience of the school safety day to the participants of the National Advocacy Workshops. The students of Lao PDR conducted a quiz competition and asked questions of the participants of the workshop. The students of Cambodia presented skits on their understanding of mitigation measures. The 15 students from the two pilot schools in the Philippines had a poster painting competition and were evaluated during the National Advocacy Workshop. They explained their paintings and participated in a quiz.

Outcomes: The total number of beneficiaries is **2,636** persons; amongst them (2,205) are students from the 3 countries. There are 431 teachers, provincial and district educational officers and other stakeholders who also participated in DRR awareness raising sessions and have been oriented in the three project countries.

The total number of beneficiaries is 2,636 persons; amongst them (2,205) are students from the 3 countries.

	Cambodia	Lao PDR	Philippines
Provinces	Achieved = 3	Achieved = 2	Achieved = 3
Districts	Achieved = 4	Achieved = 8	Achieved = 3
Grade	Grade-8	Grade-7	Grade-7
Subject/country	2-subjects: Geography and Earth	2 subjects: Natural Science and Social Science	2 subjects: Science - and Social Studies
No of Schools	Target= 3 Achieved = 9	Target = 3 Achieved = 8 + 2	Target = 3 Achieved = 6
No of Students	Target = 100 Achieved = 847 (239 Girls)	Target = 100 Achieved = 738 (242 Girls)	Target = 100 Achieved = 1020 (548 Girls)
No of TOTs (Training of Teacher/Trainer)	Target = 1 Achieved = 3	Target = 1 Achieved = 2	Target = 1 Achieved = 3
No of Officials/ Teachers trained	Target = 25 Achieved: Teachers = 109 Officials = 18	Target = 25 Achieved: Teachers = 30 Officials = 18	Target = 25 Achieved = 23
No of teachers	Target = 9 Achieved = 109	Target = 9 Achieved = 30	Target = 9 Achieved = 23

Table 2/ Outputs/ Indicators of the Project

The details of the beneficiaries in each country are as follows:

Cambodia

Total (159) officials and teachers including officers from secondary school education department, teacher's training department, provincial and district education officers, directors, deputy directors, and principals from (10) pilot schools have been trained and 447 students (amongst them 239 are girls) have been taught the DRR module. In addition, the Senior Minister MOEYS H. E. Kol Pheng actively participated in the National Workshop.

Lao PDR

There were 484 students with 242 girls and (164) officials and teachers in Lao PDR who participated in awareness raising, training and were taught disaster preparedness and risk reduction. In collaboration with Save the Children Australia, NRIES provided training to (10) teachers from Sayaboury province and DRR module have been taught to 54 students at Ethic School and 200 students at Luk-sip-pet school, in Sayaboury. Thus, in total (738) students from (15) schools have learned DRR module in classrooms. In addition, the Minister of Labor and Social Welfare and Chief of Cabinet, Ministry of Education actively participated in the National Workshop.

Philippines

In Philippines 1,020 students, including 548 girls from (6) pilot schools have been taught DRR module. In the orientation session (23) teachers participated. Regional supervisors, regional directors, school principals from pilot schools and officers from DepEd also participated in DRR teaching observation and evaluation in classrooms. A TOT has added (75) more beneficiaries that include teachers, trainers and education officers. In addition, the Secretary of the Office of Civil Defense and the Undersecretary of DepEd actively participated in the National Workshop.

Study on impact of disasters: Three studies on the impact of disasters in the education sector in the three countries were conducted under the project. Initially, the 3 institutes (namely EIC, URI and CDP) from the 3 project countries had submitted the first draft to ADPC in January 2008 and ADPC gave feedback and suggestions to them. The UN agencies and concerned ministries in the project countries also provided inputs to the studies. The draft papers were also posted to UN agencies and NGOs to give comments. The feedback was incorporated in the reports.

The draft study papers were showcased at the National Advocacy workshop. The presentations on the study papers were made at the National Advocacy Workshop at Phnom Penh, Vientiane, and Manila. The feedback obtained from the workshops has been incorporated in the final version of the reports before printing for dissemination.

The outputs of the studies have raised a wide range of DRR issues associated with the education sectors in the 3 project countries. The valuable information ranges from basic information on socio-economic and physical impacts of disasters to building codes, structural design and construction materials. The studies showcase the structure of the education sector in general, disaster reduction/management in specific along with the institutional arrangement for country specific DRR. The studies have captured the process followed in each of the project countries for school construction, the stakeholders involved, and the current and future programs on construction of schools. The studies have emphasized the need for improved hazard resilience of school construction. This need was further emphasized by the national governments during the National Advocacy Workshops. The studies and the debates on the studies in the National Workshops have recognized the importance to partner closely with the Department of school construction within the Ministry of Education and to advocate for integrating hazard resilient construction techniques in their programs and projects. This need was reinforced by all participants of the workshops – Government, NGO, UN and donors.

National Advocacy Workshops: National Advocacy Workshop was conducted in the 3 project countries on the following dates:

- Lao PDR: February 28th – 29th 2008 in Vientiane
- Cambodia: March 19th – 20th 2008 in Phnom Penh
- Philippines: March 31st in Manila

Officials from the Ministry of Education, National Disaster Management Office, project working group members, curriculum specialists of MOE, officials from Ministry of Planning and Finance, Ministry of Transportation, Communication and Post, Provincial and district educational officers from pilot provinces, provincial and district disaster management officers, school Directors and Principals, representatives from UN agencies such as JICA, UNICEF, UNDP and representatives from NGOs such as World Vision, Save the Children Federation, Oxfam GB, Action Aid, AusAID, MRC, GTZ, Lao Red Cross, World Concern and Oxfam Australia participated in the workshops. Representatives from World Bank, ADB and media also participated. They presented their on-going and upcoming projects. Study paper on impact of disasters on the education sector was presented in the workshop for feedback and comments from participants.

The key achievements of the National Advocacy workshop were:

- Showcasing the results and the experience from the implementation of the project on mainstreaming disaster risk reduction in the education sector (MDRD Education).
- Showcasing the recommendations of the study on the impacts of disasters in the education sector in the countries, with specific focus on safer construction of school buildings.
- Recommendations from the participants on the next steps for integration of DRR in the education sector.
- Sharing and learning from the experience of other NGOs and donors in integrating DRR concerns in the education sector.
- Suggestions on and an endorsement by the government of, future programmatic activity for the integration of DRR in the education sector of the countries to ensure compliance with the Hyogo Framework for Action.

Some students from the pilot schools also presented their knowledge on DRR under the theme "Hear the children" at the National Advocacy workshops. (9) students from (3) pilot schools in Lao PDR, (15) students from (3) pilot schools in Cambodia and (15) students from (3) pilot schools in the Philippines participated. As a special activity the children demonstrated the theme "Living with floods" in their own way by means of skits, on the 2nd day of the workshop in Cambodia.

During the workshop, the participants were divided into groups to discuss on further curriculum development and next steps to be undertaken by the Ministry of Education and National Disaster Management Office based on the recommendations of the country study paper. Participants highlighted the need for further actions for mainstreaming DRR in the education sector, because though the execution of the project has addressed a gap in the implementation of the HFA in the 3 countries, it has also exposed some critical deficiencies which need to be addressed through further programmatic activity. The country governments have expressed the need for expansion and continuation of the activities under the MDRD Education project.

Some students from the pilot schools also presented their knowledge on DRR under the theme “Hear the children” at the National Advocacy workshops. (9) students from (3) pilot schools in Lao PDR, (15) students from (3) pilot schools in Cambodia and (15) students from (3) pilot schools in the Philippines participated. Questions were asked relating to fire, floods, violence and causes of disasters, etc. Students were also asked the meaning of risk, hazard and disaster by the participants. Students also asked several questions to the participants. The selected posters from school safety day activities were also presented, and the students were asked to explain their work. As a special activity the children demonstrated the theme “Living with floods” in their own way by means of skits, on the 2nd day of the workshop in Cambodia.

Stakeholder Consultations:

This project has played an important role in establishing linkages and networks. A representative from each country made a presentation on the experiences of integrating DRR into the curriculum at the Asia Pacific Regional Workshop on School Education and DRR, at Bangkok 8-10 October 2007. Similarly, there were presentations by the country representatives at the RCC meeting in Sri Lanka in May 2008. At the RCC meeting, the need for future programs to build on the projects activities in the RCC member countries were emphasized through presentations and interactions. Representatives also made presentations and shared information during the national workshops in the 3 countries. The idea was that all 3 countries would have participated in the national workshops so they can share experiences.

Contacts have been established with donors and other stakeholders since the initiation of the project. There have been continuous consultations with the stakeholders. Many organizations participated in the National Workshops and made presentations, contributed to the outcomes of the workshop and played an active role in the recommendations of both the study and the workshop. Stakeholder consultation has been done not only after the workshop, but more before the workshops, especially during the project implementation. The stakeholders with whom follow up meetings have been conducted, and are continuing include - UNICEF, Red Cross, Save the Children, WB, ADB, European Union, AusAid and various Government departments. The discussions focused on:

1. Follow-up on the recommendations of the National Workshops and the Studies.
2. Discussion on the pipeline and on-going projects where there is possibility of integrating DRR.
3. Collaboration and further engagement in the future.

In addition, there are also discussions on the priorities for the future and for up-scaling the achievements of this program. Some suggestions have been:

- Extension of the project activities to other countries
- Expansion of the project activities in the 3 countries to cover primary and high school
- Expansion of the project activities to higher education at University level, specifically in the Engineering and Architecture colleges
- Program on safe school buildings (including development of guidelines and codes; training programs for engineers, architects and masons; capacity building of training institutes, capacity building of governments)
- Program on school emergency planning (development of guidelines, training for teachers and officials, conduct of mock drills)

Sharing of Project Results in Regional & Global Fora:

In addition, the results of the project have been showcased internationally for further consultation with stakeholders:

- The project was showcased at the Global Platform for DRR, Geneva 4-8 June 2007
- The project activities were showcased at the Asia Pacific Regional Workshop on School Education And Disaster Risk Reduction 8-10 October 2007, Bangkok, Thailand which was jointly organized by UN/ISDR, UNESCO, UNICEF, UN/ESCAP, UNCRD, UN/OCHA, IFRC, ASEAN, ADPC, ADRC and ASB. The focal points from the MOE from all 3 countries participated in the workshop, presented the work done under the project in their country, and benefited from sharing of information from over 287 representatives from the region.
- The project was highlighted at the Workshop on Education for Disaster Risk Reduction (EDRR) at the 4th International Conference on Environmental Education, 26-28 November 2007, Ahmedabad, India.
- The results of the project were showcased and discussed at the Regional Consultative Committee on Disaster Management meeting at Colombo in May 2008. The 3 countries made presentations to show their results and share information with other RCC members who may want to adopt a similar approach for mainstreaming DRR in the education sector.
- The experiences of the MDRD Education project have helped refine the RCC Guidelines on Curriculum Development. These guidelines were prepared earlier and were used to guide this project, but the lessons learned from the project were also incorporated in the guidelines. These guidelines were shared for further consultation at the Regional Consultative Committee meeting at Colombo in May 2008.
- The results of the project were also showcased at the International Conference on School Safety May 14-16th 2008, Islamabad, Pakistan.

Mainstreaming and Linkages:

The national authorities and other stakeholders in all the three countries confirmed that the project addresses the needs and the country priority to mainstreaming DRR into the education sector and is considerably contributing to the implementation of the Hyogo Framework in particular to priority area 3.2.

- All three countries have confirmed with an official letter to prioritise the mainstreaming of DRR into the education sector, to disseminate and teach DRR module in the secondary school.
- Cambodia and Philippine governments have already integrated DRR in the education sector into the Strategic National Action Plan, (SNAP). Lao PDR Government is in the process of doing so, given that SNAP process is not yet finalised.
- The country authorities have expressed as well their commitment to elaborate or review the existing building codes and construction guidelines for school building, as consequences of the findings of the research studies of the impact of disaster in the education sector.

The immediate impact of the project is an increased awareness, in particular at policy level on the importance of mainstreaming DRR in the education sector, adopting a multi-sectoral approach. The strengthened commitments of the governments and NDMO structure in making communities safer and upholding government responsibility to ensure public safety; and the enhancement of the networking among disaster risk reduction practitioners and governments as well as among government agencies.

All three countries have confirmed to disseminate and teach DRR module in the secondary school and to prioritise the mainstreaming of DRR in the education sector.

MDRD project has developed a good model for mainstreaming DRR in education with the development of research studies, tools, partners' cooperation and linkages which help to facilitate the process of the mainstreaming. In Cambodia, the project is working in synergy with Action Aid; i.e. approaches, DRR modules, training material and IEC material are shared, complemented, and used by both projects. In Lao, the MDRD project envisaged the same model with Save the Children Australia. In anticipation, teachers from the Sayaboury province of the SCA project were trained to deliver the DRR module. In the Philippines, the MDRD project complements well the other government school projects, such as integration of global warming and food security into the education curriculum.

In addition, the results of the project were shared at the Regional Consultative Committee on Disaster Management meeting in May 2008. The 3 countries shared information with other RCC members who may want to adopt a similar approach for mainstreaming DRR in the education sector. The experiences of the MDRD Education project have also helped refine the RCC Guidelines on Curriculum Development. These guidelines were prepared earlier and were used to guide this project, but the lessons learned from the project were also incorporated in the guidelines. These guidelines were shared for further consultation at the Regional Consultative Committee meeting at Colombo in May 2008. Thus, the project received input from the RCC but also contributed to the RCC Program on Mainstreaming DRR. A two way link has been established with the RCC, which contributes to the efforts at mainstreaming in the region and the globe, and also promotes sustainability of this effort.

ADPC and UNDP have strong and close relationship with all National Disaster Management Offices in all 3 countries and have developed close relationships with the Ministry of Education regarding the development of DRR module. The NCDM in Cambodia, NDMO in Lao PDR and the NDCC in the Philippines were actively involved in capacity building activities and facilitated TOT by providing resource persons. In addition there was close coordination with provincial and district education officers, in all 3 countries. The project team provided training to the district officers and commune councils in collaboration with other DIPECHO funded ADPC projects in Lao and Cambodia, such as ECHO III. ActionAid, UNICEF and other agencies participated in visiting schools for monitoring, in the development of the country studies and in the national workshops. In Kratie, province of Cambodia, the schools covered under ECHO-III project were also selected under the MDRD Education project to ensure synergy. In Cambodia, the Teachers Information Kit and the Flood Booklet from the FEMS project were utilized and disseminated during the TOT.

Conclusion:

According to an external evaluation, the project helped considerably to initiate in Cambodia and Lao, and to advance in Philippines the mainstreaming of Disaster Risk Reduction (DRR) in the Education sector by developing and testing country specific DRR modules, conducting the research studies on the impact of disasters in the education sector as well by organising national advocacy workshops in which the outcomes of the school pilot testing phase and the findings of the research studies have been presented and discussed with the main stakeholders in every country.

The external evaluation of the project has stated “The project appears to have successfully advocated the need for mainstreaming DRR in the education sector, both in the curriculum as well as in school construction. The MOE in all 3 countries has adequately devoted sufficient time and effort to the project. The risks and assumptions have been overcome.” The letters and orders of endorsement serve as evidence to the fact that the governments of all 3 countries have appreciated the need for DRR in policy.

C) STATUS OF MAINSTREAMING DRR IN THE EDUCATION SECTOR IN THE PHILIPPINES

In the Philippines, key officials from the Department of Education (DepEd), Bureau of Secondary Education and Department of Finance, DepEd are the members of the project technical working group.

DRR Module: Some DRR concepts can be found in existing subjects but there was no formal curriculum related to DRR. The DRR module, developed under MDRD-Education Project in 2007, is for Grade VII.

In Philippines, the experts from the Office of the Civil Defense (OCD), Department of Environment and Natural Resources (DENR), Department of Energy (DOE), Department of Science and Technology (DOST) through PHIVOLCS and PAGASA, Department of Health (DOH), Philippines National Red Cross (PNRC), Bureau of Fire Protection (BFP) and Philippines National Police (PNP) gave input to develop the DRR module. The DepEd has refined the lessons exemplar on the basis of these inputs. The chapters on Civil Disorder and Civil Unrest have been removed. Climate change and Global warming has been added.

The final DRR module was integrated into (3) chapters with (12) lessons in Science-I and (4) chapters with (16) lessons in Social Studies of 1st year of secondary school (Grade 7). The units cover:

- Natural Hazards
- Climate Change/Global Change
- Family Disaster Plan
- Volcanoes
- Heat Wave
- Tornado
- Fire

Each unit shows the chapter into which the lesson is to be integrated. This tells the teacher the topics that have to be covered while teaching the lesson and chapter. The lesson includes group activities that are to be coordinated by the teacher in the class room. It also includes questions to be asked to the students, the topics that the teacher should cover in the lecture, an application of the knowledge that the teacher will conduct with the students (learning activity) and methodology for evaluation of learning by the students. Each lesson has similar components.

Philippines

Grade	Subject	Chapter No.	Topic No.	Name of chapter	Objective	Integrated to:	Duration	Pedagogy	Contents
Seven	Social Studies	1		Family disaster plan	Learn about safety at home	Unit 1: Natural hazards	40 minutes	Instruction, discussions	1. 4 steps to safety 2. Disaster kit
Seven	Science	2		Chapter 2: Geological hazards Lesson 1: EQ	Learn about EQ, volcanoes, landslide and tsunami	Unit 1: Natural hazards	1 hour	Lecture, group activities, analysis, discussions	1. Causes 2. Impacts 3. Mitigation measures
Seven	Science	3		Chapter 3: Natural hazards Lesson: Tropical cyclones	Learn about weather, cyclones & typhoons	Unit 1: Natural hazards	1 hour	Lecture, group activities, analysis, discussions	1. Weather & climate 2. What is PAGASA 3. Cyclones & typhoons
Seven	Social Studies	4		Chapter 3: Natural hazards Lesson 2: Windows into the earth - volcanoes	Learn about volcanic eruptions, lahars and mitigation	Unit 1: Natural hazards	40 minutes	Lecture, group activities, analysis, discussions, making demo volcanoes	1. Volcanic eruptions 2. Lahars 3. PHIVOLCS 4. Mitigation 5. Family disaster plan
Seven	Social Studies	5		Lesson : Tsunami	Learn about tsunami, causes, impacts and mitigation	Unit 1: Natural hazards	40 minutes	Lecture, group activities, analysis, discussions	1. Causes 2. Impacts 3. Mitigation
Seven	Social Studies	6		Lesson : Landslide and debris flow	Learn what are landslides, what are the causes, mitigation	Unit 1: Natural hazards	40 minutes	Lecture, group activities, analysis, discussions	1. What are landslides 2. what are the causes 3. What are ways of mitigation

Grade	Subject	Chapter No.	Topic No.	Name of chapter	Objective	Integrated to:	Duration	Pedagogy	Contents
	Science	7		Lesson: Climate change & global warming	Learn about climate change and how to reduce risk	Unit 1: Natural hazards	1 hour	Lecture, group activities, analysis, discussions	1. What is climate change 2. What is the impact 3. How to reduce your impact on climate change
Seven	Science	8		Lesson: Fire	Learn about the factors that cause fires and how to prevent fires	Unit 1: Hazards	1 hour	Lecture, group activities, analysis, discussions, film	1. What are causes of fire 2. How to prepare for fire 3. How to protect life and property
Seven	Science	9		Lesson: Tornado	Learn about causes, impacts and protection from tornadoes	Unit 1: Natural hazards	1 hour	Lecture, group activities, analysis, discussions	1. Causes 2. Impacts 3. Do's and don'ts
Seven	Science	10		Lesson: Heat wave	Learn about what heat can do to the body and how to protect	Unit 1: Natural hazards	1 hour	Lecture, group activities, analysis, discussions	1. What is heat wave 2. What to do if at risk
Seven	Science	11		Lesson Soil erosion & flood	Learn about soil erosion and its contribution to floods	Chapter 3: Natural hazard (hydro-meteorological)	1 hour	Lecture, group activities, analysis, discussions	1. What is soil erosion 2. Causes 3. Effects 4. Control of erosion 5. Occurrence of floods

TOT and Training: Orientation session to (23) teachers in Mindanao, Visayas and Luzon was held on 15th – 18th January 2008 in Mindanao, 22nd to 25th January 2008 in Luzon and 29th January to 1st February 2008 in Visayas.

Training of Teachers (TOT) was provided to (75) participants who were science and social studies teachers from (17) regions, representatives from Office of Civil Defense (OCD), Department of Environment and Natural Resources (DENR) through the Mines and Science bureau (MGB), Department of Energy (DOE), Department of Science and Technology (DOST) through PHILVOC and PAGASA, Department of Health (DOH), Philippines National Red Cross (PNRC), Bureau of Fire Protection (BFP) and Philippine National Police (PNP). The (51) master trainers from this training will be able to provide further training to around 50,000 Science and Social Studies (Araling Panlipunan) teachers of Department of Education in the (189) divisions of the Philippines.

Teaching of the Module: The teaching of the DRR module was in (3) private schools and (3) public schools, from the following (3) provinces:

Table 3/ Total pilot schools in Philippines

Name of Province	Name of district	List of schools for pilot testing of DRR	Number of schools in each province
Southern Leyte (Visayas)	St. Bernard	<ul style="list-style-type: none"> ■ Tambis National High School ■ Cristo Rey Regional High School 	2
Albay (Luzon)	Tabaco	<ul style="list-style-type: none"> ■ Tabaco National High School ■ St. Louise de Marillao School of Tabaco 	2
Basilan (Mindanao)	Basilan	<ul style="list-style-type: none"> ■ Basilan National High School ■ Clarette school of Basilan 	2
Number of schools in proposal			3
Additional schools			3
Total schools in (3) provinces			6

It should be noted that teachers from Santa Lucia High School of Pasig City were also involved in the writing of the DRR curriculum together with specialists from DepEd.

Evaluation of DRR Module: Evaluation of learning of DRR was conducted during the National Advocacy workshop as a parallel activity. Representatives from (2) schools participated in a poster painting competition. Later, the students presented their work, and explained what they were trying to show in the paintings. The participants of the Workshop asked the students questions on DRR, which were successfully answered. Some questions answered by students were based on their actual experience during the landslide tragedy in 2004 in Southern Leyte.

Outcomes: 1,020 students, including 548 girls from (6) pilot schools have been taught the DRR module. In the orientation session (23) teachers participated. Regional supervisors, regional directors, school principals from pilot schools and officers from DepEd also participated in the observation and evaluation in the classrooms. A TOT has added (75) more beneficiaries that include teachers, trainers and education officers. In addition, the Secretary of Civil Defense and DND Chairman, Hon. Gilberto C. Teodoro, Jr. and the Undersecretary of DepEd, Hon. Antonio A. Inocentes actively participated in the National Workshop.

In total 1,020 students (548 girls) in Albay, Southern Leyte, and Basilan have been taught the DRR integrated module. In addition, 75 officials and teachers have been trained on the DRR module.

Study on Impact of disasters: In Philippines, the study showed that some DRR concepts can be found in existing subjects but there was no formal curriculum related to DRR, prior to this project. The DRR module, developed under MDRD-Education Project, is for Grade VII only. There is need for up scaling. There are a total of 7,683 secondary schools. The institutionalization of the DRR module is required to cover all the schools. There are 200,000 teachers who need training.

There are good examples of safer school construction in the Philippines, e.g., LAPUS (The Learning and Public Use School) Building and UNICEF's Building Safe Learning Environment (BSLE) for Children which are project oriented. However, there is a need and scope for improving hazard resilient structures for school buildings. The DepEd needs to improve construction methods and materials and introduce more hazard resilient structures. The recommendations of the study were endorsed by the participants of the workshop, including the Secretary of the Department of Defense.

National workshop:

The Advocacy Workshop on Mainstreaming Disaster Risk Reduction in the Education Sector aimed to raise awareness and build consensus and commitment of the Ministry of Education and other related Ministries in Mainstreaming of Disaster Risk Reduction in the Education Sector. In this context, it is realized that for successful implementation of developmental activities for the education sector, it is essential to involve other ministries such as Planning and Finance as they take key decisions about the budgetary allocations and distribution of funds in respective sectors. This advocacy workshop aimed to raise their awareness on how investment in risk reduction education as well as in disaster resilient construction can help in minimizing financial losses incurred by Ministry of Education in the aftermath of a disaster.

The workshop was a 1 day event that oriented the officials from the Ministry of Education, National Disaster Management Office and related ministries identify the gaps in the present system of school construction and initiate mainstreaming of disaster risk reduction into development policies, planning and implementation in the Education Sector.

Workshop Objectives:

- To showcase the results and the experience from the implementation of the project on mainstreaming disaster risk reduction in the education sector (MDRD Education).
- To showcase the recommendations of the study on the impacts of disasters in the education sector in the countries, with specific focus on safer construction of school buildings.
- To share, and learn from, the experience of other NGOs and donors in integrating DRR concerns in the education sector.
- To suggest future programmatic activity for the integration of DRR in the education sector of the countries to ensure compliance with the Hyogo Framework for Action.

**National Advocacy Workshop on Priority Implementation Project (PIP)
on Education Sector**

**31 March 2008, Social Hall, Department of National Defense
Camp General Emilio Aguinaldo, Quezon City, Philippines**

Program of Activities

<i>Time</i>	<i>Programs/Activities</i>	<i>Resource Person/Presenter</i>
AM Session		
9:00 – 9:30	I. Opening Ceremonies Invocation National Anthem Messages Photo Session	Hon. Antonio A. Inocentes Undersecretary, Department of Education (DepEd) and Presidential Adviser on Education Hon. Gilberto C. Teodoro, Jr. Secretary, DND/Chairman, NDCC
9:30 – 9:50	II. Presentation on Background of RCC MDRD Program	Mr. Aloysius Rego Director and Team Leader, Disaster Management System (DMS), Asian Disaster Preparedness Center (ADPC)
9:50 – 10:20	III. Presentation of the Result of the Study on the Impact of Disasters in the Education Sector	Dr. Emmanuel Luna Director, Center for Disaster Preparedness (CDP)
10:20 – 10:35	Open Forum	
10:35 – 10:50	Break	
10:50 – 11:20	IV. Presentation of the Module Development on DRR	Dr. Corazon L. Echano Supervising Education Program Specialist, Bureau of Secondary Schools, (DepEd)
11:20 – 11:40	Open Forum	
11:40 – 12:00	Mechanics of the Workshop	Mr. Sanjaya Bhatia Program Manager, ADPC
12:00 – 1:00	Lunch Break / Poster Making Contest Judging	
PM Session		
1:15 – 2:00	“Hear the Children Session”	First Year Students from Pilot Schools
2:00 – 2:15	V. Presentation from Lao, PDR	Dr. Keovivone Outhachak Curriculum Developer, National Research Institute (NRIES) Mr. Sengkham Komphakdy, Technical Officer, NDMO

Time	Programs/Activities	Resource Person/Presenter
2:15 – 2:30	VI. Presentation from Cambodia	H.E. Chea Se Undersecretary of State, Ministry of Education and Sports (MoEYS) Mr. Eng Kimly Deputy Director, MoEYS
2:30 – 2:45	Open Forum	
2:45 – 3:00	Break	
3:00 – 4:00	VII. Identification of Programs and Projects for Upscaling (Workshop)	
4:00 – 4:40	Plenary Presentation and Synthesis	
4:40 – 5:30	Awarding of Poster Making Winners and Closing Ceremonies	Messages: Glenn J. Rabonza Administrator, OCD and Executive Officer, NDCC UNDP Representative

Master of Ceremony: MR. MICHAEL ERIC L. CASTILLO
Office of Civil Defense

WORKSHOP NOTES

The workshop was jointly organized by NDCC, DepEd and ADPC at Camp General Emilio Aguinaldo on 31st March 2008 in Manila. Participants included senior officials from NDCC and DepEd such as Hon. Gilberto C. Teodoro, Jr., Secretary, DND and Chairman of NDCC, Hon. Antonio A. Inocentes, Undersecretary from DepEd and Presidential Adviser on Education, Hon. Glenn J. Rabonza, Administrator, OCD and Executive Officer of NDCC. In addition, there were representatives from different government agencies, UN agencies and NGOs, principals, teachers and (15) students from 3 pilot schools with the total numbers of participants at 68.

Opening and Welcome Speeches:

On 31 March morning, the workshop was opened by Hon. Antonio A. Inocentes, Undersecretary of the Department of Education (DepEd) and Presidential Adviser on Education. A message was delivered by Hon. Gilberto C. Teodoro, Jr. Secretary, DND/Chairman NDCC. A group photo followed before the program activities commenced.

Presentations on 31 March:

Official presentation started with the presentation on “Background of RCC MDRD Program” by Director ADPC.

The presentation of the results of the study on the Impact of Disasters in the Education Sector was presented by the director of the Center for Disaster Preparedness (CDP). The key comments are:

- The major points commented by secretary of NDCC are; cluster approach has solidified partnership within education sector for case of emergency and for school design he commented that if schools preciously decide for evacuation place, Lapus design should consider in building plan. Participants discussed on evacuation center during emergency in Philippines as schools are used as an evacuation center most of the time during calamity times. DepEd requested under secretary of DepEd and secretary of NDCC to print more DRR module to distribute to all regions so that when disasters strike, this module would be useful but DepEd needs more funds and also need collaboration from other agencies as Philippines have more than 5,000 secondary schools throughout the region.
- For community participation, it could be voluntary for better collaboration. Based on risk assessment, evacuation centre can be designed accordingly. If it is community-based, it would be best. On DRR module, DepEd should mandate to integrate into all school grades.
- How we could strongly get private sector participation? In California, school building codes are especially for disaster reduction. How DepEd could partner with local partners to access school buildings? What kind of technical skills are needed to incorporate assessment of the risk? Working with CDP, ADPC, WB, NDCC and other local partners can assess the risk analysis?

After morning break there was a presentation by Dr. Corazon L. Echano, Specialist, Bureau of Secondary Schools (DepEd) on “Mainstreaming DRR- the Philippines experience”. The next presentation was by Mr. Sanjaya Bhatia on “Problems and Recommendations on Impacts of Disaster in the Education Sector” based on Philippines study. Simultaneously, poster painting competition was organized for (15) students during the workshop.

The next two presentations focused on the process and the lessons learned from development and testing of the DRR module, under the MDRD-Education project. For Cambodia it was presented by H.E Chae Se, Undersecretary of State, and Mr. Eng Kimly, Deputy Director of Ministry of Education, youth and Sport (MoEYS). The Lao experience was presented by Dr. Keovivone Outhachak, Curriculum developer, NRIES, and Mr. Sengkham Komphakdy, Technical Officer of NDMO.

Group Discussions:

The participants were divided into four groups to discuss the following questions:

Group 1: For safer school construction what are the next steps to be taken for ensuring that all schools are built safe? Who would be the stakeholders – Government and non-government?

The comments are:

On additional Features of a Safe School

- Presence of adequate water and power supply
- Comprehensive drainage and sewerage system
- Fire safety to include smoke detectors and alarm system; fire exit signage; access way for fire fighters
- Design provision for ventilation
- Design provision for gender sensitivity e.g. toilet and bath, play ground etc., including needs of PWDs

Immediate Policy/ Operational Actions

- Safety Assessment of existing buildings (ancillary construction for safe schools)
- Community participation on site selection (harness local knowledge) and fund mobilization
- Prioritization of earthquake, flood and typhoon prone areas
- Replication of host families

Stakeholders

- Department of Education
- Department of Budget Management
- Department of Public Works and Highways
- Philippine Institute of Volcanology and Seismology
- Philippine Atmospheric Geophysical Astronomical and Services Administration
- LGUs
- Parents and Teachers Association
- People's Organizations
- Religious Organizations
- Donor communities (foreign and local)
- Regional Counterparts
- BFP, Department Interior and Local Governments
- MGB, Department Environment and Natural Resources

Group 2: What additions should be made to the school building design so that it can be used as emergency and evacuation shelter with least impact on teaching?

The comments are:

- LAPUS building (existing) for physical education classes and non-academic classes

For schools in rural area

- Multi purpose covered courts which includes
 - With comfort rooms
 - With shower rooms separated from toilet
 - An area to be convertible to a kitchen facility

For schools in urban area

- Use sports complex

Group 3: What extra curricular material is already available, both in government and non-government sector which can be used to supplement the DRR curriculum? What are the possible sources of funding for production?

The comments are:

For materials-

- Pamphlets (NDCC agencies)
- Brochures

- Posters
- Mural and Paintings (e.g. Walls)
- Training manuals/modules
- Flipcharts/instructional materials
- Games
- Technical Reports
- Books (Family Survival of OCD)
- Specialized modules like dances, songs, music and arts, puppets, mascot

For source of funds-

- Govt. funds (agency, Barangay IRA)
- National Education cluster (led by DepEd and UNICEF)
- External funds (ex. European commission, DIPECHO, UNDP, JICA, AusAid, ADPC, etc)
- Private Sector
- Philippines development assistance fund

As issues and concerns-

- Need for equipment that can be used for showing IEC (e.g. LCD projector)
- Need to harmonize available materials/manuals/modules, review, build on and improve on existing materials
- Need for an annual review of materials
- Local dialect
- Age-appropriate level

Group 4: Which national and sub-national institutes need to develop training modules for teachers so that all teachers in the country can be trained to teach the DRR module? What are the possible sources of funding of such training, government and non-government?

The comments are:

Institutes that will develop modules

1. National

- Department of Education (DepEd) Curricular Division (Elementary and Secondary)
- National Educators Academy, DepEd
- Commission for Higher Education (CHED) Colleges and Universities
- National Institutes for Science and Mathematics Education (Located in the University of the Philippines)
- Education Cluster
- Government Projects –(e.g. Ready Project: PAGASA, MGB, PHIVOLCS, NAMRIA, OCD)
- DILG – Local Government Academy

2. Sub-national

- Teachers Education Institute or Center for Excellence per region
- Local Government Units (LGUs)

B. Tasks

- 1. Development of modules and materials
- 2. Training of Teachers
- 3. Coordination among service providers
- 4. Resource Mobilization/ Fund Providers

C. Preliminary Coverage and Priority Areas

- Nationwide (Regions: 2, 4, 5, 8, NCR, CARAGA, ARMM)

D. Possible Sources of Funds

- 1. Regular Government Agency Budget
- 2. Official Development Assistance (ODA)
- 3. International NGOs
- 4. Private/Corporate Entities

The presentation on “Disaster Risk Reduction in Lao PDR focus on Education Sector” was jointly presented by NDMO and NRIES focal point of the project. The following are the brief points:

- Safe construction of schools in on going and future construction projects.
- Establish a forum for interaction between donors, Ministry of Education, the construction agencies and the NDMO for ensuring DRR in all future projects.
- Ministry of Education should develop National Guidelines for School Construction to ensure safe buildings. The guidelines must be applicable to all projects irrespective of donor.
- Ministry of Post and Construction to develop the National Building Code which integrates DRR.
- Train technical staff in charge of maintenance, as well as the education community on DRR
- Awareness about disasters should be part of curriculum at all levels of schools – primary, senior secondary and university.
- Development of national guidelines for emergency planning in the school so that all schools can be prepared for disasters.
- Development of curriculum for students with disabilities.
- Development of extra curricular activities and visual aids for teaching DRR.
- Training of all teachers on teaching DRR.
- Support needed for development of curriculum and printing of textbooks for all students

Followed by presentation on “lessons learned from development and testing of the DRR module, under the MDRD-Education project in Cambodia presented by representative from MoEYS, H.E Chea Se, Undersecretary of State, and Mr. Eng Kimly, Deputy Director, MoEYS Cambodia.

Hear the children:

The last agenda of the workshop was “Hear the Children” with lessons learned from the children of pilot schools. Fifteen students from 3 schools participated in this event. Questions were asked by participants and students answered all questions very well. Students were awarded for their paintings and prizes were given by Hon. Glenn J. Rabonza, Administrator, OCD and Executive Officer, NDCC, Mr. Loy Rego, Director ADPC and Ms. Amelia Supertran, UNDP.

The workshop ended with closing remarks by Hon. Glenn J. Rabonza, Administrator, OCD and Executive Officer, NDCC, Mr. Loy Rego, Director of ADPC and Ms. Amelia Supertran, UNDP and video message from Hon. Gilberto C. Teodoro, Jr., Secretary, DND and Chairman, NDCC.

Stakeholder Consultation: In the Philippines, the stakeholder consultation has yielded some significant results:

Meeting with UNICEF:

- There is a plan for construction of 15 schools in 2008. This is under the “Building safe learning environment” program.
- The Philippines Development Forum has a Social Development and MDG Group headed by Secretary (Mr. Cabral) of Department of Social Welfare and Development (DSWD). This has a sub-group – Basic education sub-group which is co-chaired by DepEd and AusAid. Members include UNICEF, ADB, CIDA, EU, WB, USAID, GTZ, AECI. This sub-group meets to discuss developments in the education sector. The discussions are guided by BESRA, which is supported by the PDF.
- The contacts in DepEd for further details would be
 - Assistant Secretary for Planning Jesus Lorenzo Mateo (Jess) Tel: 636-7203. He coordinates the Educational Development Projects Implementing Task Force (for foreign-assisted projects)
 - Under Secretary for Regional Cooperation Ramón Bacani Tel: 633-7203
 - Under Secretary for Programs and Projects Dr. Wilmar Labrador
 - Assistant Secretary Dr. Teresita Inciong
- UNICEF is keen to be involved with DepEd for school based emergency planning. ADPC could assist with experience in Sri Lanka and other places.

Meeting with NEDA:

- The PDF is more involved in decentralization. More relevant is the Social Development Staff (SDS), which has a Working Group on Social Progress and MDG (which functions under the overall umbrella of the PDF). This has a sub-group on education sector.
- The SDS decided to invite the DepEd to present the results of the project and the next steps in meeting of the Social Development Committee. (SDC) ADPC needs to follow this up with NEDA.
- They suggested that DRR should also be included in the curriculum of Physical Education and Scouting. (Which are also covered by the Bureau of Secondary Education)
- The PDF consists of the donors and the government. The PDF is chaired by Department of Finance, and the World Bank is the co-chair. The sub-group is chaired by the Secretary DSWD and co-chair is UNDP. More details are on the PDF website.

Mainstreaming: The Secretary of the Department of Education issued an order memo to Undersecretaries, Assistant secretaries, Bureau Directors, Directors of services/Centers and Heads of units, Regional Directors, Schools City/Division Superintendents, Heads, Public and Private Schools to prioritize the mainstreaming of disaster risk reduction in the schools system and to ensure the implementation of programs and projects related to DRR. Copy of the DepEd is annexed.

PART B: IMPACT OF DISASTERS ON THE EDUCATION SECTOR IN THE PHILIPPINES

I. INTRODUCTION

A. Background of the Study

This is a country specific paper on the Impact of Disasters on the Education Sector, in line with the Advocacy and Pilot Project Implementation in the Education Sector in South East Asia (MDRD Education), initiated and funded by the Asian Disaster Preparedness Center (ADPC). The education sector has been recognized by the Regional Consultative Committee (RCC) on Disaster Management of the ADPC as one of the priority sectors to initiate the implementation of Mainstreaming Disaster Risk Reduction into Development Planning, Policy and Implementation Program.

MDRD Education Program

MDRD-Education stands for “Mainstreaming Disaster Risk Reduction into the Education Sector”, which is a program of the ADPC Regional Consultative Committee on Disaster Management (RCC). Along with Cambodia, the MDRD-Education Program has been implemented in 3 Asian countries with the title “Support to Implementation of HFA through Mainstreaming of DRR into Development Planning and Implementation: Advocacy and Pilot Project Implementation in Education Sector in 3 South East Asian RCC member countries - Phase I”

The Phase I (2007-2008) of this project helped advance the mainstreaming of disaster risk reduction in these 3 important countries of Asia, strengthen networking among disaster risk reduction practitioners, and enhanced the government commitment in making communities safer and holding government responsible in ensuring public safety.

1) MDRD-Education Project and the status of Mainstreaming DRR in the Education Sector in the Philippines

The project is being implemented in the Philippines in close coordination with the NDCC and the Department of Education. The implementation of the project involves piloting the module in selected schools. In the Philippines, the pilot schools were in Mindanao (Surigao City), Visayas, and Luzon Island.

In Philippines, key officials from Department of Education (DepEd), Bureau of Secondary Education and Department of Finance, DepEd are the members of the project technical working group.

The implementation of Phase I of MDRD Education Project in Cambodia, Lao PDR, and the Philippines ended in April 2008. While the execution of the project has addressed a gap in the implementation of the HFA in the 3 countries, it has also exposed some critical deficiencies which need to be addressed through further programmatic activity. The country governments have expressed the need for expansion and continuation of the activities under the MDRD Education project.

The MDRD Education Project in the Philippines was carried out in partnership with the Department of Education and the Office of Civil Defense, National Disaster Coordinating Council. The Center for Disaster Preparedness was involved in the disaster impact study.

B. Objectives of the Study

The main objectives of study are to contribute in the building up of evidence based rationale in raising awareness in integrating disaster risk reduction concerns in the education sector, and to advocate for changing practices in school construction and incorporating disaster risk resilient features. Specifically, the study aims to:

- Review the structures and functions of the Department of Education, with emphasis on the relations, roles and responsibilities before and after disaster events;
- Determine the socio-economic impacts of disasters on the education sector;
- Determine and assess the physical impacts of disasters, the processes and guidelines for school building construction being followed by the DepEd.;
- Come up with case studies that would focus on best practices or lessons learned in disaster risk reduction in the education sector; and
- Come up with recommendations that would respond to the issues raised in the study and that would help in integrating disaster risk reduction in education sector.

C. Methodology and Limitations

This paper is a case study on the Philippines situation and experiences on how disasters are affecting the education sector. In doing the case study, the research made use of several data gathering methods such as review of secondary materials, periodicals and documents available in the various agencies and the internet, consultations and focus group discussion with officials and staff of the Department of Education and the Office of the Civil Defence, incidental interview with key persons, and through the use of survey questionnaires.

The survey questionnaires (Appendix A) used were not meant for quantitative analysis but for purposes of generating ideas for qualitative analysis. The questionnaires were filled up by high school principals in schools where the mainstreaming of the DRR modules were done by the DepEd. Ten teachers from each of the five pilot schools were also asked to fill up a different set of questionnaires to see their views and experiences in disaster impact and response in their schools. The officers from the DepEd and OCD involved in the DRR module mainstreaming gathered the data through the questionnaires. There were five questionnaires accomplished by principals or authorized representatives and 51 questionnaires by teachers in the five pilot schools.

While there were data that can speak for the Philippine case as a whole, there were data, depending on sources that could be attributed only to specific cases and therefore generalization could not be made.

II. EDUCATION SECTOR AND INSTITUTIONS INVOLVED IN DISASTER RISK REDUCTION

A. Structures and Functions of the Department¹

Established in January 21, 1901, the Department of Education is headed by a cabinet member now occupied by Secretary Jesli A. Lapus. The Department has a budget of ₱126.801 billion in 2007.

The Philippines' Department of Education (Filipino: Kagawaran ng Edukasyon), abbreviated as DepEd, is the executive department of the Philippine government responsible for the management and upkeep of the Philippine system of education. It is the chief formulator of Philippine educational policy and is responsible for the Philippine primary and secondary school system. Higher education is managed by the DepEd in coordination with another body, the Commission on Higher Education. The DepEd is also known by its old name, the *Department of Education, Culture and Sports* (Filipino: Kagawaran ng Edukasyon, Kultura at Kultura at Palakasan), or DECS.

Based on the Education Act of 1982, the educational system aims to:

1. Provide for a broad general education that will assist each individuals in the peculiar ecology of his own society, to (a) attain his potentials as a human being; (b) enhance the range and quality of individual and group participation in the basic functions of society; and (c) acquire the essential educational foundation of his development into a productive and versatile citizen; (chan robes virtual law library).
2. Train the nation's manpower in the middle-level skills for national development;
3. Develop the profession that will provide leadership for the nation in the advancement of knowledge for improving the quality of human life; and
4. Respond effectively to changing needs and conditions of the nation through a system of educational planning and evaluation.

Furthermore, the educational system shall reach out to educationally deprived communities, in order to give meaningful reality to their membership in the national society, to enrich their civic participation in the community and national life, and to unify all Filipinos into a free and just nation. (Section 4)

In terms of its functions and power, the Department is mandated to:

- Formulate general education objectives and policies, and adopt long-range educational plans;
- Plan, develop and implement programs and projects in education and culture;
- Promulgate rules and regulations necessary for the administration, supervision and regulation of the educational system in accordance with declared policy;
- Set up general objectives for the school system;

¹ Descriptions of the Department of Education based on its official website. For more information, please see <http://www.deped.gov.ph>.

- Coordinate the activities and functions of the school system and the various cultural agencies under it;
- Coordinate and work with agencies concerned with the educational and cultural development of the national cultural communities; and
- Recommend and study legislation proposed for adoption.

To carry out its mandates and objectives, the Department is organized into two major structural components. The Central Office maintains the overall administration of basic education at the national level. The Field Offices are responsible for the regional and local coordination and administration of the Department's mandate. RA 9155 provides that the Department should have no more than four Undersecretaries and four Assistant Secretaries with at least one Undersecretary and one Assistant Secretary who are career service officers chosen among the staff of the Department.

There are four undersecretaries each of who are designated in the following areas; 1) Programs and Projects; 2) Regional Operations; 3) Finance and Administration; 4) Legal Affairs. Equally there are four assistant secretaries in the areas of: 1) Programs and Projects; 2) Planning and Development; 3) Budget and Financial affairs; 4) Legal Affairs.

At present, the Department operates with four Undersecretaries in the areas of: (1) Programs and Projects; (2) Regional Operations; (3) Finance and Administration; and (4) Legal Affairs; four Assistant Secretaries in the areas of: (1) Programs and Projects; (2) Planning and Development; (3) Budget and Financial Affairs; and (4) Legal Affairs.

Backstopping the Office of the Secretary at the Central Office are the different services, bureaus and centers. The five services are the Administrative Service, Financial and Management Service, Human Resource Development Service, Planning Service, and Technical Service. Three staff bureaus provide assistance in formulating policies, standards, and programs related to curriculum and staff development. These are the Bureau of Elementary Education (BEE), Bureau of Secondary Education (BSE), and the Bureau of Non formal Education (BNFE). By virtue of Executive Order No. 81 series of 1999, the functions of a fourth bureau, the Bureau of Physical Education and School Sports (BPSS), were absorbed by the Philippine Sports Commission last August 25, 1999.

Six centers or units attached to the Department similarly provide technical and administrative support towards the realization of the Department's vision. These are the National Education Testing and Research Center (NETRC), Health and Nutrition Center (HNC), National Educators Academy of the Philippines (NEAP), Educational Development Projects Implementing Task Force (EDPITAF), National Science Teaching Instrumentation Center (NSTIC), and Instructional Materials Council Secretariat (IMCS). There are special offices under OSEC namely: the Adopt-a-School Program Secretariat, Center for Students and Co-curricular Affairs, and the Educational Technology Unit.

Other attached and support agencies to the Department are the Teacher Education Council (TEC), Philippine High School for the Arts, Literacy Coordinating Council (LCC), and the Instructional Materials Council (IMC).

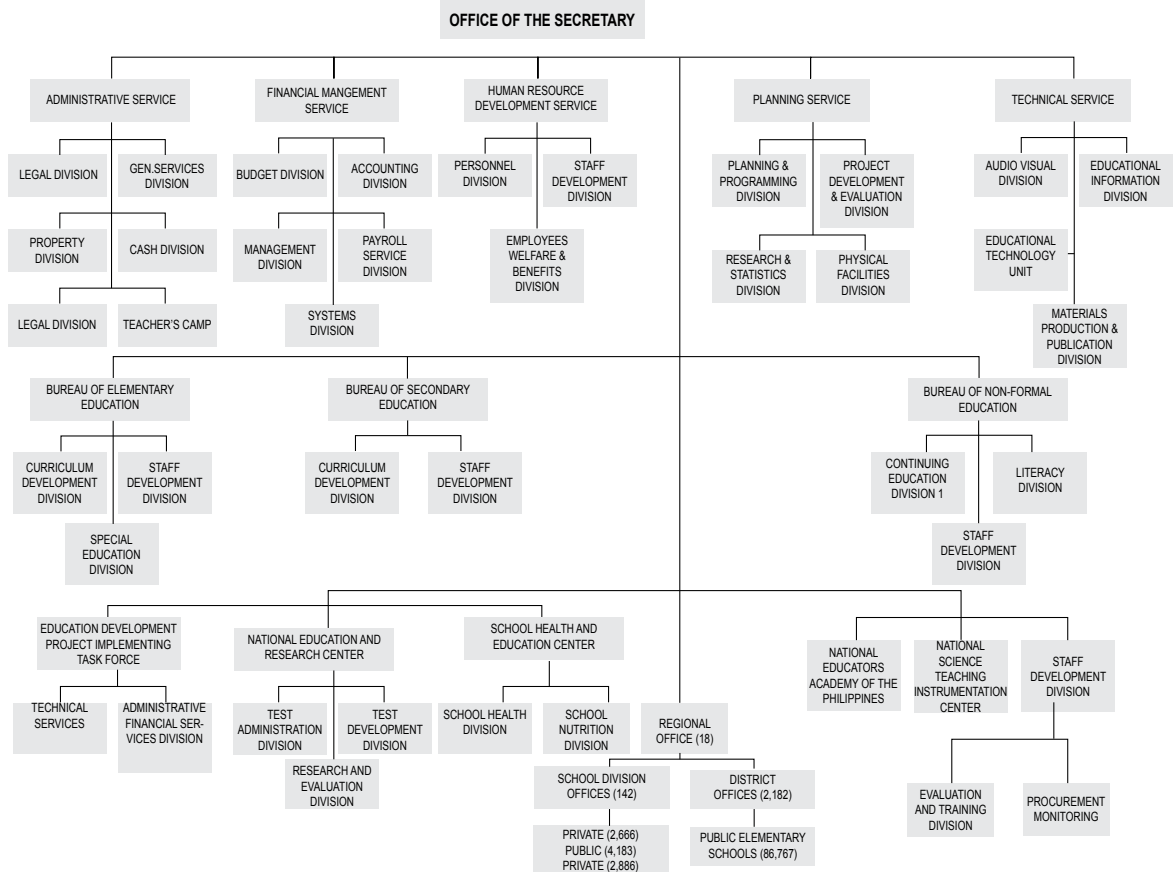
At the sub-national level, the Field Offices consist of the following:

1. Seventeen (17) Regional Offices, including the Autonomous Region in Muslim Mindanao (ARMM²), each headed by a Regional Director (Regional Secretary in the case of ARMM);

² ARMM is included in the budget of the Department on the following: Creation of teaching and non-teaching positions; Funding for newly-legislated high schools; Regular School Building Program; and Certain foreign-assisted and locally-funded programs and projects.

2. One hundred fifty-seven (157) Provincial and City Schools Divisions, each headed by a Schools Division Superintendent. Assisting the Schools Division Offices are 2,227 School Districts, each headed by a District Supervisor;
3. Under the supervision of the Schools Division Offices are forty-eight thousand, four hundred forty-six (48, 446) schools, broken down as follows:
 - 40,763 elementary schools (36,234 public and 4,529 private)
 - 7,683 secondary schools (4,422 public and 3,261 private)

Figure 1/ Organizational Chart of the Department of Education



The Department has 523,186 personnel, 99.67 % of whom are in the field offices and 0.33% in the Central Office. There are 339,602 elementary teachers and masters teachers (64.91%) and 120,789 pre-school and special education teachers (23.09%). They serve about 20 million schoolchildren nationwide.

Particulars	Number	Percentage
I. Central Office	1,708	.033
II. Field Offices	521,478	99.67
A. Teaching Personnel		
1. Elementary (Teachers and Master Teachers)	339,602	64.91
2. Pre-School and SPED Teachers	120,789	23.09
B. Non-Teaching/ Administrative Staff	31,945	6.43
C. Teaching-Related (Schools Division superintendents and Assistant Division Superintendents, District Supervisors, Education Supervisors, Vocational School Superintendents/ Administrative Officers, Principals and Assistant Principals, Head Teachers	29,142	5.57
TOTAL	523,186	100%

Table 4/ Personnel Complement of the Department of Education

Source:
http://www.deped.gov.ph/about_deped/history.asp
 Department of Education Website.

Curriculum Development in Secondary Education

The Bureau of Secondary Education has a Curriculum Development Division that is responsible in enhancing and revising the secondary curriculum. They conduct review for curriculum revision every five years, after a batch of students graduate from an existing curriculum. However, within the five-year period, the division conducts monitoring and reviews for enhancing the curriculum.

Curriculum reviews starts in the Division, with the Division Specialists initiating the review. They also engage other expert teachers from the regions in writing the modules. The draft module is validated by experts from the academe or teachers in big schools not involved in writing the module. After all the comments and suggestions are inputted, the module is piloted in schools representing both public and private schools from the regions of the country. After the pilot testing, the final Module is approved by the Instruction Materials Secretariat that is under the Office of the Department Secretary. The module is returned to the Bureau for mass printing. This is followed by the training and orientation of teachers who would teach the new module.

While the Bureau has a well established procedures and expertise in curriculum development, the process entails adequate funding support to train the more than 200,000 high school teachers to handle the new module. Coming out with additional subject for high school is difficult because of the required number of hours for the various subjects. Thus, what can be done, just like in the integration of the DRR, is the enhancement of the curriculum where the DRR concepts are integrated in existing subjects. Even then, as already cited, this requires funds to train all the teachers nationwide to become familiar with the module. A more effective way of integrating the concept is by having a DRR subject in the teachers' training at the tertiary level. This means that DRR subject will become a requirement in the BS Elementary and Higher Education in all colleges and universities. Thus, all teachers would then be familiar with the DRR and would have the capability to teach it among high school or elementary students.

B. The Philippine Disaster Management System

1. The National Disaster Coordinating Council

The highest policy making body on matters pertaining to disaster is the National Disaster Coordinating Council (NDCC). This was established by Presidential Decree 1566 on June 11, 1978. The PD 1566 is the current basis of the Philippine disaster management system. It stipulates that:

- State policy on self-reliance among local officials and their constituents in responding to emergencies and disasters
- Each political and administrative subdivision to utilize all available resources in the area before requesting assistance from neighboring or higher authority
- Primary responsibility rests on government agencies in the affected areas in coordination with the people themselves
- Government departments, bureaus and agencies to have documented plans
- Planning and operation shall be done at the barangay level in an inter-agency, multi-sectoral basis to optimize resource utilization
- Responsibility for leadership rests on the Provincial Governor, City/ Municipal Mayor and Barangay Chairman
- When an emergency covering several towns or cities occurs the Provincial Governor assumes operational control
- Periodic exercises to be conducted at all levels, principally in barangays.

The National Disaster Coordinating Council is composed of member agencies that are responsible for carrying out respective tasks and responsibilities pertaining to disaster preparedness, mitigation, response and rehabilitation. The members of the NDCC are the following:

Secretary, Department of National Defense	- Chairman
Secretary, Department of Public Works and Highways	- Member
Secretary, Department of Transportation and Communications	- Member
Secretary, Department of Social Welfare and Development	- Member
Secretary, Department of Agriculture	- Member
Secretary, Department of Education	- Member
Secretary, Department of Finance	- Member
Secretary, Department of Labor and Employment	- Member
Secretary, Department of Trade and Industry	- Member
Secretary, Department of Health	- Member
Secretary, Department of Environment and Natural Resources	- Member
Secretary, Department of the Interior and Local Government	- Member
Secretary, Department of the Budget and Management	- Member
Secretary, Department of Justice	- Member
Secretary, Department of Science and Technology	- Member
Secretary, Department of Tourism	- Member

PD 1566 is currently the country's basis for its disaster management system. The law created the National Disaster Coordinating Council which is the highest policy making body on matters pertaining to disaster. The NDCC includes department secretaries as members.

Director-General, National Economic and Development Authority	- Member
Director-General, Philippine National Police	- Member
Presidential Management Staff	- Member
Director-General, Philippine Information Agency	- Member
Office of the Executive Secretary	- Member
Office of the Press Secretary	- Member
Chief of Staff, Armed Forces of the Philippines	- Member
Secretary-General, Philippine National Red Cross	- Member
Administrator, Office of Civil Defense	- Member and Executive Officer

The Council utilizes existing facilities of the Office of Civil Defense (OCD) at Camp General Emilio Aguinaldo, Quezon City, as its headquarters. All members of the Council contribute their manpower, facilities and expertise to effectively carry out the functions of the Council.

With the local and international community pushing for disaster management system in the country to become more pro-active and disaster risk focused, the NDCC has been in the forefront today in pursuing the Hyogo Framework for Action 2005-2015. With its openness to the participation of the various stakeholders, particularly the local NGOs and international resource and humanitarian institutions, the NDCC has been implementing the following programs, projects and activities. These are summarized in this report to come up with a holistic picture of what the NDCC is doing with regards to DRR and HEA.

Hyogo Framework Priority for Action 1: Ensure that disaster risk reduction is a national priority with a strong basis for implementation.

National Institutional and Legislative Framework

The NDCC's legal basis for its disaster management system is well defined by the PD 1566 providing for the "Strengthening of the Philippine Disaster Control Capability and Establishing a Community Disaster Preparedness Program Nationwide". At the same time, the NDCC is pushing for a Disaster Risk Management Bill entitled "An Act Strengthening the Philippine Disaster Risk Management Capability, Appropriating Funds Thereof and for Other Purposes". The bill advocates the achievement of excellence in civil protection through a coherent, integrated, proficient and responsive DRR and disaster management at all levels of government, including the community and household levels and integration of DRR into development policies, plans and budgeting system." (NDCC, 2007:1-2)

Resources

Resources is set aside as National Calamity Fund which is appropriated to be used for aid, relief, rehabilitation, reconstruction and other work and services. All local government units are also mandated to set aside 5% of its Internal Revenue Allotment as Local Calamity Fund. There is also a Quick Response Fund appropriated in the in the annual national budget to support initial and immediate disaster response operations and needs of the NDCC participating agencies. (NDCC, 2007:4)

Community Participation

The NDDC has been very open to the participation of NGOs and people's organizations on matters related to disaster risks management. In several activities, the NGOs were its partner like the 2003 First National Conference on Community-based Disaster Management with the Center for Disaster Preparedness, the development of the online distance module supported by the World Bank Institute, and other consultations and joint undertaking with the NGOs, particularly the implementation the Cluster Approach where many members are non-governmental organization.(NDCC, 2007: 5)

Presently, the NDCC is undertaking the "Partnership for Disaster Preparedness Reduction-Southeast Asia Phase 4" in collaboration with the Asian Disaster Preparedness Center and with the auspices of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the Disaster Preparedness of the European Commission (DIPHECO). The project aims to promote Community-Based Disaster Risk Management good practices and enhance the role of local authorities in integrating CBDRM into local planning and programming. The Center of Disaster Preparedness has completed the development of the CBDRM Module which can be used in conducting more intensive grassroots approach in engaging stakeholders and vulnerable sectors in the community (NDCC, 2007:5).

The Strategic National Action Plan 2009-2015: Strengthening Disaster Risk Reduction in the Philippines.

Guided by the Hyogo Framework for Action, the Office of the Civil Defense, NDCC, in collaboration with various institutions like the European Commission on Humanitarian Aid, Oxfam Great Britain, Asian Disaster Preparedness Center, United Nations International Strategy for Disaster Reduction, United Nations Development Programme and the Christian Aid conducted the Second national Multi-stakeholder Dialogue on DRR last April 29-30, 2008 to continue the process of building an enabling environment and mobilizing collective support for the national implementation of the HFA. The dialogue was attended by 173 delegates representing 87 institutions such as international NGOs, national government agencies, local NGOs, civic and academic organizations, and disaster coordinating councils at the national, regional and LGU levels.

The dialogue was able to bring out strategies and activities that can serve as inputs in the formulation of the SNAP along with the areas of governance, risk assessment, knowledge management, risk management and vulnerability reduction, disaster preparedness for effective response and resource mobilization for DRR.

Hyogo Framework Priority for Action 2: Identify, assess and monitor disaster risk and enhance early warning

Risk assessment and Early Warning

The National Disaster Coordinating Council (NDCC) is currently implementing a multi-agency project called Hazards Mapping for Effective Community-Based Disaster Risk Mitigation or the READY Project. The main aim of this project is to address the problem of disaster risk management (DRM) at the local level. The targets are selected 27 high-risk Philippine provinces. The project has three components: 1) Multi-hazard identification and disaster risk assessment, 2) community-based disaster risk mitigation through development of community-based early warning system (CBEWS) and conduct of information, education and communication (IEC) campaigns and 3) mainstreaming disaster risk reduction into the local development planning. The implementing agency is the Office of Civil Defense while the collaborating NDCC agencies are MGB, NAMRIA, PAGASA and PHIVOLCS.

NDCC's READY project aims to come up with a geologic and hydro-meteorological hazard maps for 27 provinces. The READY project is a multi-agency collaboration involving the NDCC, MGB, NAMRIA, PAGASA and PHIVOLCS.

Early on in the implementation, each agency agreed on specific tasks according to its mandates. For hazard mapping, geologic and hydro-meteorological hazard maps for each READY province will be produced by the mapping agencies mandated to do the specific hazards. The hazards to be mapped are ground rupture, ground shaking, liquefaction, earthquake-induced landslides, tsunami, rain-induced landslides, floods and storm surges. NAMRIA provided the base maps and integrated the resulting hazard maps when finished. Then, IEC campaigns targeting barangay and municipal leaders primarily aiming to teach them how to interpret the hazard maps are conducted. Community-based early warning systems (CBEWS) for sudden-onset events such as flashfloods, landslides and tsunami were established. This activity included the setting up of rainfall and flood level monitoring, establishment of tsunami hazard signage and conduct of evacuation drills for both hazards. Finally, risk-based contingency planning and land use planning are taught to ensure that these maps form the basis for any sustainable disaster risk mitigation efforts of the community. Meanwhile, provision and training on the use of REDAS, a hazard simulation software, caps the project in each province. The READY Project forms a breakthrough because the NDCC agencies have agreed to pool resources and expertise to address the DRM issue in the country.

The 27 READY provinces are: Surigao del Sur, Surigao del Norte, Leyte, Southern Leyte, Bohol, Aurora, Pampanga, Cavite, Northern Samar, Eastern Samar, Isabela, Quirino, Laguna, Zamboanga del Sur, Zamboanga Sibuguey, Iloilo, Zambales, Antique, Catanduanes, Abra, Agusan del Sur, Nueva Vizcaya, Cagayan, Ilocos Norte, Rizal, Benguet and Ilocos Sur. The funding institutions are the UNDP and the AusAid.

As a counterpart project, the Government of the Philippines (GOP) is also allocating resources to produce multi-hazard maps of 16 other high-risk provinces in the country under a project called READY-GOP. A major component will be the production of base maps, at 1:50,000 and 1:10,000 scales, to be used for the mapping activity. The 16 provinces involved one select province in each of the 16 regions. Then for each region, one city or municipality will be mapped in 1:10,000 scale. With the READY and the GOP Projects, 43 provinces will have a complete set of hazard maps that can be used in disaster preparedness at the provincial and municipal levels. One important component of this project is the production of a hazard-mapping manual that can be followed by municipalities so that ultimately, hazard maps for the entire country would be completed. The Collective Strengthening for Community Awareness for Natural Disasters (CSCAND), a subcommittee of the NDCC's Preparedness Committee, is the umbrella program for the READY and GOP Projects. The CSCAND TWG will be in charged in reviewing these maps prior to their finalization to ensure quality of results.

Hyogo Framework Priority for Action 3: Use Knowledge, innovation and education to build a culture of safety and resilience at all levels.

Information and Management

The NDCC is implementing a number of projects related to information management and exchange. One of this is the development of a web-based Global Unique Disaster Identifier (GLIDE) associated national disaster event database which is a collaborative effort with the Asian Disaster Reduction Center (ADRC). The project would enhance the local capacity for disaster analysis and decision support in disaster risk management and institutionalise an authoritative GLIDE compliant disaster event data- base.

Another project being implemented since 2004 is the “Improvement of Methodologies for Assessing the Socio-Economic Impact of Hydro-Meteorological Disasters” by the UNESCAP and with technical support from the UN Economic Commission for Latin America and the Caribbean and the UNDP’s Bureau for Crises Prevention and Recovery. The project will help in assessing the damages and losses caused by disasters to public and private properties.

Education and Training

The NDCC had been implementing several programs for capacity building in DRR. Among these are:

- Priority Implementation Project on Mainstreaming Disaster Risk Reduction in the Education Sector (the project for which this study is being made).
- Disaster Preparedness Through Educational Multi-Media. This project is a collaborative work of the DepEd and nine partner agencies and private organizations in instilling a culture of preparedness to youth, parents and community through educational multi-media.
- Program for Enhancement of Emergency Response (PEER).
- Nationwide Water Search and Rescue Training
- Publication of the “ Contingency Planning for Emergencies: A Manual for Local Government Units” to strengthen the operational capabilities of the LGUs in responding to any emergency situation.
- Online Natural Disaster Risk Management Program by the World Bank Institute with the support from the Hazard Management Unit and ProVention Consortium.

Hyogo Framework Priority for Action 4: Reduce the Underlying Risk Factors

Environmental and Resource Management

Through the National Geohazards Mapping and Assessment program of the Mines and Geosciences Bureau, areas susceptible to various geohazards are provided with maps and other technical information that would help them better understand the dangers, impacts and cost of disasters.

The Environmental Impact Assessment (EIA) System now has components related to geohazards that would provide information that would integrate DRM into land use, physical and socio-economic development planning.

Land Use and Physical Planning

The 2004-2010 Medium- Term Philippine Development Plan states the government’s desire to prevent losses due to disasters in many ways, one of which is the integration of disaster preparedness and management strategy in the development planning process through periodic risk assessments, updating of land use policies, and institutionalization of community-based mechanism.

The National Development Authority is mainstreaming DRR in development plans particularly on land use and physical framework planning. There is a National Land Use Committee that prepared the National Framework for Physical Planning, putting DRM in physical plans, thus disaster risk factors are subsumed in the process of setting parameters in planning for sustainable economic development. (NDCC, 2007;13)

Technical Engineering

An ongoing project of the ADPC in the Philippine is mainstreaming DRR in the infrastructure sector by incorporating Risk Impact Assessment procedures into planning process before construction of new roads and bridges. The Department of Public Works and Highways and joined by other government agencies, association of structural and civil engineers and other interest groups tackled this concern in a national workshop.

Other programs that incorporate DRR in the technical design are the School Building for Learning and Public Use purposely designed to serve as evacuation centers capable of remaining functional in disaster situation; and the “Be Better, Build Better Program” that envisions the construction of innovative school buildings that are not only conducive for learning but safe from disasters. (NDCC, 2007: 14)

Hyogo Framework Priority for Action 5: Strengthen disaster preparedness for effective response.

The NDCC crafted the Four Point Action Plan on Disaster Preparedness that cuts across the Priorities for Action 1-4 of the HFA.

- Upgrading the forecasting capability of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and the Philippine Institute of Volcanology and Seismology (PHIVOLCS) through the improvement of equipment and staff development, linkages and networking with foreign forecasting institutions in the Pacific Rim and South China Sea, and installation of rainfall and water level gauges.
- Promoting an integrated and coherent strategic public information campaign on disaster preparedness through the conduct of nationwide drills on Synchronized Building Emergency Evacuation Plan and information campaigns.
- Enhancing capabilities of Local Chief Executives and their respective Disaster Coordinating Councils in identified vulnerable areas through the conduct of disaster management related trainings.
- Strengthening the mechanisms for government and private sector partnership in relief and rehabilitation through the organization of the Private Sector Disaster Management Network (NDCC, 2007; 14-16).

2. The Department of Education and the Disaster Management System

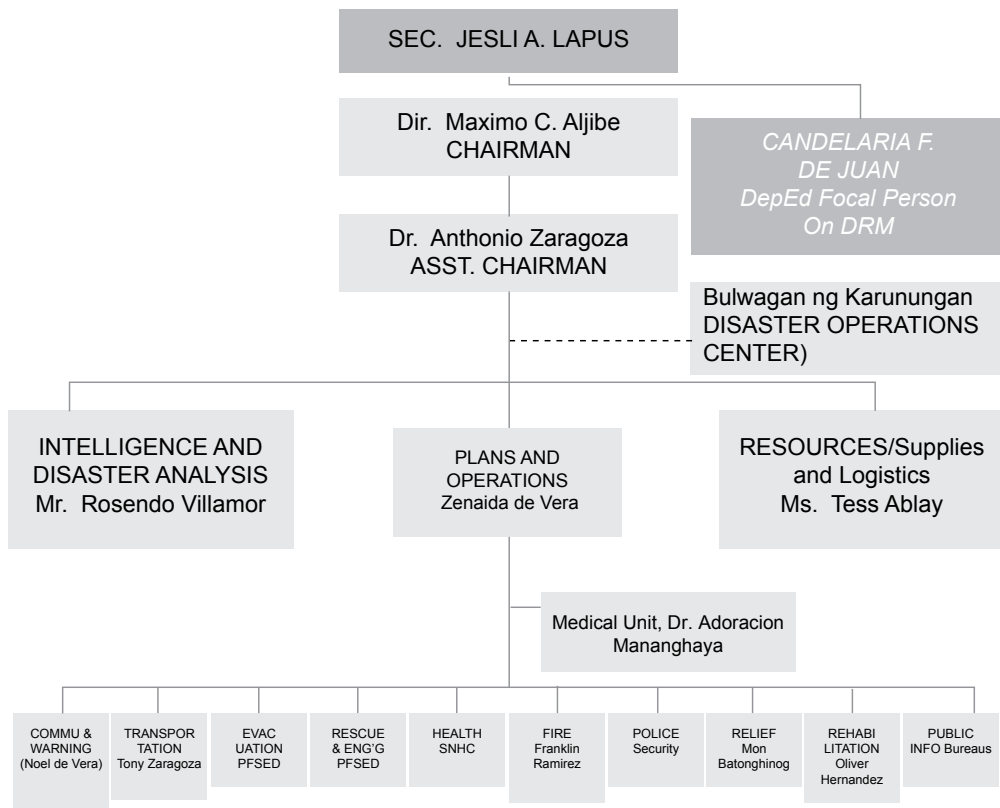
The Department of Education is a member of the NDCC and one of the member agencies of the Technical Management Group (TMG) under the Philippine Disaster Management System. The Department acts as the resource and recommendatory body in support of the functions of the NDCC. Based on the NDCC Calamities and Disaster Preparedness Plan, the DepEd is mandated to:

1. Organize reaction teams in the Department proper as well as in the regional, division offices, bureaus under it, including the schools, BSP, GSP and other institutions of learning.
2. Make available suitable school buildings nearest the affected areas as evacuation centers.
3. Assist in the public education campaign through integration in the school curricula of subjects relative to the different calamities, their causes and precautionary measures. DepEd has integrated disaster management topics in the lessons and textbooks.

4. Undertake, compile and provide report of damages and submits same to the Chairman, NDCC
5. Disseminate weather information to the general public through the school population and makes the necessary announcements as regards the suspension of classes.
6. Initiate the preparation/ production of circular materials on disaster preparedness, in coordination with other member-agencies, and make these available to schools.
7. Undertake rehabilitation of typhoon-damaged school buildings in the identified typhoon-stricken places.³

Figure 2 shows the set up in the DepEd that is mainly responsible for disaster related concerns.

Figure 2/ The Calamity Disaster and Fire Control Group at DepEd



³ The Role of the DepEd in the Philippine Disaster Management System

Among the strategies and the specific activities of DepEd related to the above functions are:

Organizational Development

- The DepEd organized the DepEd Calamity, Fire and Disaster (CDFC) group. (See Figure 2.)
- Creation and designation of the Calamity/Disaster and Fire Control Group and specifying their tasks and functions

Emergency Response

- During series of 2005 typhoons Unding, Violeta, Winnie and Yoyong, 52 schools were used as evacuation centers in the affected areas while four others were used in Southern Leyte during a previous typhoon.
- Revision of the suspension of classes guidelines as per DepEd Order No. 59 s. 2003

Curriculum Development

- Integrated disaster management topics in the lessons and textbooks of Sibika and Kultura, Science and health, Heografiya for the Elementary curricula and Science and Technology, Edukasyon Pangkalusugan and Citizens Army Training for the Secondary Level.
- DepEd signed a Joint Memorandum Circular regarding the Kiddie/Junior Fire Marshall Project which was conceptualized by DILG and BFD and made into curriculum by DepEd.
- Mainstreaming DRR concepts in the basic education curricula.

Awareness, Training and Campaigns

- Holding of an annual week-long celebration as the Disaster Consciousness Week every July, using the theme conceptualized by the NDCC and encouraging all regions, divisions, and schools to join. Among the activities are the conduct of earthquake, fire and evacuation drills, inclusion of disaster preparedness topics in homeroom discussions, in flag ceremonies and in faculty and PTA meetings and conduct of essay writing or poster making contests using the said theme.
- Preparation of the DepEd Disaster Risk Reduction Manual
- In-house training of DepEd Central Personnel on the precautionary measures before, during, and after an earthquake
- Preparedness of Disaster Preparedness Modules Through Mass Media

Infrastructure Development

- As part of the typhoon rehabilitation efforts, DepEd conducted school-based repair and maintenance, Brigada Eskuwela, Sagip Eskuwela, repair and rehabilitation of school buildings under the Regular School Building Program and Schools Water and Electrical Facilities Assessment Project (SWEFAP) and Calamity Assistance Rehabilitation Efforts (CARE).
- Institutionalization of the School Mapping Exercise through the GIS-Based School Profiling System to conduct risks/hazards mapping and identify suitable sites for new schools, training of DepEd Project Engineers in partnership with NAMRIA, and the creation of a School Mapping Unit at the Physical Facilities and Schools Engineering Division (PFSED), Office of Planning Service (OPS).

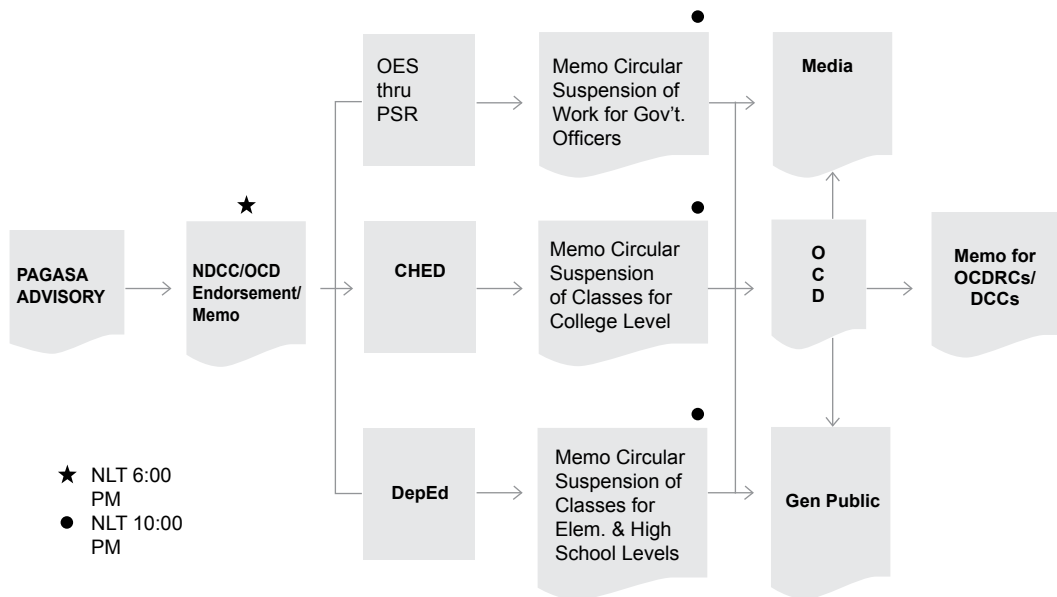
- Coordination with DILG/DPWH to regulate and inspect all school buildings nationwide for safety
- Construction of hazard resilient school buildings such as the Learning and Public Use Schoolbuilding (LAPUS)
- Be Better, Build Better International Design Competition
- Assessment of School buildings' Integrity and Stability (ASSIST)

3. Agency Coordination in Pre, During, and Post Disaster Events

At the national level, the NDCC has an Action Group that acts as the resource and recommendatory body in support of the functions of the NDCC. The Action Group reports to the Civil Defense Operation Center upon receipt of a notice of an impending disaster.

For example, in times of an inclement weather, work in government offices and classes are suspended following the process flow described in the Figure 3.

Figure 3/ Document/Process Flow for Suspension of Work in Government Offices and Classes During Inclement Weather



Since disasters usually takes place at the local level, the responsibility of mitigating, preparing, and responding to disaster and emergencies are lodged with the Local Government Units. Each province, city and municipality and barangay has a Disaster Coordinating Council that serves as the policy and coordinating body in the locality concerned. For mitigation and disaster preparedness activities, each of the concerned DCC

member agencies has its own responsibilities, programs and projects that are coordinated through the DCC. With the decentralization of local governance, each local government such as the provincial, city and municipal local government units are mainly responsible in responding to disasters and emergencies, with the support of the various agencies. Under the present local governance, services for health, agriculture, social welfare and development are devolved in the LGUs and they are expected to respond to emergencies under the supervision of the local executives such as the governor for the province and mayors for cities and municipalities. The DepEd is not devolved in the LGU but as a member of the DCC, its representative in the locality is responsible in executing the functions in times of emergencies.

Operationally, there are organized services in each local unit that responds to disasters, coordinated by the DCC. The members of these services are various agencies whose functions are related to the services provided. Thus, the DepEd is a member of the Relief Services, tasked mainly to make the school buildings available as evacuation centers and in utilizing the services of the teachers in relief activities in temporary shelter. The various services include the following:

- Communication and Warning Service
- Emergency Transportation Service
- Evacuation Service
- Rescue and Engineering Service
- Health Service
- Auxiliary Fire Service
- Police Auxiliary Service
- Relief Service
- Public Information Service
- Rehabilitation Service

The organizational set up at the provincial and municipal levels is replicated at the barangay or village level, but the members are the community leaders and volunteers, coordinated by the Barangay Disaster Coordinating Council headed by the Barangay Chairperson.

4. Education in Emergencies: The Philippine Cluster in DRR

The Philippines adopts the Cluster Approach. Prior to the flashflood disaster in Albay, several NGOs concerned with education and children have been meeting for common projects like the development of audio-visual production for awareness building purposes. When the Albay flashflood event happened in 2006, the same NGOs found themselves responding to the various needs of the affected communities. They worked together in emergency response until they decided to group themselves into clusters to facilitate the management of emergency response. The cluster approach “ is in line with the United Nations Humanitarian Reform Agenda in pursuing a reform program that seeks to improve the effectiveness of humanitarian response by ensuring greater predictability, accountability and partnership” The legal basis is contained in the National Disaster Coordinating Council Circular dated May 10,2007 entitled “Institutionalization of the cluster Approach in the Philippines Management System, Designation of Cluster Leads and Other Terms of Reference at the National, Regional and Provincial Level.” (De Juan, Power Point Presentation).

The Philippines adopts the cluster approach which is in line with the United Nations Humanitarian Reform Agenda's pursuit to improve the effectiveness of humanitarian response by ensuring greater predictability, accountability, and partnership.

The implementation of the UN Global Cluster Approach has been instrumental in the coordination, sharing information and working together among the agencies and NGOs concerned with education. The DepEd is a recipient of various humanitarian interventions and assistance by the cluster members and donors, with multi-stakeholder participation actively pursued in the implementation of the safe school project. (UNICEF, 2007)

The Education Cluster is affiliated with the Inter-Agency Network for Education in Emergencies that convened a workshop on INEE Minimum Standards for the Philippines Education Cluster in April 7-8, 2008. Leading the cluster are the UNICEF and the Save the Children. The other member organizations are the Plan International, Children International, ABS-CBN Foundation, Council for the Welfare of Children/ECCD, Center for Disaster Preparedness, Department of Social Welfare and Development and the Philippine National Red Cross. Recently, the University of the Philippine College of Social Work and Community Development joined the cluster to assist in DRR Knowledge Management, research and mainstreaming DRR in the tertiary education. The system for coordination among the education clusters and other government bodies is shown in Figure 4.

III. SOCIAL AND ECONOMIC IMPACTS OF DISASTERS

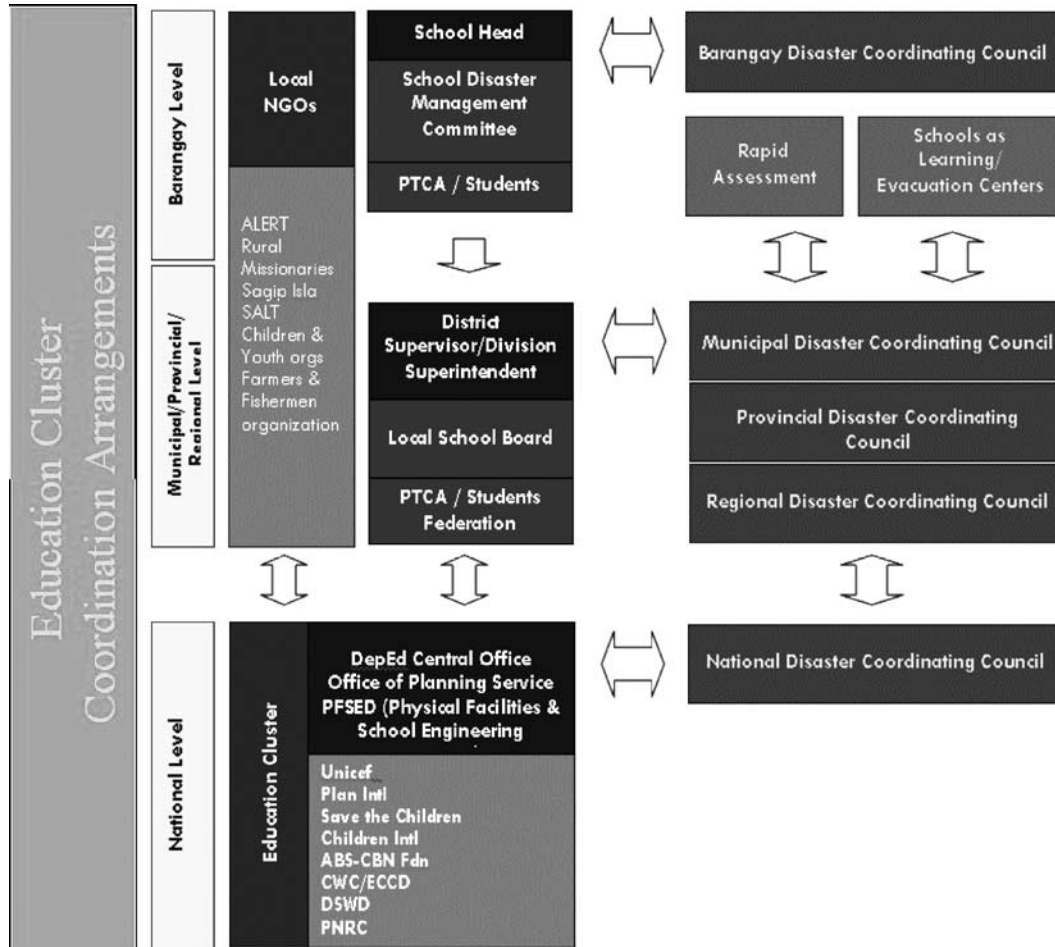
A. Present Situation of the Education Sector

The Philippine government admits the continuing deterioration of the quality of basic education. The public school system finds it difficult to cope with the expansion of the student population, brought by the continuing rapid growth, estimated at 2.3 percent annually. One of the identified reasons for the situation, particularly at secondary level, is the implementation of free public secondary education. There is under investment in basic education, as evidenced by the decline in real spending per student. This is due to budgetary constraints where 89 percent of the budget of the Department of Education goes to salaries and other personnel benefits. On the other hand, the expenditures for developmental purposes that could help improve the quality of education are taken from its maintenance and other operating expenses (MOOE) budget at seven percent. The classrooms and instructional equipment, including computers for teaching and learning purposes are obtained from the capital outlay of four percent. (Philippine Medium Term Development Plan, 2004-2010)

The Philippines suffers from a deteriorating quality of its basic education as it continues to be confronted with a growing population and a budgetary constraint. This is an enormous challenge as data in 2000 shows that the country has one of the highest basic literacy rate among South East Asian countries.

The Philippine Medium Term Development Plan 2004-2010 spells out the development plan for the education sector, based on prevailing situation. The basic literacy rate in the Philippines in 2000 was 92.28 percent, so far one of the highest in Southeast Asia. On the other hand, functional literacy was 83.79 percent (81.7 % for males and 85.9% for females) based on the 1994 Functional Literacy Education and Mass Media Survey (FLEMMS).

Figure 4/ Coordination Arrangement of the Education Cluster



For the school year 2003-2004, the actual enrolment was 19.2 million for both public and private education (67% for elementary and 33% for secondary). There were 17 million students in the public school system (71% for elementary and 29% secondary). As can be seen in Table 2, the net participation was at 90.05 percent for elementary and 58.03% for secondary. While the participation at the elementary level was almost the same for boys and girls, there were more girls than boys at the secondary level. The girls performed better too with respect to survival, retention and completion. The performance of the basic education sector in SY 2002-2003 is summarized in Table 2.

Table 5/ Basic Education Key Indicators, SY 2002 – 2003 (in %)

Source: *Medium Term Development Plan, 2004-2010*

Particulars	Male	Female	Overall
Participation Rate			
Elementary	89.26	90.87	90.05
Secondary	53.8	62.35	58.03
Cohort Survival Rate			
Elementary	66.01	74.06	69.84
Secondary	58.72	73.13	65.83
Drop-Out Rate			
Elementary	8.44	6.15	7.34
Secondary	16.26	9.96	13.1
Completion Rate			
Elementary	62.94	71.18	66.85
Secondary	52.38	67.46	59.79

B. Drop Out Rates In Relation To Disasters

The overall drop out rate for high schools in the Philippine is 13.1 %, higher among the males with 16.26 % compared to 9.96% among the females. There are many reasons why it is higher among the males. While there are sentiments that the males are less interested in studying, thus dropping out of schools, it is a reality that many males are mobilized into the work force at an early age to help their parents earn more income for the family. Poverty is still the main reason for dropping out of school. Unfortunately, dropping out due to disaster as specific cause is not documented nationally.

One reason for dropping out among the elementary school children is that they start the school late, leading to high dropout rates later. A measure to offset this was to “get kids to school at age 6 and initiate in-school feeding – not rice distribution – to lessen the dropout rate in Grades 1-3. Once these kids get to Grade 4, their chances of finishing basic education are markedly better than average kids.” (Luz, Juan M. 2007, November 26, System-wide solutions needed, not band-aids. *Philippine Daily Inquirer*, pp. A1, A19)

According to a Teacher in Charge in a high school, the school is able to get the reason for dropping out of school, but what they forward to the school superintendent are just the number or statistics in terms of enrollment and drop out. The reasons for dropping out are not summarized statistically and not forwarded to the higher authorities. The Teacher in Charge also said that the reasons cited for dropping out are also censured in a sense that there is editing taking place in citing the reason for dropping. For example, demolition is changed to transfer of residence as a reason for dropping.

This is just one case which exhibits the lack of an explanation on why it is difficult to come out with a national figure on the number and reasons of dropping out due to disaster events. In specific local cases, drop out situation due to disasters can be taken, as shown in the following case.

A Case on Students Drop Out Due to Disaster and the Response

The Jardin Eden Academy, a preschool for the underprivileged, offering nursery, kinder and prep education for free, was used as a shelter of 17 families from nearby villages after the onslaught of Reming, exactly a year ago.

Eden Mirabueno, 63, the school's founder and director, ... said that most of those who took shelter in the school at the height of Reming were the families of the students of Jardin de Eden Academy.

Mirabueno started the academy in June 2006. The school initially registered 51 enrollees, but around half of the student population dropped out in the aftermath of Reming. The houses of some students were completely swept by floods triggered by the typhoon.

“Some of our pupils’ families had to be relocated to far flung resettlement areas. Most of them couldn’t afford to pay the transportation fare everyday, so they never come back,” said Lily Mular, a nursery teacher at the academy.

Mirabueno said the school can survive on an annual allocation of P1,500 per child, but admitted that since donations came irregularly, they often experienced shortages of food and school supplies. (Gamil, J. T. 2007, December. Stories after storm: Blessings among ruins. The Philippine Daily Inquirer, pp. A1, A10)

C. Disruptions Caused by Disasters on the School System

1. Facilities Used as Emergency Shelter

By the very nature of the national policy mandating the DepEd to be the agency responsible for providing evacuation centers through the school facilities, public schools are inevitably affected when there are families that have to be evacuated. As a result, disruptions in the school activities take place. From the five cases of schools studied in this research, there were three reasons when a school is not used as an evacuation center, namely:

- When the school is also vulnerable and adjacent to the disaster area
- When it is a private school
- When there are other facilities like elementary school that can accommodate the disaster victims.

Schools are often used as emergency shelters in the event of disasters, resulting to disruption of classes and lack of and damage to school facilities.

For the schools wherein classrooms were used as an evacuation center, the Principals experienced the problems in the disruption of classes, cleanliness, and disturbance among the students, causing them to have less concentration in their studies. In a case where all the classrooms were used as an evacuation, the classes were held outside, using tents.

Among the teachers, they cited the following problems faced in evacuation:

- Disruption in the school classes, difficulties in teaching and holding of classes in the tents
- Cleanliness, occupants forget to clean their mess
- Damages to facilities
- Lack of rooms
- The lack of cooperation among the occupants, quarreling among the evacuees
- Noise, arrangements, curfew for the evacuees
- Having no control over the people going in and out of the room
- Lack of sleep
- Difficulty in distributing relief goods

Table 6/ Evacuation Practices Among the Five Case Schools

School	Facilities Used	Capacity No. of People	Alternative classrooms	Problems faced	Response
Tambis National High School, St. Bernard, Southern Leyte	Not used because it is near the disaster area	Not applicable	Classes still held in the classroom since they were not used as evacuation	NA	NA
Cristo Rey Regional High School, St. Bernard, Southern Leyte	All the 17 classrooms	688 or 40 persons per classroom	Outside using the tents	Students were disturbed; they could not concentrate in their studies	Report to school administrators and LGU officials for assistance
Tabaco National High School	24 out of 131 classrooms	More than 1,000 or 41 persons per classroom. School can accommodate up to 2,000	Not all classrooms are used for evacuation; Emergency schedule is done to avoid disruption of classes.	Cleanliness	Creation of working committees composed of teachers, evacuees and LGU personnel
St. Louise de Marillao School of Tabacco	15 classrooms not used as evacuation; a private school	Not applicable	NA	NA	NA
Basilan National High School	Never used as an evacuation center; only the elementary school is used	Affected people can be accommodated in the elementary school, usually due to fire.	NA	NA	NA

2. Effects of Disasters on Students

Teachers from these schools noted some effects of disasters on the children. These are:

- a. Disruption in the schedule of classes.** Due to suspension of classes and implementation of emergency schedule, students had to attend classes even on Saturdays and Sundays. They missed classes, hence missed their lessons.
- b. Disruption in the learning.** It was noted that the children have lower attention span and interest in their studies. They were easily disturbed, especially when there were relief distributions. They also became noisy, uneasy and had poor mastery of lesson.
- c. Students were not comfortable in their temporary classrooms.** Since some classes were held in the tents, it was apparently not conducive for learning and uncomfortable for the students.

There are already many cases documented showing children dying while in school due to disasters such as the one in Cabanatuan City where a four story school building collapsed due to the 1990 earthquake and the elementary school in Brgy. Guinsaugon where the whole village was covered by mud due to landslide.

There are also cases when students die, not within the school premises but in the immediate environment. Take the following case. An eight year old boy was swept off by flood and died after crossing the river in Barangay Kalibhan, Carcar City, province of Cebu in January 2008. The boy “was on his way home from school when he decided to cross the river even if the water was already rising....Halfway through the river, he was swept off by flood and was seen lifeless a few meters away.” Accordingly, the province had been experiencing days of heavy rains although there was no typhoon in the area. The overflowing of rivers and pockets of landslide were reported in various towns. Motorists traversing the city were stranded for hours due to the street flooding that reached the knee level.(Mosqueda, 2008; 21).

This case indicates the need for protection for children beyond the school premises, the need for children, teachers, parents and community leaders to be aware of the risks and urgency to respond to risky conditions, especially by local authorities. It also shows the need for more effective warning system.

3. Effects of Disasters on Teachers

The teachers were also affected by disasters since they were also mandated to assist during emergencies. In addition to the teaching functions, they had to do evacuation related tasks. The following are some of the sentiments showing the effects of disasters on the teachers:

- d. Emotionally bothered, tired, exhausted, over fatigued and uncomfortable.** Teachers had additional tasks like being the Chair of the Evacuation Center Management Committee, an information officer, caregiver and room coordinator. They had to help the affected families. They were considered as volunteers when there were emergencies. They had to come to school even on weekends.

Disasters equally impact on teachers who are pressed on to take additional roles and adjust to a difficult teaching environment.

e. Difficulties in teaching. They had difficulties in adjusting to the environment. They had to bear with the discomforts in the tents used as classrooms. Sometimes it was too hot, and sometimes, it was muddy. They had to wear boots while teaching and had difficulties in getting the attention of the students, especially when there were donors giving relief. They had more than 50 students per class in the tents and this made the class difficult. Classes were disturbed because there were so many visitors getting information.

4. Effects of Disaster on the Personnel

The respondent teachers cited the effects of disasters among the non-teaching personnel in the school.

a. They had additional tasks. The personnel also did a lot of sacrifices in terms of time and efforts extended to cater to the needs of the evacuees. They were also not comfortable. They had additional tasks like cleaning and maintaining the facilities. Together with the teachers, they were also very mobile as volunteers.

b. Lesser time given to their respective families. Due to additional tasks assigned to the personnel, they had to spend more time in the school, even on Saturdays and Sundays.

Yet despite all these, there seemed to be no regret in doing the sacrifices among those who helped the people in Guinsaugon disaster, saying “All of us were assigned and given different tasks. We were all busy but were happy serving Guinsaugon people who were in need, even if we did not have enough time to rest.”

5. General Effects of Disasters

The multiple responses of the 51 teachers to the question on the effects of disaster show that the physical damages ranks first, followed by the disturbance in the classes that affected the learning of the students. This is followed by the suspension and change of schedules of classes.

Table 7/ General Effects of Disaster in the School

General Effects	F	%
Destroyed or damaged classrooms, buildings and surroundings of the school campus	21	31.8
Disturbance of classes, students became uncomfortable and bored in their studies	14	21.2
Suspension of classes, change in the schedule of classes	10	15.2
Reduction in the attendance of students	5	7.6
Damages and lost of books, students projects, and school materials of teachers	5	7.6
Drop out of students, transfer of students to other schools	3	4.5
Additional school buildings	2	3.0
Increase of students due to transferees from other schools	2	3.0
Gained more trust and confidence	1	1.5
Visitation from foreigners	1	1.5
Foul smell and clogged drainage	1	1.5
More work for school personnel	1	1.5
Total	66	99.9

6. Effects of Man-Made Disasters Such as Armed Conflict

Disruption of school activities due to disasters, whether natural or human made such as wars and conflicts, takes place not only when the school is used as an evacuation center, but because of security reasons. A study on the assessment of children and women affected by armed conflict illustrates how human made disasters affect the education of children, as shown in the following cases (UNICEF, 2007).

Interrupted schooling, disrupted farming, Leyte

The children value their studies and are deeply affected whenever their schooling is disturbed by armed conflict. Benjie said, “We don’t go to school when there’s ongoing shooting because we might get hit.” (Kung may putukan hindi po kami papasok sa iskul. Baka matamaan ng baril.) Some children like Vic, 7, do not attend classes even when there is no fighting. He said, “As long as the military is in the big house near our school, I don’t go to school.” (Hindi pa ako papasok sa iskul kung may military... sa malaking bahay malapit sa school namin). Temy said he makes it a point to attend class everyday except when the military is in their village. There are those like Samuel, however, who do continue going to school because they say the soldiers are just loitering (nakatambay lang sila).

But it is being displaced from Leyte to Manila that has really disrupted the children’s studies. Raya recounted, “We evacuated to Daang Tubo (Caloocan City) in March. When my mother arrived we had already transferred to Montalban (in Rizal). I still haven’t been able to go back to school because I was late for enrolment, I want to study again next school year.” (Lumuwas [kami] noong March... [Pumunta] kami sa Daang Tubo. Hanggang ngayon, di nag-aaral kasi nahuli na sa pag-enroll. Ngayong pasukan gusto kong mag-aral.)

Samuel said he has been out of school since his family arrived in Payatas, Quezon City. “When we arrived here in Payatas, I couldn’t enroll because I had no report card. [Hopefully] I can continue my studies in the coming school year,” (Pagdating dito (sa Payatas) di nag-aral kasi walang card. Sa pasukan mag-aaral na ako) he says. Temy said he had stopped going to school even while he was still in Leyte. (pp.271-272)

Barangay Pantawan, North Cotabato.

There is an elementary school with over 300 students from grades one through six; there are six classrooms, one for each grade level, and seven teachers. The number of enrollees reportedly increases every year, although every time there is fighting between the AFP and the MILF, many students transfer to neighboring schools or stop attending school altogether. It is unfortunate that the drop-out rate has steadily increased every year since the school was put up in 2000. Many parents also find it more and more difficult to send their children to school because of sustained increase in the cost of living

Consequently, some children drop out of school and become farm laborers. The school was used as a military camp during the June 2003 fighting and parts of the building were slightly damaged from the fighting and artillery fire. (p. 310)

“We don’t go to school when there’s ongoing shooting because we might get hit.”

“We evacuated to Daang Tubo (Caloocan City) in March. When my mother arrived we had already transferred to Montalban (in Rizal). I still haven’t been able to go back to school because I was late for enrolment, I want to study again next school year.”

“When we arrived here in Payatas, I couldn’t enroll because I had no report card. [Hopefully] I can continue my studies in the coming school year,”

7. A Case on the Effects of Disaster in Education

Another case that is worth mentioning was experienced by two cabinet secretaries and reported in a daily periodical.

Flooded for most times of the year, the San Isidro Elementary School here became the butt of jokes of two Cabinet secretaries... To reach the school, Ebdane and Lapus (Cabinet Secretaries) crossed a concrete bridge that, while able to withstand the rampaging waters from a nearby river, sagged. At the school compound that looked every inch like a swamp, the secretaries tread on sandbags and wooden stilts to reach the new school building and three classrooms that they inaugurated that day.

It was one of two buildings spared from the floodwaters that reached knee-deep. Two other buildings were swamped with stagnant waters. The stage's floor was among the few places that were dry that day.

Classrooms in San Isidro are among the 63,000 classrooms all over the country that need repair or total reconstruction... At least P45 billion was needed to improve these... In the 2008 budget, the government allotted P5 billion to build new classrooms.

Mt. Pinatubo's eruptions in 1991 and lahar (mudflows) carried by rains at the mouth of the Manila Bay had worsened the floods in the coastal towns of Masantol, Macabebe and Minalin, said Pampanga Rep. AnnaYork Bondoc. "In the rehabilitation that followed, our schools were the last to be repaired or improved," she said.

The project "Retrieval of infrastructures for education and sanitation facilities," conceptualized by Emil Sadain, former Mt. Pinatubo Emergency Office chief in the DPWH, and former Pampanga Rep. Juan Pablo Bondoc in 2001, took off only in January 2007. Out of its savings, the DPWH managed to scrimp P48.8 million to build 18 school buildings in the three towns. Each building has a total floor area of 189 square meters and divided into three classrooms. Each building has a toilet and lavatory, electricity and water systems.

Tina Santos, a teacher here for 33 years, has been pushing for flood-free schools. "The floods here last throughout the year but we do not miss a class. We teach even when the water is up to our legs," Santos, 56, said. She said parents carry their children to school. The more than 600 students here sit on their desks during class hours, she said.

"NO one wears any shoes anymore when they go to school" she added. A colleague, Gil Lacap, wears rubber boots all of the time. "The water is low today," he said.

Floodwaters can get as high as two meters, especially when dams on the eastern side release excess water. Another colleague, Rosalia Viray, rued the fact that her students are using the same classrooms where she studied, referring to a building built after WW2. (Orejas, T. 2007, December. "Flooded Pampanga school draws attention", Philippine Daily Inquirer, pp. A17.)

To reach San Isidro Elementary School, secretaries Ebdane and Lapus crossed a concrete bridge that, while able to withstand the rampaging waters from a nearby river, sagged. At the school compound that looked every inch like a swamp, the secretaries tread on sandbags and wooden stilts to reach the new school building and three classrooms that they inaugurated that day.

"The floods here last throughout the year but we do not miss a class. We teach even when the water is up to our legs."

D. Coping Mechanisms and Positive Effects of Disasters

1. Coping Mechanism of Teachers

The high school teachers have varied ways of coping with disaster events. The following are their coping mechanisms:

- Increasing capability through educational activities such as seminars, disaster drills and disaster orientation training
- Catching up with lessons through take home classroom activities, doubling time on lessons, making simpler lessons, having remedial classes and extending school days
- Spiritual activities like prayers and mass services
- Having cognitive conditioning through mental exercises and optimism
- Attending de-briefing seminars given by NGOs and sharing experiences with co-workers
- Contributing financial support
- Providing counseling, comforts and encouragement to affected individuals
- Helping the evacuees help themselves
- Maximizing the use of available facilities and rendering unconditional service
- Able and transparent management
- Repairing damages with the teacher's initiative and reconstructing the school facilities
- Requesting the LGU for infrastructure repair, with the support of the Parents Teachers Association
- Advertising the school accomplishments

How do the teachers catch up with the missed lessons? Since it was imperative for them to complete their lessons, the teachers had to conduct special classes even on Saturdays and Sunday. They also extended the class hours per day to cover more lessons. They also used the free and vacant time to catch up with the lessons.

Another mechanism was by giving extra assignments and research work. Another way was intensifying the classroom contacts with the students. They also changed the venue of the classroom to be able to have a class.

Among the alternative classrooms used were the tents, the stage, auditorium, bleachers, gymnasium, grandstand and other halls, barangay chapel, offices, laboratory rooms, corridor of the building, kiosks and under even under the trees.

2. Positive Effects of Disasters

While it is true that disasters have damaging impacts, the school officials and the teachers saw positive impacts as well. One principal said that disasters lead to, "creating awareness in the minds of the students to tackle any eventualities that might occur in the future." Having learned the techniques in handling any disaster, the teacher will be in a better position to positively respond to the situation.

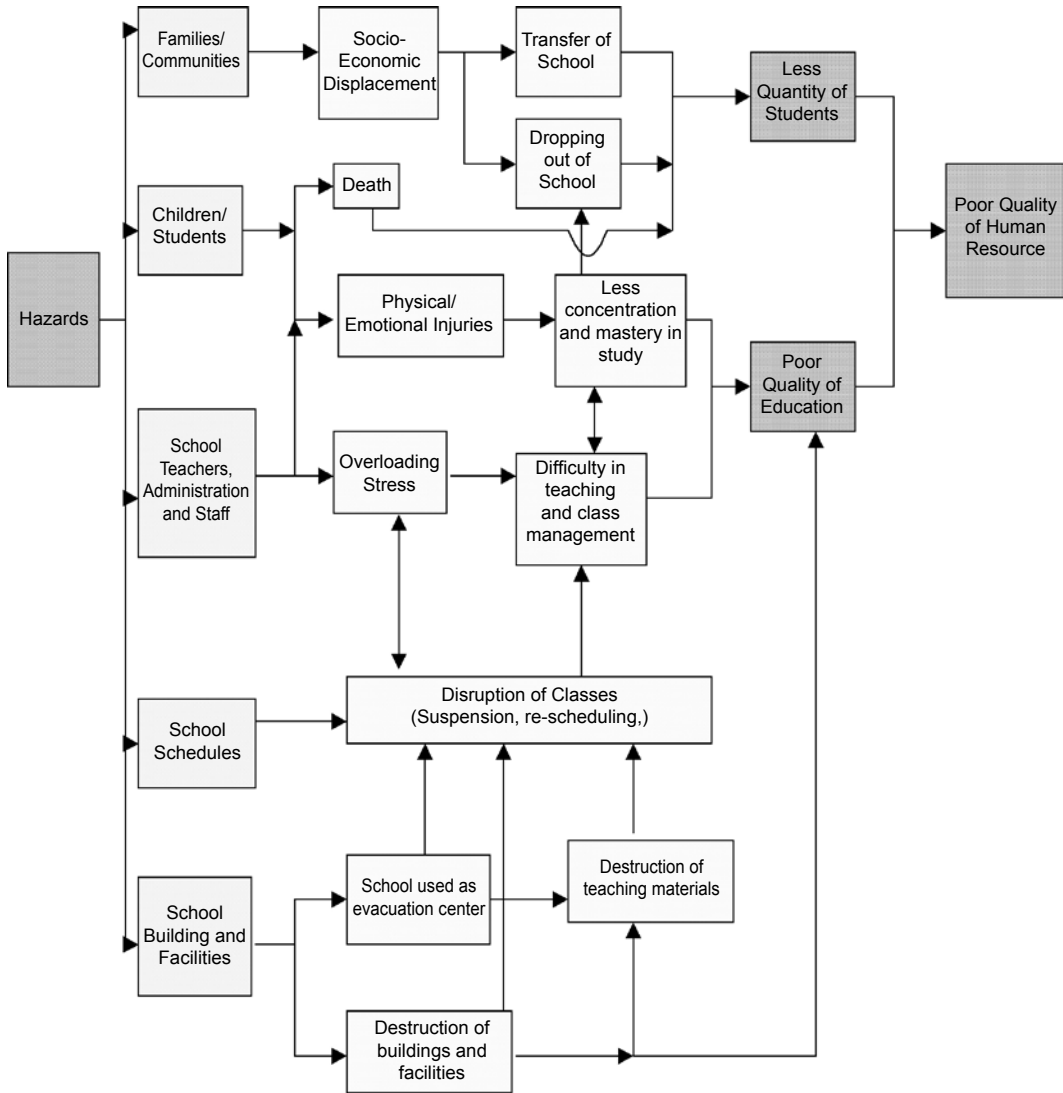
Another school official said that the school became the recipient of two story buildings, books and scholarships. The school enrollment increased because of the scholarship granted by the NGOs and other philanthropists.

Among the teachers, they see the following as the positive impact of disasters:

- Improved school buildings and plaza, reconstruction of facilities and school repair
- Greater sense of cooperation, unity, generosity, respect and love instilled in people; they learned to become more disciplined, organized; had greater rapport with the community and greater bayanihan (people helping each other voluntarily).
- Students and parents learned what to do in times of disaster and brought sense of preparedness among the people
- Improved the capabilities of the school administration, faculty, staff and personnel; people learned to manage and facilitate the affected families; created strong camaraderie among the people of the school and challenged the teachers to be more creative and flexible in managing classes and students
- Government became more conscious of disasters
- Increased in enrollment due to more scholarship made available
- Having visitors from different countries

While it is true that disasters can bring in positive consequences as well, these can be done and realized better if there are no disaster events taking place. Definitely, the negative impact surpassed whatever positive impact disasters could have. Figure 5 shows the extent, the relationships and the complexity of the impact of disasters that could affect the quality of human resources in the country.

Figure 5/ The Negative Socio-Economic Impact of Disaster in Education Sector



E. Recommendations for Minimizing the Socio-Economic Impacts of Disasters on the Education Sector.

The school officials and teachers gave the following recommendations to minimize the impact of disasters:

- 1. Enhance education on disaster preparedness.** There has to be information drive, drills, seminars and training on disaster preparedness among the students, the parents, the people in the community and the local Disaster Coordinating Councils.
- 2. Integration of DRR in the curriculum.** As part of equipping the students in disaster preparedness, then DRR must be mainstreamed or integrated in the curriculum of schools in all levels.
- 3. Alternative evacuation centers.** Other existing facilities should be used for evacuation such as the church and other government controlled buildings so that the school would not be disturbed. Evacuation centers must be built.
- 4. Provision of transportation services.** There has to be buses or other modes of transportation for students who are living in far places. (Students had to walk kilometers distance for more than an hour in going to school).
- 5. Infrastructure development.** Affected buildings and the facilities have to be rehabilitated. There has to be a river control.
- 6. Improvement of the evacuation system.** It was suggested that there must be a pre-emptive evacuation. There has to be an effective communication system with the disaster action committee. The evacuees must be properly instructed to take care of the government properties. Classes must not be disturbed.
- 7. Adequate support from the local government.** The LGU must provide assistance in any form to the affected schools.
- 8. Identification of all the hazards.**
- 9. Prayers.**

IV. PHYSICAL IMPACTS OF DISASTERS ON EDUCATION SECTOR

A. Country and Vulnerability

On July 16, 1990, a magnitude 7.8 earthquake struck northern Luzon causing severe damages to buildings and infrastructures in at least four provinces namely, Nueva Ecija, Benguet, Pangasinan and La Union in central and northern Luzon. For several days, television viewers were mesmerized with a blow-by-blow account of a collapsed school building in Cabanatuan City in Nueva Ecija that killed more than a hundred students. The media managed to interview some of the school children while pinned into the rubble. One girl even asked that her legs be cut off just for her to be freed from the rubble. The public witnessed the girl getting weaker as the hours passed by, until she died.

That happened in one of the many school buildings that were damaged by the earthquake. There were a lot more, with damages varying from cracks, partial to complete collapse.

More recently, on February 15, 2006, a deep-seated landslide covered the barangay of Guinsaugon in Southern Leyte. In the process, the Guinsaugon elementary school was buried killing almost all of the school children including its principal and a group of women having a meeting in the classroom. They were buried in a pile of mud from the landslide.

The Philippines' geographic setting makes it vulnerable to geologic and hydro-meteorological hazards. The Philippines has more than 300 volcanoes, 22 of which are considered active or have had a record of eruption for the last 10,000 years. The country is also surrounded on both sides by active subduction zone systems which generate large magnitude and at times, tsunamigenic earthquakes. The archipelago is also cut by numerous active fault systems that also cause seismic hazards. About 20 earthquakes are recorded by the Philippine seismic network operated by the Philippine Institute of Volcanology and Seismology (PHIVOLCS) per day while at least one damaging earthquake occurs per year.

In terms of hydro meteorological hazards, typhoons bringing strong damaging winds and heavy rains pass through the archipelago at an average of 20 per year, at times crossing populated areas that at times cause landslides, floods and flashfloods to occur.

Schools are naturally used as evacuation sites during emergencies. There is an issue between using the schools for its real purpose, as teaching venues, and using them as evacuation centers. Meanwhile, school site selection is usually dependent on land or lot donations from local individuals, regardless of its safety to natural hazards. Hence, some schools are built on unsafe areas despite the DepEd's mission of providing safe environment to the school children. Aside from the location, what are inside the schools are equally important to determine safety. The results of various school watching exercises done in selected schools by PHIVOLCS for the purpose of developing earthquake evacuation identified unsafe practices in a typical school. These included locked doors along hallways, unsecured cabinets which could easily topple during earthquake shaking, flowerpots along open window sills which could fall on students, lack of sufficient numbers of fire extinguishers and first aid kits and the like. Some schools also still have to develop their own emergency teams who will take care of school evacuation plans, practicing the drills and performing rescue and first aid during emergencies.

The Philippines' geographic setting makes it vulnerable to geologic and hydro-meteorological hazards. The country has more than 300 volcanoes, 22 of which are considered active or have had a record of eruption for the last 10,000 years. The country is also surrounded on both sides by active subduction zone systems which generate large magnitude and at times, tsunamigenic earthquakes. The archipelago is also cut by numerous active fault systems that also cause seismic hazards. About 20 earthquakes per day are recorded while at least one damaging earthquake occurs per year.

B. Organization Structure for Physical Development

As mentioned earlier, the Central Office of the Department of Education has five services, one of which is the Office of Planning Service (OPS). This Office is responsible for providing the department with effective and efficient services like generating and processing of education-related data, developing educational programs/projects, program monitoring, assessment and evaluation, planning and programming of educational facilities and providing technical assistance to requesting offices from the national to the sub-national levels related to the planning activities.

One of the divisions of the Planning Services is the Physical Facilities and School Engineering Division (PFSED) that is primarily tasked to “formulate policies, guidelines, and standards to upgrade, improve and maintain the physical plant, educational facilities and equipment for basic education. It is also responsible for the preparation of the Annual School Building program and for the monitoring of its implementation”.

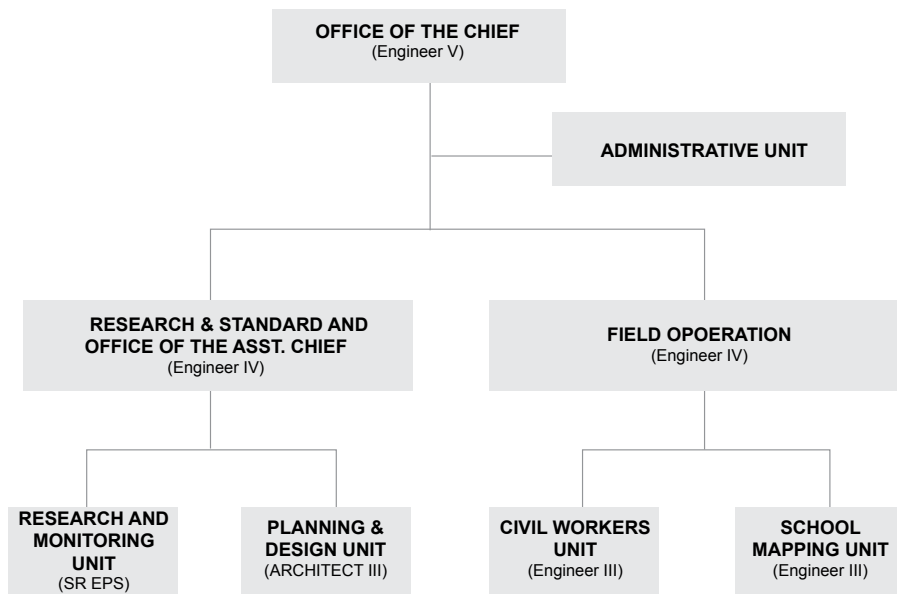
The PFSED was established in 2005, with the merging of the Physical Facilities Division and the Task Force Engineering Division through DepEd Order No. 17 series. 2004 or the Creation of the Physical Facilities and School Engineering Division. Prior to the merger, the Physical Facilities Division was concerned with the policy formulation while the Task Force was concerned with the implementation of the policies. The school buildings then were constructed through another agency, the Department of Public Works and Highways. The merger created a 127-person workforce, with 1-3 engineers or architects designated nationwide in the different regional offices. Out of the 127, only 19 personnel hold permanent positions while the rest hold contractual positions.

C. Impact of Past Disasters

The records of the effects of past disasters on schools and on the educational sector in particular have not been systematically documented at the national level. The DepEd PFSED started to keep systematic records of school damages caused by disasters only in 2006.

On the other hand, the Office of Civil Defense (OCD) keeps a record of major and minor impacts of both natural and man-made disasters in terms of casualties (dead, injured, missing), affected population, evacuated population and damages. Table 5 lists the summary of these items as determined by OCD from 1984 to 2006. Unfortunately, the available OCD list does not reflect school building data. However, for some specific hazards, there exist some individual damage reports from where damages to schools may also be gathered. Table 6 lists the damage data from earthquakes and volcanic eruptions to schools based on PHIVOLCS database.

Figure 6/ Functional Organizational Structure of the Physical Facilities and Schools Engineering Division (PFSED)



YEAR	PESO per DOLLAR* (Exchange Rate)	Cost in PESOS**(Millions)	Cost in Dollars (Millions)
1984	19.76	115	\$5.82
1985	19.032	447	\$23.49
1986	20.53	1,040	\$50.66
1987	20.8	1,011	\$48.61
1988	21.335	861	\$40.36
1989	22.44	933	\$41.58
1990	28	27,212	\$971.90
1991	26.65	17,746	\$665.89
1992	25.096	10,862	\$432.82
1993	27.699	21,340	\$770.42
1994	24.418	5,246	\$214.84
1995	26.288	19,002	\$778.20
1996	26.3	1,678	\$63.80
1997	39.975	5,587	\$139.76
1998	39.059	28,368	\$726.29

Table 8/ Losses
Due to Disasters,
1984- 2006

Source: * BSP,
Reference
Exchange Rate
http://www.bsp.gov.ph/statistics/statistics_online.asp
** NDCC

Table 8/ Continued...

YEAR	PESO per DOLLAR* (Exchange Rate)	Cost in PESOS**(Millions)	Cost in Dollars (Millions)
1999	40.313	6,729	\$166.92
2000	49.998	9,776	\$195.53
2001	51.404	9,223	\$179.42
2002	53.096	3,420	\$64.41
2003	55.569	5,192	\$93.43
2004	56.267	14,244	\$253.15
2005	53.067	3,367	\$63.45
2006	49.132	21,105	\$429.56

Table 9/ Damages
to School by
Earthquakes

DATE AND EVENTS	SCHOOLS	DAMAGES	REMARKS	REFERENCE
1937, August 20 Alabat, Quezon earthquake	Arellano High School Mapa High School Ermita Elementary School Tondo Primary School Annex Quiapo Primary School	Damaged stairways Damaged stairways Stripped walls were cracked walls were cracked and windows were Broken	condemned 10 more city schools in Manila were slightly damaged	Bautista, Proceedings Metro Manila, 2000;
1968, August 2 Casiguran earthquake		Hollow block walls of an elementary school in Cagsiguran collapsed		Proceedings Metro Manila, 2000;
1970, April 7 Baler Earthquake	P. Guevarra elementary School Hope Christian School Agoncillo Elementary School Manila High School	Collapsed suffered "X" cracks and moderate damage Suffered severe shear damage in two first-storey columns Concrete hollow block panels had been severely damaged and would have collapsed newer wings suffered moderate frame damage and considerable panel damage; collapse of its rooftop	the school is L-shaped and is three storeys high, damaged repaired and whole building completed in January 1970 hollow triangle shaped building	Skinner and Watabe, 1970; SEASEE, 1985; Bautista, Proceedings Metro Manila, 2000;

Table 9/ Continued...

DATE AND EVENTS	SCHOOLS	DAMAGES	REMARKS	REFERENCE
1973, March 15 Ragay Gulf Earthquake	Lopez Provincial School Hondagua Elementary School	concrete hollow block retaining walls of a 5-room PTA building collapsed on both sides walls of Library were badly cracked concrete hollow block wall of one of the classrooms toppled down		Morante, 1974;
1977, March 19 Palanan, Isabela Earthquake	Elizade Bldg in Araullo High School	cracked and windows were broken		Bautista, Proceedings Metro Manila, 2000;
1987, May 18 Cabanglasan, Capinunan, Bukidnon Earthquake	Elementary school building of Baranggay Mandaing Kabulohan at Paradise High School Building	Totally collapsed and ground cracks Totally collapsed	no reinforcing steel bars	Cruz et al, 1987
1988, June 20 San Jose, Occidental Earthquake Offshore	Ilin Elementary School Bangkal Elementary School Ambulong Elementary School	E-W trending hollow block walls dividing five classrooms totally collapsed N-S trending walls have minor cracks only Cracks in flooring Marcos type building have cracked and collapsed walls; a wooden building of the school also totally Collapsed	buildings of the school were damaged; damaged was worsened by poor construction quality; walls that collapsed have only bamboo sticks as reinforcement;	Solidum and Sabit, 1988;
1990, February 8 Bohol Earthquake		School building fronting municipal hall suffered extensive cracklings on its walls and Partial collapse of its concrete fence		Umbal et al 1990;
1990, July 16 Rizal, Nueva Ecija Earthquake	117 schools in Manila	large school building in Cabanatuan collapsed Damaged	more than 150 students were killed;	The July 16, 1990 Technical Monograph; Bautista, Proceedings Metro Manila, 2000;
1994, November 15 Mindoro Island Earthquake		schools were heavily damaged; structural failure and partial collapse of structures	total cost of damaged public school rehabilitation was estimated to be P33,555,000;	Phivolcs Quick Response Team, 1994;
2003, February 15 Masbate earthquake	Masbate National Comprehensive Highschool Jose Zurbito Sr. Elementary School	Several buildings suffered severe cracks and column wall joint failure longitudinal and transversal fractures along the length of the beam and of the column		Phivolcs Quick Response Team, 2003; Phivolcs Quick Response Team, 2003;

PART C: SCHOOL CONSTRUCTION IN THE PHILIPPINES

D. Analysis of the Budget for Education and School Building

Budget allocation for the DepEd has increased since the last few years. But still, the low amount of money spent for an individual child by the government for education alone has been widely criticized. Comparing the amount with those spent by other Asian countries and developed countries, the Honorable Secretary Jesli A. Lapu said, in his speech at the 2nd ICT in Basic Education Congress in 2006, that the Philippine Government spends P 6,354 per child for education, while Thailand and Malaysia spends P 47,700 and P 56,840, respectively. The United States and New Zealand spends P 123,200 and P 234,440 per child, respectively.

The Philippine Government spends P 6,354 per child for education, while Thailand and Malaysia spends P 47,700 and P 56,840, respectively. The United States and New Zealand spends P 123,200 and P 234,440 per child, respectively.

As per DepEd Order Nos. 6 and 9 Series of 2007, the government allocated P 2.76 billion for the DepEd's School Building Program. From this amount, P 1.76 billion is allotted for schools in each congressional district while the rest of the amount (P 1.0 billion) are for schools belonging to the red and black codes of the Basic Education Information System (BEIS). The red and black codes refer to areas experiencing acute classroom shortage which could refer to "1) where the number of students divided by the existing number of classrooms shall result in a classroom: student ration of 1:60 or more, 2) those where classrooms are temporary in nature or makeshift structures and 3) those without any classroom at all".

E. Process of Construction of School Buildings

1. Agency Roles in Building Schools

The Principal-led School Building Program (PL-SBP) is one of the innovations introduced by the Department of Education in strengthening school-based management through decentralized construction management, principal empowerment with active participation of the community and technical assistance from professional engineers. The World Bank supported the PL-SBP implemented in the year 1999 in 2007 covering school building projects for loan agreement under the National Program Support for Basic Education Sector Reform Agenda (NPSBE-BESRA). Moreover, Usec. Ramon C. Bacani endorsed it last February 21, 2007 as a guideline for the said project. (See Appendix B pages 7 to 10 for details).

The Principal-led School Building Program (PL-SBP) is one of the innovations introduced by the Department of Education in strengthening school-based management through decentralized construction management, principal empowerment with active participation of the community and technical assistance from professional engineers.

The PL-SBP implementation consists of three stages: Pre-construction; Construction and Post-Construction. The construction of school buildings is led by the PL-SBP (Principal-led School Building Program). (See Appendix B pages 11 to 26 for details).

PL-SBP decentralizes construction management through principal empowerment with the active participation of the community.

There are two types of plans for the design and specifications of public elementary and secondary school buildings. The Standard Building Plan and Special Building Plan.

- a.) **Standard Building Plan:** This is prepared by the architects and engineers of the DepEd and the DPWH and approved for general use in all schools throughout the country.
- b.) **Special Building Plan:** This is a plan designed specifically for a particular school for a special purpose or because of certain unique or peculiar features of the school site. A special building plan may originate from the field.

Special building plans are designed for schools that pose danger for occupants in cases of calamities and man-made hazards. The following are considered, as suggested by DepEd architects and engineers during an interview last Dec. 17, 2007 at the DepEd Facilities Division:

- **Soil stability-** A special foundation/footing is constructed when soil-bearing capacity is too low on a particular area. This does not conform to the uniform guideline that is being followed by DepEd and it might double or triple the expenses for the materials and construction itself. Anyhow, the stability of the building is of major concern in cases of liquefaction and earthquakes.
- **Wind forces-** A Hip-truss is constructed to counteract wind pressure that is usually caused by strong typhoons. In coastal areas, a roof deck is usually constructed so that no windpressure is absorbed.
- **Floods-** In flood prone areas, the school building is elevated and special foundations are designed for this purpose.

The school building program is coordinated by both DepEd and DPWH. The budget of the program is equally divided (50% for each) and implemented by each department. An engineer of the DepEd monitors the building construction process.

School building projects are undertaken by DPWH through contracting, local government units (LGUs) or by non-government organizations (NGOs) through a memorandum of agreement (MOA).

An agreement is made between DepEd and DPWH during the 2006 regional coordination meetings in the implementation of the regular school building program. The agreement states that DPWH shall only construct “complete” school buildings for new construction except for multi-storey constructions in which DPWH can program partial construction with limited budget.

The features of a “COMPLETE” school building are as follow:

- cemented floor;
- smooth finished (plastered) walls;
- painted walls, ceiling and roofing;
- full cathedral-type ceiling;
- complete set of windows;
- two entrances with doors;
- complete electrical wires and fixtures (for areas with electrical facility);
- roofing or weather protection;
- blackboard (optional); and
- comfort room (optional).

Building Plan Requirements

An annual budget is provided for the construction of new school buildings.

A priority list of school buildings to be constructed is prepared based on a number of criteria.

A school building plan originating from the field, local government units and private entities is submitted to the Physical Facilities and Schools Engineering Division of the Office of Planning Service (PFSED-OPS), DepEd for review and approval.

The following procedure shows how the plans are prepared.

1. The plan is drawn on tracing paper measuring 0.50 x 0.75 meters, according to an appropriate scale, and the following are shown:

- Perspective and Site Plan
- Floor Plan
- Front, rear, right, and left elevation
- Two Sections
- Foundation Plan
- Floor framing (if elevated)
- Roof framing plan
- Ceiling Plan and Electrical Layout
- Sanitary & Plumbing layout
- Details – These details include beams, columns, foundations, connections, bar hooks, slabs, roof connections, bar splices, etc.

2. The original copy of the plan on tracing paper together with two sets of whiteprint or blueprint shall be submitted.

3. The architectural and structural plans shall be signed by an architect and civil engineer respectively, duly stamped with their dry seals along with their registry numbers, professional tax receipts, and tax identification numbers (TIN).

4. The structural computations signed by a registered civil engineer and stamped with his/her dry seal shall be submitted together with the plan for checking. The registry number, professional tax number, and tax identification number of the civil engineer shall also be indicated.

5. The plan shall be signed also by the school administrator concerned and recommended by the schools division superintendent and the DepEd regional director (in the case of locally designed school building).

Acquisition of New School Buildings

New school buildings are usually acquired through allocation from the national government, by donations, and from voluntary contributions. Under the national government school building program, funds are provided in the national budget every year for the construction of new school buildings. The school buildings are allocated according to a prioritized list prepared based on the following criteria:

- To replace school buildings destroyed by natural calamities and fortuitous events;
- To replace old and dilapidated school buildings which have been condemned;
- To provide new school buildings to school with high shortages (Red and Black Schools) to accommodate the increase in school population or to decongest existing ones;
- To replace makeshift and temporary school buildings; and,
- To provide school buildings to accommodate classes currently housed in rented buildings, school stage, gymnasiums, etc.

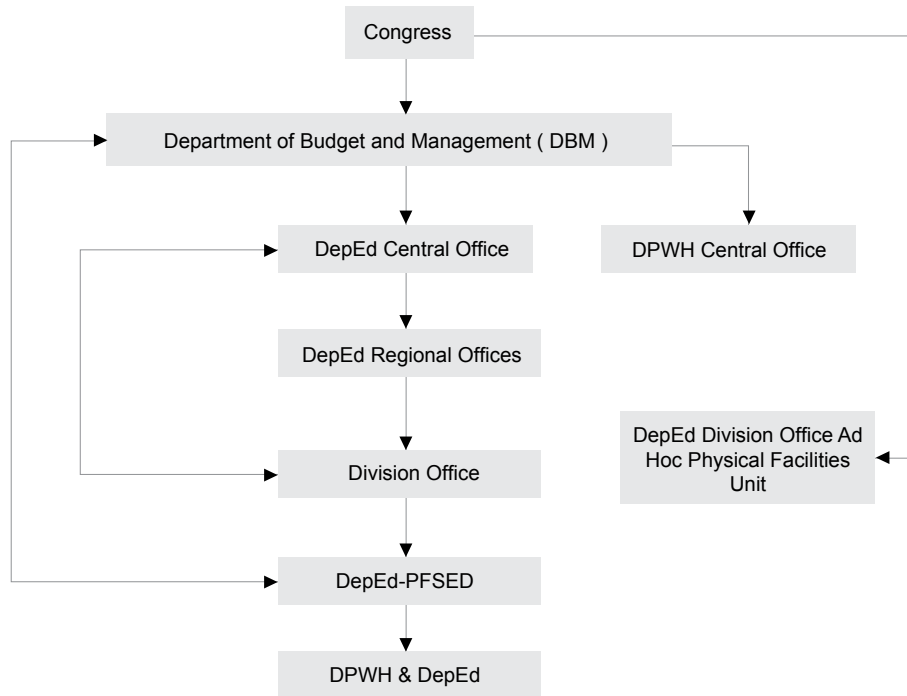
Red and black schools are prioritized for this process. The module has guidelines for the preparation of priority lists of school buildings to be funded under the CY 2007 regular school building program.

Allocation Procedure of New School Buildings

Figure 7 shows the allocation procedure of new school buildings. The congress in concurrence with the DBM (Department of Budget) sets the budgetary ceiling for school building projects. Moreover, the DBM advises DepEd and DPWH Central offices of the approval of the Annual School Building Program. The DepEd central office then issues a department order to all regional directors and schools division superintendents containing the guidelines in preparation for the priority lists of recipient schools based on the prepared allocation per legislative district. The DepEd regional office advises division offices to prepare priority lists using the department order.

The DepEd Division Office Ad Hoc Physical Facilities Unit usually headed by the Physical Facilities Coordinators (PFC) prepares priority list in coordination with the planning unit. Moreover, PFC seeks agreement of Congressional Representative concerned prepared list. The division office then submit lists to the DepEd Central Office and Physical Facilities & School Engineering Division (PFSED), copy furnished the Regional office. DepEd-PFSED then consolidates and submits division list to DBM through DPWH Central Office in the case of the Regular School building Program (RSBP). The DBM evaluates list and issues Special Allotment Order (SARO) and the corresponding Notice of Cash Allocation (NCA) of the approved projects. Finally, DPWH and DepEd implement project listings in the Annual School Building Program.

Figure 7/ Allocation Procedure of New Buildings

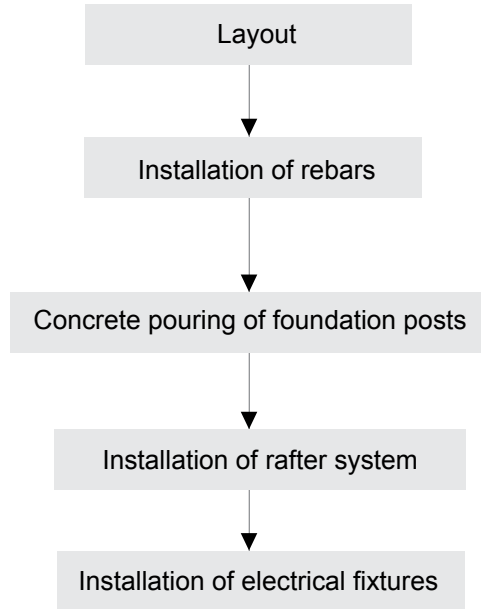


Process of School Building Construction

There are three stages that are being followed in the process of construction of school buildings as shown in Figure 8.

- **Pre-Construction Stage:** There are four procedures that are being followed here which are: Site Appraisal and Building plans; Orientation of School Heads and other Implementers; Forging of Commitments between CC (Construction Committee) and the LGU; and Procurement of Works. (See pages 11 to 18 of the Principal-LED School Building Program Operations Manual for complete details).
- **Construction Stage:** After identifying the contractor and the conduct of Pre-Construction Meeting, the construction phase begins. The following forms are used to effectively enforce the Contract during the construction proper and these are the following: Statement of Work Accomplishment -SWA; Certificate of Payment; Variation Order; Site Instructions; Punch list of Corrective Works/ Inspection Report; and Certificate of Completion. (See pages 18 to 20 of the Principal-LED School Building Program Operations Manual for complete details).

Figure 8/ Critical Stages of Construction



- Post-Construction Stage:** This phase begins after the Certificate of Completion has been issued to the Contractor who guarantees the project for 365 calendar days. The DepEd Engineers will now conduct inspection of the project to verify further defects that may appear during the period. The inspectorate team will now sign a Certificate of Post-Technical Inspection. Also, the Principal/ School Head and Division Physical Facilities Coordinator shall sign the Certificate of Acceptance.

City Development Authority Regarding Land Use and Master Plan

The Housing and Land Use Regulatory Board (HLURB) is the government's regulatory body for housing and land development.

As part of HLURB's continuing efforts to respond to national policy issuances and feedback from LGUs and other stakeholders, the Board approved the VOLUME I, A GUIDE TO COMPREHENSIVE LAND USE PLAN PREPARATION (CLUP) through the Resolution No. 789 on 16 February 2006. The new GUIDE is the result of the review of the 10-volume Guidelines on the Formulation and Revision of CLUPs and Planning Strategically, with the intention of integrating the same and to come up with a user-friendlier guidebook.

This Guide was developed for LGUs and was formulated with their genuine participation, through the various consultative meetings, workshops and surveys conducted nationwide. It is structured to provide the users with detailed and logical planning procedures aimed at ensuring a balanced and harmonious development of resources towards achieving an improved quality of life as defined in the vision. The guidebook is not prescriptive but is designed to allow flexibility, creativity and analytical thinking on the part of the user. It is a handy document with easy-to-follow instructions that put emphasis on achieving improvement of quality of life through community participation and strategic approach. Issues on population and development were also included through collaborative efforts with United Nations Population Fund (UNFPA) and the Commission on Population (POPCOM)-UNFPA. The Board takes great confidence and pride in disseminating the Guidebook given the concerted efforts of the HLURB regional and central offices, the support of various stakeholders and the “ownership” developed in the process of preparing it.

The Guidebook is Volume 1 of the set of guidelines in Comprehensive Land Use Plan Preparation comprising five (5) separate but complementary volumes, namely:

- **Volume 1A: Guide to Comprehensive Land Use Plan Preparation**

This provides the basic steps in the CLUP process, from getting started (Step 1) through monitoring and evaluation (Step 12). It prescribes a participatory approach throughout the process, to arrive at a plan owned and supported by the community thereby ensure its sustained implementation. (Printed copies available at P400 per copy)

- **Volume 2 A: Guide to Sectoral Studies in the CLUP Preparation**

This provides the basic guidelines for demographic and sectoral studies needed for the formulation of the CLUP. The guidelines include those for social, economic and infrastructure sectors in addition to the integrating frameworks, analytical tools, methods, standards and other tools necessary in undertaking the sectoral studies. (Editing on-going)

- **Volume 3A: Guide to Data Management in the CLUP Preparation**

This provides the basic elements for a GIS and other information systems needed in plan preparation process often referred to as “GIS Cookbook”. (2nd draft consultation in February 2007)

- **Volume 4: Planning Strategically:**

Guidelines for the Application of the Strategic Planning Process in the Preparation of the CLUP and to Important Urban Area Issues and Problems including guides for community consultation.

- **Volume 5: Model Zoning Ordinance**

This provides the basic elements of a Zoning Ordinance, which is an implementing tool of the CLUP, among others. (Copies available at P150 per copy)

2. Proposed Plans for Building Schools in the Next Five Years

The Department intends to perform its budget planning, preparation and execution for school buildings for year 2007 to 2010. This is contained in a module presented by the DepEd on part II of the “Plan for Building Schools in the Next Five Years.” (Appendix G)

The proposed plans for building schools is regulated by DepEd Order No. 53 with “SUBMISSION OF PRIORITY LISTS OF SCHOOL BUILDINGS TO BE FUNDED UNDER THE BALANCE OF CY 2007 REGULAR SCHOOL BUILDING PROGRAM.” Section 1 states that “*Pursuant to Republic Act 9401 known as the 2007 General Appropriations Act (GAA), the amount of Php 5.37 Billion (\$128 million dollars) has been appropriated for the FY 2007 DeptEd School Building Program. Of this amount, Php 1.76 Billion (\$42 million dollars) is allocated by legislative district in accordance with the allocation criteria under R.A. 7880.*”

School Building Allocation

School building allocation program has a budgetary allocation of ONE BILLION SEVEN HUNDRED SIXTY MILLION PESOS (Php 1.76 billion) or FORTY TWO MILLION DOLLARS (\$42 million dollars).

A budget strategy of 2007 for the basic education sector states that:

Section IV. **Forward Estimating, FYs 2008-2010**

4.7. School Repair and Maintenance. Every public elementary and secondary school shall be provided funds for the repair and maintenance of school buildings beginning FY 2007 henceforth. This fund shall be utilized mainly for the purpose, giving priority to those that need immediate attention of repair and rehabilitation or those that pose danger to the lives of the occupants. This shall be aligned with the “Brigada Eskwela Program” in partnership with the community. Additional guidelines shall be formulated under separate cover to maximize use of this fund.

The following are the budget allocation draft for year 2007 particularly on school building programs:

Locally funded projects include:

- a.) School Building for Typhoon Stricken Areas at two billion pesos (2,000,000,000) or forty eight million dollars (\$48 million).
- b.) Construction of Elementary and Secondary School Buildings in Areas Experiencing Acute Classroom Shortages at one million six hundred thirteen thousand pesos (1,613,000,000) or thirty eight million and four hundred thousand dollars (\$ 38,400,000)

Foreign-Assisted projects:

- a.) Medium-Rise School Building Project for NCR (National capital Region) funded by JICA (Japan International Cooperation Agency) at twenty one million six hundred two thousand pesos (21,602,000) or five hundred fourteen thousand dollars (\$514,000).
- b.) Project “Support to the Department of Education for and Improved Quality of Education Through the Training Programs and Provision/ Rehabilitation of Classrooms in the Areas of Aurora, Quezon, Iloilo City, Zamboanga City, Lanao Del Norte, Lanao Del Sur and North Cotabato” at one million nine hundred twenty thousand pesos (1,920,000) or forty five thousand and seven hundred dollars (\$45,700).

Standard Cost of Educational Structure

1. Academic Classroom

Table 10/ Cost of Academic Classrooms

Academic Classroom	Cost in Philippine Peso	Cost in U.S. dollars
7m x 7m (1-classroom) modified	P 400,000	\$ 9,524
7m x 7m (2-classroom) modified	P 735,000	\$ 17,500
7m x 9m (1-classroom) modified	P 460,000	\$ 10,952
7m x 9m (2-classroom) modified	P 865,000	\$ 20,595
7m x 9m (2-storey school building) standard	P 850,000 per classroom	\$ 20,238
7m x 9m (3-storey school building) standard	P 950,000 per classroom	\$ 22,619

The basic differences among the classroom designs are shown below:

Table 11/ Classroom Designs

ITEMS	CLASSROOM DESIGN		
	MODIFIED (7m x 7m)	MODIFIED (7m x 9m)	FFCCII (7m x 8m)
a. Walls	100 mm CHB	100 mm CHB	100 mm CHB
b. Doors	Flush door	flush door	flush door
c. Windows	Without jambs	without jambs	without jambs
d. Ceiling	with ceiling works	with ceiling works	with ceiling works
f. Electrical	75 mm thick without rebars	75 mm thick without rebars	75 mm thick without rebars
g. Painting	2 coats	2 coats	2 coats

2.) Toilet	Cost in Philippine Peso	Cost in U.S. dollars
2.0 x 2.2 m (1-seater) attached	69,000.00	\$ 1,643
1.6 x 2.0 m (1-seater) detached	P 76,000.00	\$ 1,810
3.5 x 2.3 x 2.0 m (septic vault) reinforced concrete	P 67,000.00	\$ 1,595
3.5 x 2.3 x 2.0 m (septic vault) CHB wall P 69,000.00	P 45,000.00	\$ 1,071
3.) 7m x 18m (multipurpose workshop bldg.)MPWB (home economics and industrial/ Practical Arts Building	P 1,200,000.00	\$ 28, 571
4.) 7m x 18m (Science Laboratory)	P 1,200,000.00	\$ 28, 571
5.) Repair of academic classrooms, science Laboratories and MPWB (costing would depend on scope of work) with (maximum amount per classroom)	P 200,000.00	\$ 4, 762
6.) Water supply/electrical connections/ fire prevention system	Costing will depend on actual needs and requirements	

Table 12/ Cost of Toilet Designs

3. Human Resource Capacity for Safe Construction Practices

All architects and civil engineers in the PFSED are duly licensed by the Professional Regulation Commission (PRC). This indicates that they are professionally capable of administering safe construction practices and implementing hazard resilient structures. Construction workers are duly trained too since most of them have past experiences in construction works.

The architects and civil engineers are sufficient in Auto-CAD presentation of school building plans, as evidenced in the floor plans that were structurally evaluated.

The architects and civil engineers of the DepEd are given local training for disaster management subjects. This local training seminar is termed as Disaster Quick Response Program (DORP) being conducted by Philippine Institute of Civil Engineers (PICE) and the Association of Structural Engineers of the Philippines (ASEP). The seminar usually last for two days and seminar participants are entitled to be DQRP members. Prominent structural engineers and disaster management experts give lectures on the latest scenario of disasters that happened in the country for the last five years and solutions are given based on their own perspective. Brochures are given to the participants after the training course.

F. Standards and Guidelines for Construction of School Buildings

The Department of Education has a “DepEd Educational Facilities Handbook” to provide up-to-date information and reference material for educational facilities. Part of the handbook provides guidelines for school buildings.

School buildings in the Philippines are classified according to structure, function, and design. These types of buildings conform to the National Building Code of the Philippines.

- a.) Structure:** a structure is classified as permanent, semi-permanent, and permanent. This is further described below:

Table 13/
Descriptions
of Building
Structures

Type	Description	Traditionally referred to as
I	Wood construction	“Semi-Permanent” – made of a combination of materials such as concrete and 80% lumber
II	Wood construction with protective fire-resistant materials one-hour fire-resistive throughout	Masonry and wood construction with exterior walls of incombustible (fire resistive) construction: one-hour fire-resistive through-out
III	Masonry and wood construction with exterior walls of incombustible (fire resistive) construction: one-hour fire-resistive through-out	
IV	Steel, iron, concrete or masonry construction with walls, ceilings and permanent partitions of incombustible (fire-resistive) construction except permanent non-bearing partitions which shall be one-hour fire resistive.	“Permanent” – made of strong and durable materials, 80% of which is concrete
V	Structural elements of steel, iron, concrete or masonry with walls, ceilings and permanent partitions of incombustible (fire-resistive) construction.	
	Basically made of bamboo, nipa, cogon, lumber and other light weight materials.	“Temporary”- structures as a means of easing up classroom shortage and temporary shelters during emergencies.

Note: The term “fire-resistive” refers to the rating of a material relative to the degree to which it can withstand fire. The “fire-resistive time rating of a material” means the length of time, that can withstand being burned according to generally recognized and accepted testing methods and in conformity with the standards, rules and regulations of the Department of Public Works and Highways (DPWH)

b.) Design

The design proper are classified according to the type of building with floor dimensions, floor area, and gross area per place at 45 pupils per room in square meters.

Descriptions of each type of building are as follows:

Types of Building	Floor Dimensions (m)	Floor Area (sq. m.)	Gross Area per place @ 45 pupils/students per room (sq.m.)
Gabaldon Type	7 x 9 (minimum)	63	1.40
Army Type	6 x 7	42	0.93
Magsaysay Type	6 x 7	42	0.93
Marcos Type	6 x 7	42	1.00
Bagong Lipunan I, II, III	6 x 8	48	1.06
RP-US Bayanihan	7.35 x 6	44.1	0.98
ESF Bldg.	6 x 8	48	1.06
Imelda Type	6 x 8	48	1.06
Pagcor Bldg.	6 x 8	48	1.06
GOJ-TRSBP Bldg.	8 x 6.25	52	1.24
GOJ-EFIP Bldg.	8 x 7	56	1.11
SEDP Bldg. (Carino Type)	8 x 7	56	
Multi-Purpose Workshop Bldg.	7 x 18	126	3.15
DECS 1 room Bldg.	7 x 8	56	1.24
FVR 2000 (Fabricated Vigorous Room 2000)	7 x 8	56	1.24
SB Readily Assembled Multi-Optima Shelter (Ramos)	7 x 8	56	1.24
Federation of Filipino Chinese Chamber of Commerce and Industry, Inc. (FFCCCCII)	7 x 7	49	1.08
Little Red School House	7 x 8	56	1.24
DepEd School Bldg. (Standard/Modified)	7 x 9 7 x 7	63	1.40 1.08
DepEd School Bldg. (All Wood)	7 x 9 7 x 7	49	1.40 1.08
DepEd Multi-storey School Bldg.	7 x 9	63	
Spanish Grant School Building Package	7 x 9	63	1.24
TEEP SB	7 x 8	56	1.58
SEDIP Bldg.	7 x 9	63	1.58
Learning and Public Use School building (LAPUS)	7 x 9	63	1.58

Table 14/ Types of Buildings

c.) Function

Function of school buildings is classified as Instructional spaces, Administrative and Service spaces, and Non-programmed spaces.

c.1) Instructional spaces: These spaces are designed to directly accommodate the educational program. Instructional spaces for elementary schools are classrooms and work education shops. Work education shops can also be classified as multi-purpose buildings for Home Economics and Industrial Art Classes. For secondary school buildings that offers general curriculum, instructional spaces are classrooms, computer rooms, science laboratories, and Technology and Livelihood Education (TLE) shops. Spaces such as libraries, learning centers, gymnasiums, and similar spaces are classified as instructional spaces when used in line with the set of courses.

c.2) Administrative and Service spaces: The administrative and service spaces are those which serve to facilitate administrative and administration. These are classified as administrative offices, canteens, lunch counters, medical-dental clinics, guidance room, dormitories, etc.

c.3) Non-Programmed spaces: Non-programmed spaces are those which are not directly related to the implementation of the educational program and administrative functions or services such as lobbies, corridors, stair, etc.

1. Design of School Buildings

A budgetary limitation is taken into account in terms of renovation or the execution of new building plans. General guidelines are considered in the design of school buildings for this purpose:

- a. A school building shall be designed in accordance with its functions, needs of its user, and nature of the environment.
- b. In view of scarce resources, a school building shall be conceived for economy in construction, utilization and maintenance.
- c. The design approach shall be straight forward, relying upon simplicity of concept in the context of innovation to reflect order and dignity, ensure flexibility in anticipation of educational change, and achieve structural stability.
- d. Human dimensions, static and dynamic, specifically with reference to Filipino children and youth, shall be the basis of establishing scale.
- e. Aesthetic elements shall be integral to the overall design and even given contemporary treatment, shall derive from historical, traditional or native themes.

- f. The use of indigenous or locally produced materials shall be maximized in conjunction with the application of appropriate construction technology.
- g. Provision for mobility of handicapped/disabled persons shall be given due consideration in the design and construction of school buildings and other facilities in accordance with Batas Pambansa Bilang 344 (Accessibility Law).

The guidelines mentioned are in accordance with architectural and engineering principles and with the provisions of the National Building Code of the Philippines. Moreover, the designs also consider ergonomics, anthropometrics, thermal comfort, illumination, acoustics, colors, etc.

The design of school buildings considers placement and layout for proper orientation for air currents, natural light, and heat from the sun, and other concerns. Proper orientation minimizes direct sunlight inside the classroom and to maximize the entrance of breeze or air currents inside.

The layout of school buildings refers to the location and arrangement of school buildings to achieve maximum functional efficiency and aesthetic effect. This also enhances the mobility of students and employees in case of emergency. The School Site Development Plan is considered in the laying-out of school buildings. The distances between school buildings shall be such that:

- a. Ventilation is not obstructed;
- b. Natural illumination is not impeded; and
- c. Sounds in one building do not carry into the next building.
- d. The suggested minimum distances between buildings are:
 - Eight (8) meters between one-storey buildings positioned side by side;
 - Ten (10) meters between two-storey academic buildings positioned side by side;
 - Ten (10) meters between non-academic buildings;
 - For a main building facing the front gate, at least (10) meters distance is suggested.
 - Greater distance than the minimum between school buildings is desirable. Wider distance between buildings allows for free space to be utilized for many school-related activities.
- e. The recommended minimum setback of a school from the street is five (5) meters to minimize intrusive sounds.

2. Design Requirements

The following design requirement conforms with the National Building Code of the Philippines and is considered in the design of school buildings.

- a. Windows:** Window openings shall be equal to or at least ten (10) percent of the floor area of the room, provided that such opening shall be not less than one square meter, except those in toilet baths which shall not be less than one-twentieth of the floor area of such rooms, or not less than 240 square millimeters.

- b. Ceiling Height:** The ceiling height of rooms with natural ventilation shall not be less than 2.70 meters measured from the floor to the ceiling; rooms provided with artificial ventilation shall have ceiling heights not less than 2.40 meters.
- c. Floor Construction:** All floors shall be framed and secured into the framework and supporting walls so as to form an integral part of the whole building; the type of floor construction used shall provide means to keep the beam and girders from lateral buckling.
- d. Roof Construction:** All roofs shall be so framed and tied into the framework and supporting walls so as to form an integral part of the whole building; dark stops, roof drains, flushing, etc., shall be provided.
- e. Exit Doors:** At least two (2) exit doors are required where the number of room occupants is over 50 in the case of classrooms, conference rooms, exhibit rooms, gymnasias, school shops, vocational institutions, laboratories, and auditorium; a door shall not be less than 2.10 meters high and 900 millimeters wide.
- f. Door Shutters:** Door shutters shall be swing out and be capable of opening at least 90 degrees so that the clear width of the exit way is not less than 700 millimeters. No door shutter shall exceed 1.20 meters in width.
- g. Corridors:** Every corridor shall not be less than 1.10 meters wide and shall be unobstructed.
- h. Stairways:** Stairways serving an occupant load of 50 or less must be 1.10 meters wide; those serving more than 50 shall not be less than 1.50 meters. The rise of every step shall not exceed 200 millimeters and the tread shall not be less than 250 millimeters. Handrails shall be provided on each side of every stairway having more than four steps.

3. Building Risk Reduction Requirements

In designing and constructing school buildings, safety and risk reduction measures are always considered.

- a. Main Entrance/Gate:** Usually located on a secondary road and designed swing-in to the property of the school. This entrance shall provide enough clearance for fire trucks and medical vehicles. A separate service entrance for the pupils/students is provided.
- b. Electrical Fixtures:**
- Require protective covering for all wirings and fixtures.
 - Install a fire alarm system that is affordable.
 - Provide environment friendly fire extinguishers.
 - Report any defective electrical wiring and fixture to experts.
 - Hang curtains in the classrooms away from wall-mounted fans.

c. Stairs/Handrails:

- Distance between railings shall not be more than 100 mm (4 inches) so that pupils/students cannot squeeze through
- For abrupt change in floor elevation, provide ramp to avoid freak accidents.
- To minimize the chance of slipping, avoid smooth or polished steps and provide non-slip nosing.
- Always provide a landing with railings between a doorway and a stairway.

d. Windows: Windows shall provide security grills with emergency exit.

e. Doors/Exits: Classrooms shall always be provided with two swing-out doors at the opposite sides of the classroom.

f. Walls: Walls shall be smooth finished to prevent injury to highly active, playful and mobile primary grade pupils. Suggestion: provide circular columns at play area

g. Condemned/Unfinished Construction:

Condemned/Unfinished building structures, on-going constructions, must be cordoned with an “Off Limits” sign.

h. Sanitary Facilities:

- Drainage canal shall be wide enough, covered, and provided with manhole for safety and sanitation purposes.
- Location of the septic tank must be at least two (2) meters away from the building it serves. It shall be properly vented for proper release of gases. It must be at least 25 meters away from any source of water supply to avoid contamination.

4. Identification of Sites

1. In preparing the final list of school building projects, the following should be considered for prioritization:

a. New Construction

Schools belonging to the following zones described in Table 11. If no school belongs to the aforementioned color codes, schools that fall under the blue category or with classroom to pupil/student ratio of 1:45 and below will be considered provided a justification of the prioritization will be submitted.

COLOR CODE	CLASSROOM-PUPIL/STUDENT RATIO	LEVEL OF PRIORITY
Red and Black	56 and above	1st Priority
Gold	51-55	2nd Priority
Yellow	46-50	3rd Priority

Table 15/ Priorities for Building Construction

b. Replacement/Reconstruction and Rehabilitation

- Replacement of school buildings razed by fire, old and dilapidated structures that have been condemned as finally approved by the Regional Director.
- Rehabilitation and reconstruction of school buildings damaged by typhoons, covered by mudslides, flashfloods.

c. Repair and Completion

- Repair of structures that are already dangerous to the lives of the school populace.
- Completion of unfinished buildings utilized for academic instruction.

d. Other Priorities

- Construction/Repair of toilet, multi-purpose workshop (to be used for conducting home economics and industrial/practical arts classes) and science laboratories.
- Provision of potable water supply system, repair of water facilities.
- Installation of electrical wiring and general rewiring.

5. Standard Classroom Design

a. 7m x 7m classroom design – this is patterned after that of the Federation of Filipino Chinese Chamber of Commerce Industries, Inc. (FFCCCII) design to be adopted for schools located in provinces where the classroom-pupil/student ratio is not more than 1:45.

b. 7m x 9m classroom design – this will be used in schools located in semi-urban areas or in urbanizing portions of municipalities such as the poblacion where the classroom to pupil/ student ratio is more than 1:45; ALL PUBLIC HIGH SCHOOLS WILL ADOPT the 7m x 9m dimension regardless its class size.

c. 7m x 9m medium rise school building design – this will be adopted for schools in the National Capital Region (NCR) and in urban or high growth areas or where the school is with limited site. At least a 2-storey structure should be planned for erection.

G. Review of typical plans for school buildings followed by DepEd

Typical plans for school buildings are presented in the DepEd Educational Facilities Handbook on pages 207 to 227. The typical floor plans that are typical for all parts of the country are the following: (See Appendix F for details).

- One storey- one classroom
- One storey- two classroom
- One storey- three classroom
- One storey- five classroom
- Two storey- two classroom
- Two storey- four classroom

- Two storey- six classroom
- Two storey- eight classroom
- Three storey- six classroom with Multipurpose
- Three storey- nine classroom
- Three storey- fifteen classroom
- One storey- two classroom For Learning and Public Use School building (LAPUS)
(For Calamity stricken areas)
- One storey- one wooden classroom (7 x 7 m)
- One storey- two wooden classroom (7 x 7 m)
- One storey- one wooden classroom (7 x 9 m)
- One storey- two wooden classroom (7 x 9 m)
- One-storey Home Economics (One Classroom)
- One-storey Home Economics (Two Classroom)
- One-storey Industrial Arts
- One-storey Science Laboratory
- One-storey Computer Laboratory

Based on the interview conducted with the engineers and architects, they stated that the buildings especially the concrete structures were over-designed to facilitate and function as an emergency shelter after any disaster. The structural plans and results show that beams, columns, foundations etc. are over designed to withstand calamities such as typhoons, earthquakes, etc. The LAPUS building as mentioned above can be utilized as an evacuation center during calamities and emergencies. It can accommodate at least six (6) families per room.

However, an engineer opposed to the idea of school buildings being used as an emergency shelter since classes are definitely suspended. Moreover, the number of evacuees could cause damages to some of the components of the structure due to overloading. She suggested the construction of a covered multi-purpose area, e.g. basketball court for multi-purpose activities of schools and that could serve as an evacuation center in case of disasters.

H. Pipeline and Continuing Projects for School Construction and Other Programs for DepEd.

1. School Construction Projects by the Dep ED

Under the regular building construction program of the DepEd., the continuing projects are based on the national budget for school building programs in the next four years including 2007.

It is expected that the class sizes would decrease per room in succeeding years and as follows:

Table 16/ Target Classroom Size

School year (FY)	No. of students per classroom
2007	45
2008	40
2009	35
2010	30

The decreasing number of students per room indicates that more school building programs will be implemented in the succeeding years since there is an increase in student population every year. A decrease in the number of students per classroom will make the school structure safer against earthquake since there is less “live load” that contributes to its structural strength that carries this load. Moreover, mobility of students is faster in cases of fire, earthquakes, and other hazards.

In integrating DRR concepts in the construction of buildings, Engr. Oliver R. Hernandez came out with a report that was presented at the Asia-Pacific Regional Workshop School Education and Disaster Risk Reduction held in Bangkok Thailand last October 8-10 of 2007. The presentation entitled “Safer School Construction in the Philippines” highlighted the basic and special features of the LAPUS building as an earthquake, typhoon, and flood resisting structure.

2. The Millennium Schools Design Competition

A global school design competition for developing countries started in the first quarter of 2008. Otherwise known as the Millennium School Design Competition, it aims to solicit the best architecture for humanity designs from all over the world to find solutions to the problems of school buildings against natural disasters like typhoons, flashfloods, earthquakes, etc. The design criteria are: innovative construction technology, cost effective, typhoon resistant, earthquake resistant, sustainable site, building, flexibility of use, and adaptability to other sites. The competition site is in Sagnay, Camarines Sur since it is affected by cyclical natural disasters typical to the region. The National Disaster Coordinating Council, My Shelter Foundation, the United Architects of the Philippines, and the Private Sector Disaster Management Network are organizing the competition to make school buildings safe, conducive to learning and come up with technological solutions to improve quality and standards of how these structures are built.

3. New Technology to Fast-track Classroom Construction

To address the shortage of an estimated 44,000 classrooms, the DPWH has proposed the adoption of a new construction technology called the *Dura-Quick* which utilizes iso-panel pre-fabricated materials.

To expedite government’s effort to address classroom shortage of 44,000 throughout the country, the DPWH has proposed the adoption of a new construction technology utilizing the so-called iso-panel pre-fabricated materials. Accordingly, the *Dura-Quick* building design shortens the construction period of a typical two-classroom school building to only 12 days at a much lower cost than conventional materials.

Per DPWH-Bureau of Design study, the adoption of the iso-panel modular material or the *Dura-Quick* system, as compared to the use of the typical hollow blocks and concrete in the areas of insulation, will result to more benefits for the government in terms of cost, construction period and maintenance.

Using a metal cladding with expanded polystyrene insulation, the Dura-Quick system is widely used in various buildings in Korea and is ideal for school buildings because of its quick installation, comfortable ambient temperature, low maintenance, and durable features, made available at very affordable prices.

The possible sources for the project are shown in the succeeding table:

Facts	Details	Notations
Total No. of Congressional Representatives	231 members	This number includes the regular members and party-list members
Congressional Development Fund (CDF) – Hard Infrastructure	Fifty Million Pesos (Php50,000,000.00)	The amount is equally allocated for every congressional representative although special allocation funds may be added as per specific request made by a Congressional representative to Malacañang. In this case, additional funds may be released from the President's Social Fund depending on the proximity of the congressional member from the President. CDF are generally used for hard infrastructure projects which include, among others: school building projects, road improvements, construction, rehabilitation, spring development and irrigation programs, construction of libraries, day-care centers and other projects as defined and identified in the "menu" provided for by the Department of Budget and Management (DBM).
Priority Development Assistance Fund (PDAF) – Soft Programs	Twenty Million Pesos (Php20,000,000.00)	The amount is equally allocated for every congressional representative. But just like in the allocation of additional special funds, an additional fund may be released upon the direct approval of Malacañang. The use of PDAF is generally allowed for projects and programs involving enhancement of health services, education, cooperative, and other projects as defined and identified in the "menu" provided for by the Department of Budget and Management (DBM).
Proposed Source of Funds for the implementation of the School Building Program	PAGCOR	PAGCOR already agreed, in principle, in the allocation of #-Billion pesos per year for the next 5 years or a total of 15- Billion fund for the entire duration of the 5-year School Building Program.
In the utilization of their respective CDF and PDAF allocations, Congressional Representatives often have other hard infrastructure projects like construction of libraries, day-care centers and other similar projects.		For this reason, the exhibit may also include options for Congressional Representatives in case they would opt for the use of the Dura-Quick System technology in the construction of libraries, day-care centers and other similar projects.

Table 17/ Possible Sources of Funds for the Dura-Quick Project

4. Education Related Projects by the Asian Development Bank

The Asian Development Bank has five projects for the Department of Education implemented from 2001 to 2007. The programs pertain to the improvement system for technical education and skills development, loan program for private technical and skill development institutions, strengthening of the management capacity of TESDA and local institutions, the Second Technical and vocational Education and the Secondary Education Development and Improvement program.

The project preparation of the last one has been closely coordinated with the Third Elementary Education Project, financed by the World Bank and Japan Bank for International Cooperation. The two Projects target the same provinces and share complementary strategies to jointly support the improvement of access, and learning outcomes at schools, decentralization of basic education management and implementation of privatized textbook publishing and procurement. The Project comprises three main objectives: (i) to improve quality and relevance of secondary education in project provinces; (ii) to increase the rate of participation in and completion of secondary education in underserved areas within the Project provinces; and (iii) to facilitate decentralization process to establish conditions for school-based. The Project primarily covers 14 poverty-affected rural provinces. Limited support (textbook provisions and initial preparation for decentralization) will be provided to additional 12 poverty-affected rural provinces.

Table 18/ Education Projects by the Asian Development Bank

Project Name	Project Objective	Funding Agency	Loan/Funds Amount	Type of Fund	Project Duration	Execution Agency
1. Technical Education and Skills Development	The main objective of the Project is to improve the quality and relevance of the TESD system and to enable TESDA to perform its function more effectively as an oversight agency to better respond to market demand for highly skilled workforce.	Asian Development Bank	US\$25.0 million	Ordinary Capital Resources	Jan'01 - Dec'07	Development Bank of the Philippines
2. Fund for Technical Education and Skills Development	The FTESD will be available to private TESD institutions nationwide. Based on a preliminary survey among the private institutions a total of 158 private schools have indicated interest in borrowing from the FTESD with loan amount ranging from \$25,000 to \$1.25 million. The majority wants to borrow from \$75,000 to \$250,000. It is expected that approximately 120 private schools will benefit from the FTESD.	Asian Development Bank	US\$19.9 million	Ordinary Capital Resources	Jan'01 - Dec'07	Development Bank of the Philippines

Project Name	Project Objective	Funding Agency	Loan/Funds Amount	Type of Fund	Project Duration	Execution Agency
3. Strengthening Management Capacity and Improving Quality of TESD	The TA will assist the Government in strengthening management capacity of TESDA and a network of regional and provincial institutions including LGUs to enable them to provide effective leadership and support to both public and private institutions. The TA will contribute directly to the improvement of the quality of TESD programs, which in turn will produce qualified skilled workforce for higher productivity thus enhancing the country's competitiveness in the global market.	Asian Development Bank	US\$775,000	Japan Special Fund	Aug'00 -	Technical Education and Skills Development Authority
4. Second Technical and Vocational Education	The proposed TA would aim to (i) review key issues related to developing the strategic role of the TESDA, the provision of formal TVE, including the development of new financial mechanisms; (ii) review employment trends and the current and projected need for skilled middle-level man-power in the light of existing data, supplemented as necessary by new studies on emerging power needs; (iii) review formal TVE programs provided by both public and private institutions, to identify constraints on the provision of quality programs and priority areas for strengthening and improvement; and (iv) prepare a project proposal for a loan to strengthen the policy framework for the public and private provision of TVE; further develop financial mechanisms to support pub. & private TVE programs & provide support for priority TVE programs & institutions.	Asian Development Bank	US\$480,000	Japan Special Fund	Aug'96	DoE

Table 18/ Continued...

Table 18/ Continued...

Project Name	Project Objective	Funding Agency	Loan/Funds Amount	Type of Fund	Project Duration	Execution Agency
5. Secondary Education Development and Improvement	The Project aims to reduce inequity and geographic disparity in access to, quality and efficiency of public secondary education (grades 7 to 10) by targeting poverty affected provinces with low rates of enrollment and completion and low student achievement levels. The Project will also help the process of management decentralization that encourages school-based management (school autonomy) with local participation in school planning and management.	Asian Development Bank	US\$53 million	Loan	Dec'98 - Dec'06	DoE

5. Foreign Assisted Projects for the Department of Education

The National Economic Development Authority list of on-going foreign assisted project for the basic education in the country is shown in Table 16. It is composed of grants and loans.

Table 19/ Foreign-Assisted Projects in Basic Education (As Of June 2007)

Project Title Source of Funds Project Cost Implementation	OBJECTIVES	DESCRIPTION GRANTS
GRANTS		
1. Basic Education Assistance for Mindanao (BEAM) Stage 2 AusAID 734.38M GOP 69.11M	To improve the teaching and learning of basic education and to implement strategies that will provide opportunities for all children to access quality education and develop key life skills	Improve the quality and access to basic education in Mindanao, thereby contributing to the attainment of peace and development in the Southern Philippines

Table 19/ Continued...

Project Title Source of Funds Project Cost Implementation	OBJECTIVES	DESCRIPTION GRANTS
<p>2.Strengthening the Implementation of Education in the Visayas (STRIVE) Stage 2</p> <p>AusAID 794.66M 2007 -2009</p>	<p>To contribute to the improvement of , and access to, basic education in the Visayas.</p>	<p>Strengthen selected education management and learning support systems, in part by applying and modifying available resources for improved access to quality basic education appropriate to geographic, isolated and disadvantaged populations. The project has the following components: (i) School-Based Management Support System; (ii) Human Resource Development Systems for Teachers; (iii) Learning Materials Development System,; and (iv) Project Management</p>
<p>3. Support to the DepEd for an Improved Quality of Education through the Training Programs and Provision/ Rehabilitation of Classrooms, Phase 1</p> <p>AECI 77.33M GOP: 12.13 Start Date: January 2006 Completion Date: Dec. 2007 (Revised)</p>	<p>To improve the quality of education in the areas hardly hit by typhoons, affected by the armed conflict and pilot areas of the Spain-Philippines Cooperation</p>	<p>Construction/Rehabilitation of academic classrooms, provision of basic classroom furniture and capacity building in the areas of school facilities maintenance and teaching English language/reading</p>
<p>4.Sixth Country Program for Children (CPC VI)</p> <p>UNICEF 251.44M Start Date: January 2005</p> <p>Completion Date: Dec. 2007 (Revised)</p>	<p>To increase access to and completion of quality Early Childhood Care and Basic Education with focus on disadvantaged groups and communities to enhance support system for ECCE and Basic Education, and to promote peace in schools and communities</p>	<p>Raise ECD for children 3-5 y/o; reverse the drop in enrolment rates; sustain and enhance the gains made in achievement; and sustain the high rates of girls' enrolment and retention. It will popularize CFSS and student tracking system in focus areas and to the secondary level. Intensive training for teachers and school heads include orientation for parent-teachers associations and school boards. Within the ECCD law framework, the programme supports the expansion of day-care centers. Monitoring and evaluation system will be strengthened to improve education and parent-community participation . It will also enrich the ECCD curriculum and assist in strengthening the Madrasah education and alternative delivery systems. Activities will address the needs of children affected by emergencies and help to promote peace education.</p>

Table 19/ Continued...

Project Title Source of Funds Project Cost Implementation	OBJECTIVES	DESCRIPTION GRANTS
<p>5. Belgian Integrated Agrarian Reform Support Program (BIARSP) Phase III</p> <p>BADC 40.80M Sept.2003- August 2007</p>	<p>To provide the quality of basic education in selected agrarian reform communities to help alleviate rural poverty and uplift the well-being of rural low income communities</p>	
<p>6. Education Quality and Access for Learning and Livelihood Skills (EQuaLLs)</p> <p>USAID 30.1M 2004-2011</p>	<p>To address high illiteracy and drop-out rates, improve learning of math, science and the English language, particularly at the elementary level and address special problems of out-of-work youth in the conflict-affected areas.</p>	<p>EQuaLLS combines the efforts of USAID partners from government, civil society, and the corporate sector. In coordination with DepEd and DepEd- ARMM, EQuaLLS has set the following goals:</p> <ul style="list-style-type: none"> ■ Building foundational skills (reading and numeracy) of young students, especially in Grades 1-3 ■ Strengthening and expanding the non formal Alternative Learning System ■ Improving pre-service and in-service teacher training ■ Providing livelihood training and links to employment opportunities for out-of-school youth ■ Develop new models of distance education through TV and radio; ■ Acquiring and distributing supplementary educational resources, and ■ Encouraging police reform and building capacity to implement it.
<p>7. Growth with Equity in Mindanao (GEM)-2</p> <p>USAID US\$120M</p>	<p>To increase access to quality education and livelihood skills in selected areas, particularly those most affected by conflict and poverty</p>	<p>In partnership with the private sector (i.e. Makati Business Club and the Ayala Foundation) and other donors (Japan and Australia), USAID has introduced computer and internet education in 175 schools in the ARMM and other conflict affected areas of Mindanao and plans to reach an additional 200 to 300 high schools over the next two years. About 180,000 students and teachers are benefiting so far.</p> <p>Under this program, the recent graduates of colleges and universities in the ARMM interns spend four months working in the Philippines House of Representatives to develop greater understanding of how legislation is developed and enacted.</p>

Table 19/ Continued...

<p>8. Government of Spain (GOS) – Government of Philippines (GOP) Elementary Education Project for Bicol and CARAGA Spain – Technical Assistance Facility 189Mph 2007-2010</p>	<p>To assist DepEd in attaining the Education For All goal and targets for the elementary level particularly in the recipient areas.</p>	<p>Support the Every Child A Reader Program (ECARP) at the national level, strengthen the implementation of school base management (SBM); and capacity building for regions and divisions of the DepEd to better support and monitor SBM.</p>
LOANS		
<p>1. National Program Support for Basic Education (NPSBE) World Bank US\$200 M 2006-2011</p>	<p>To improve quality and equity in learning outcomes for all Filipinos in basic education</p>	<p>Assist the implementation of DepEd's reform by financing priority items critical to implementing BESRA in order to achieve sector wide results and impact. The project emphasizes improved governance through effective SBM, enhanced teaching, quality assurance, and better resource mobilization, including greater involvement of local government and more systemic support from private sector partnerships.</p>
<p>2. Second Social Expenditure Management Project (SEMP 2) World Bank 3,865.02M GOP: 795.13 2002-2007</p>	<p>To provide improvement in the implementation of key programs in education (DepEd) for activities covering the provision of key inputs for improving the quality of education</p>	<p>Achieve significant improvements in institutional reforms while meeting the need for basic social services.</p>
<p>3. Secondary Education Development and Improvement Project (SEDIP) ADB and JBIC 6,805.74M GOP: 2,287.56 Start Date: Jan.1, 2000 Completion Date: ADB: Sept 2007 JBIC: Sept 2008</p>	<p>To improve the quality and relevance of secondary education in the target provinces, increase the rates of participation and completion of secondary education in the underserved areas; and support decentralization process to establish the conditions for school-based management (SBM)</p>	<p>Improve equitable access to quality public secondary education poverty affected areas.</p>
<p>4. Mindanao Sustainable Settlement Area Development (MINSSAD) Project JBIC 3,102.50M GOP: 775.71 Sept. 2001- June 2007</p>	<p>To alleviate poverty and improve the quality of life of the beneficiaries in the settlement areas and ensure viable and sustainable development</p>	<p>Develop settlement areas using an interagency approach to Agrarian Reform Communities (ARCs) development by providing appropriate social structures and services to ensure minimum basic needs and this includes classrooms/ armchairs, agricultural facilities, equipment and extension services.</p>
<p>5. Cyber Education Project China- Mixed Credit Facility 18.752M</p>	<p>To accelerate the provision of equal access to and quality of basic education for all learners.</p>	<p>Allow target schools nationwide to access live and interactive broadcast instruction using satellite-based technology as well as other ICT-based instructional packages via the internet. Equipments such as Very Small aperture Terminals (VSATs), computers and digital accessories will be developed under the project. The facilities will also be used to implement a distance-training program for teachers and other schools stakeholders.</p>

I. Recommendations for Introduction of Disaster Risk Concerns in the Construction of Schools

From the review of the DepEd Educational Facilities Handbook, the following recommendations are put forward to introduce disaster risk concerns in the construction of the schools. The recommendations are given following the outline of the Handbook.

1. Disaster/ Risk Reduction Measures (Page 21 of the DepEd Educational Facilities Handbook)

- **Fire Prevention and Safety Measures**

Recommendations: Water tank reserve in cases of fire.

- **Road Safety**

Recommendations: a.) Indicate speed limit of vehicles in school zones.

b.) Use traffic calming facilities such as humps to reduce speeds before pedestrian facilities.

- **Proper Use of Chemicals & Gases in the Science Laboratories**

Recommendations: A safety measure board shall be posted as a reminder for students.

2. School Sites (page 27 of the DepEd Educational Facilities Handbook)

- **Location/ Environment**

Recommendation: Provision for school location wherein it must not be located adjacent to existing schools or universities to avoid traffic congestion. Thus, avoiding engine noise and air pollution from vehicle emissions. This must comply with the standards of zoning requirements from the planning office of the city government.

- **Accessibility**

Recommendation: Building of satellite schools if possible to de-congest schools in the urban area. This minimizes travel time of students and maximizing safety of students in terms of street crimes and vehicular accidents.

Detailed engineering shall proceed only on the basis of the feasibility or preliminary engineering study made which establishes the technical viability of the project and conformity to land use and zoning guidelines prescribed by existing laws.

Incorporation of hazard resilient features

Detailed engineering shall proceed only on the basis of the feasibility or preliminary engineering study made which establishes the technical viability of the project and conformity to land use and zoning guidelines prescribed by existing laws. The findings contained in the feasibility study, if undertaken for the project, shall be examined. If, in the course of the exercise, as proposed, specific recommendations for such changes shall be supported by detailed justifications, including their effects on the cost, and if (necessary) the economic justification.

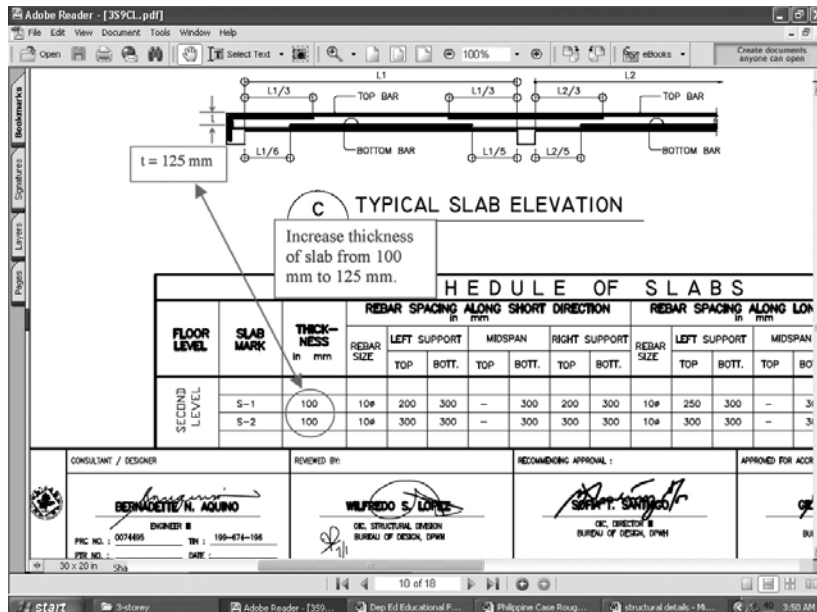
A schedule of detailed engineering activities shall include the following:

- a. Survey
- b. Site Investigation
- c. Foundation Investigation
- d. Soils and Materials Investigation
- e. Preparation of Design
- f. Preparation of Specifications
- g. Preparation of quantity and Cost Estimates
- h. Preparation of Program Work
- i. Preparation of Proposed Construction Schedule (and estimated Cash Flow for projects with schedule over Six (6) Months)
- j. Preparation of Site or Right-of-Way Plans including Schedule of Acquisition
- k. Preparation of Utility Relocation Plan
- l. Preparation and Submission of Design Report
- m. Environmental impact Statement for Major Project
- n. Preparation of Bid/ Tender Documents

3. Structural Design

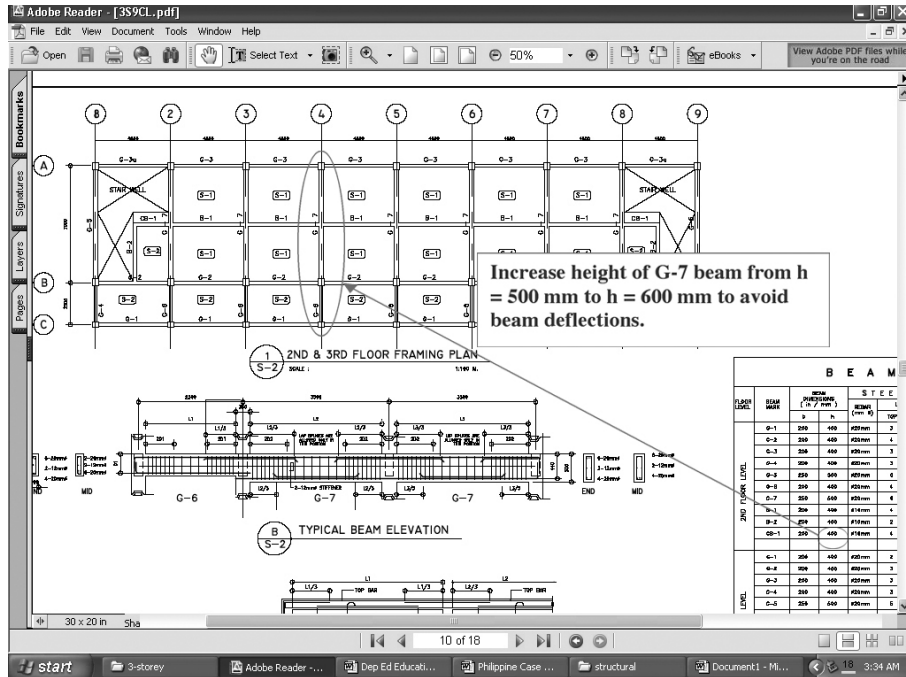
Structural designs evaluated from the plans acquired are disaster hazard resistant aside from the following observations:

Figure 9/ Typical Slab Elevation



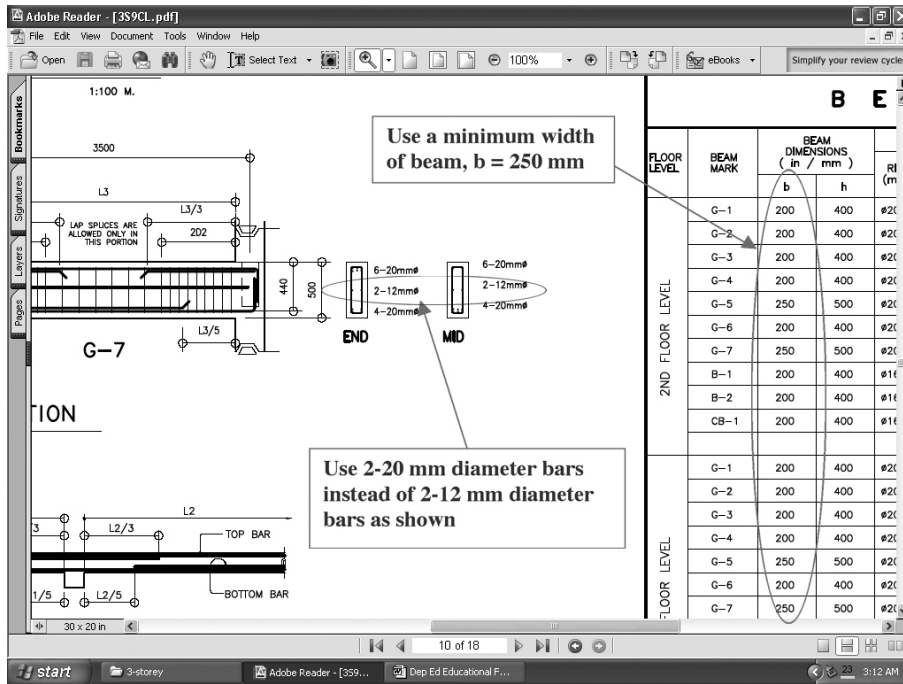
- Increase slab thickness from 100 mm to 125 mm - This is to avoid deflection of slab and can withstand assembly loads typical for schools. Moreover, provide corner reinforcements slanted at length of slab divided by five or simply at “L/5” to avoid corner cracks.

Figure 10/ Typical Beam Elevation



- Increase 7m span beam’s depth particularly “G-7” from 500 mm to 600 mm – This is to avoid beam deflections since 7m is a long span.

Figure 11/ Size of Beams and Bars



- Increase size of existing diameter 12 mm torsion bars for beams - Use diameter 20 mm torsion bars for 20 mm rebars and 16 mm torsion bars for 16 mm rebars.
- Sloping wooden roofs - The main load bearing structural members are timber trusses, purlins and bracings. The cladding may be of G.I or A.C. sheeting. Sloping roofs could be made with two slopes and gable ends as shown in Fig. 13-A. A hipped type with four slopes as shown in Fig. 13-B against earthquakes or windstorms, the four slope hipped roofs are stronger, hence safer.

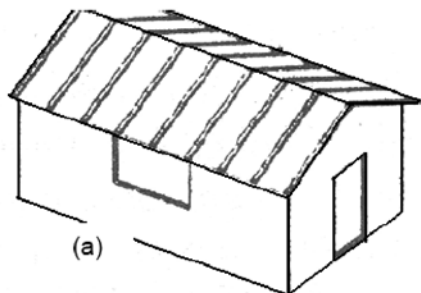


Figure 12-A/ Two slopes with gable ends

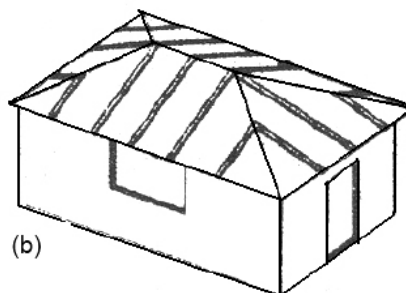


Figure 12-B/ Hipped Type with four slopes

- Follow recommended structural details.

4. DepEd Architects and Engineers Perspective

From the interview conducted, they were keen on improving hazard resilient structures as long as there is no budget constraint. Technology for hazard mitigating structures in other countries is already advanced in terms of construction methods and materials. Thus, there is a need for improving hazard resilient structures for school building program in the Philippines.

V. CASE STUDIES OF BEST PRACTICES IN INTEGRATING DRR IN EDUCATION

The following section presents cases that show good practices in integrating disaster risk reduction in the education sector. It includes proposed policies, institutional arrangements, programs and local initiatives from which lessons can be gained.

Case No.1: Policies for Disaster Risk Reduction in the Education Sector

There is a bill pending in the Philippine House of Representatives which can help promote greater risk reduction among schools in the country. This was introduced by Senator Manuel Lapid in 14th congress first regular session last July 3 of 2007. The Act called the “School Building Program of 2007” is presented below to give a total picture of its components:

“AN ACT ESTABLISHING A PROGRAM FOR THE ACQUISITION OF SCHOOL SITES AND THE CONSTRUCTION, MAINTENANCE, REHABILITATION, AND REPAIR OF SCHOOL BUILDINGS IN THE PUBLIC ELEMENTARY AND SECONDARY SCHOOLS NATIONWIDE, APPROPRIATING FUNDS THEREFORE AND FOR OTHER PURPOSES.”

The number of school facilities built has not met the yearly classroom requirements caused by the steady increase in enrollment. As a result, there is the perennial problem of classroom shortage that contributes to the deteriorating quality of our education system. Today, the national classroom-student ratio for elementary and secondary public schools is a staggering 1:65 due largely to the free education program, which has not been met by a corresponding increase in the number of classrooms. With only 1.76 Billion PhP allocated for school building program in the 2007 GAA, the backlog of schoolrooms will increase to 30, 100 classrooms by the end of 2008. To attain the ideal classroom-student ratio in the next five (5) years, about 129,000 new classrooms have to be constructed excluding those that need to be rehabilitated. This bill seeks to create a comprehensive program that will address the problem of classroom shortage. A salient feature of this bill is the provision of build-operate-transfer, build-lease-transfer, build-transfer, rehabilitate-operate transfer, and other contractual arrangements that will allow the use of both government and private funds to finance the construction of needed school buildings, and the creation of an inter-agency committee to formulate and ensure the effective implementation of the program by the Department of Education (DepEd). The program will also provide for the integration of all the necessary information for the effective monitoring and maintenance of existing school buildings, It is hoped that with the passage of this bill, class sizes will be reduced to a manageable level for a more conducive learning environment and thus result in the improvement in the quality of our education.

Be it enacted by the Senate and House of Representative of the Republic of the Philippines in Congress Assembled:

Section 1. Title.-This Act shall be known as the **“School Building Program Act of 2007”**

Sec.2. **School Building Program Objectives.**-There shall be established a comprehensive and continuing School Building Program, hereinafter referred to as the “Program”, which shall have the following objectives:

- a. To provide a system for an accurate inventory of all existing public primary and secondary school buildings, with proper indications as to their location, size, capacity, condition, and compliance with basic building safety requirements;
- b. To provide appropriate studies for determining the yearly school building requirements based on projected increase in enrollment and other appropriate indicators;
- c. To provide for the effective monitoring and supervision of all school building facilities with respect to their proper and adequate maintenance, replacement, rehabilitation and repair;

d. To provide a comprehensive plan for the acquisition and/or construction and adequate school sites, buildings and facilities for all public elementary and secondary schools nationwide, the aim of reducing the classroom-students ratio to an ideal proportion within a period of five (5) years upon approval of this Act;

e. To provide the mechanism for the selection of public schools to prioritize in the school-building projects nationwide;

f. To provide a specific time schedule for the construction of school buildings which shall be strictly followed so as to prevent unnecessary delays and backlogs;

g. To provide for necessary mechanisms which will facilitate a close coordination among the Department of Budget and Management, Department of Public Works and Highways, Department of the Interior and Local Government, and the Department of Education to expedite the implementation of the Program;

h. To formulate guidelines for the bidding procedures that will be used for the school building program including that of the contractual arrangement schemes in relation to the Procurement Reform Act;

i. To provide for a definite work and financial schedule for the construction, operation and maintenance of school buildings under any of the contractual arrangement schemes in relation to the Procurement Reform Act.

Sec.3. Inter-Agency Committee- To formulate and ensure the effective implementation of the program, there is hereby created an inter-agency committee to be headed by the Secretary of the Department of Education (DepEd) as Chairperson, and the respective Secretaries of the Department of Public Works and Highways (DPWH), Department of Budget and Management (DBM), and the Department of the Interior and Local Government (DILG), as members. The committee shall within one (1) year from the approval of this Act, submit to the Committee on Education of both Houses of Congress and every year thereafter, the comprehensive school-building program herein established.

Sec. 4. Implementation of the Program-Consistent with the provisions of Republic Act No. 7880, otherwise known as the “Fair and Equitable Access to Education Act”, the Committee shall determine and supervise the acquisition and/or construction of priority school building projects to be implemented by the DepEd as provided in the Program. The DepEd is hereby authorized to enter into contracts with duly pre-qualified private contractors for the design and construction management, as well as the financing, construction, operation, maintenance of school buildings through the build operate and transfer, build and transfer, build-lease and transfer, rehabilitate-operate and transfer and other contractual arrangement schemes provided under R.A. No. 6957.

Sec. 5. **Release of Maintenance and Other Operating Expenditures.**-For the purpose of ensuring compliance of such contractual arrangement as may hereinafter be entered, the appropriation of DepEd for the School Building Program and for Maintenance and other Operating Expenditures shall be directly released to DepEd according to the work and financial schedule stipulated in the program.

Sec. 6. **Appropriation.**-The amount necessary to attain the objectives of this Act shall be authorized to be appropriated out of the unallocated share of the national government in the income of the Philippine Amusement Gaming Corporation (PAGCOR), for a period of (5) five years. If the above amount is inadequate and insufficient, such amount as may be necessary to augment said annual appropriations shall be included in the General Appropriations Act.

Sec. 7. **Separability Clause.**-If any provision in this Act is declared unconstitutional, the same shall not affect the validity and effectivity of the other provisions hereof.

Sec. 8. **Repealing Clause.**-All laws, decrees, orders, rules and regulations and all other issuances or parts thereof, which are inconsistent with this Act are hereby repealed or modified accordingly.

Sec. 9. **Effectivity Clause.** -This Act shall take effect upon its publication in at least two (2) newspapers of general circulation.

Policy proposal like this, once approved, can make a significant impact in reducing disaster risks in the education sector. It requires advocacy on the part of the institutions involved and among the NGOs and other stakeholders so that it would become a reality.

Case Study No 2: Building Safe Learning Environment: Safe Schools Project of UNICEF

One case study on best practice is a program “Building Safe Learning Environment for Children Project” by the UNICEF, Philippines.⁴

Immediately following the devastating 2006 typhoons, UNICEF Philippines promptly mobilized its resources and joined the United Nations family in issuing an international flash appeal to seek assistance for the disaster-affected areas of the country, particularly Southern Luzon. Considering the growing intensity and destructiveness of global disasters, UNICEF deemed it necessary to go beyond the usual education in emergencies response of creating temporary learning spaces and instead launch a more comprehensive emergency package which will support the government in building more hazard-resistant structures and strengthening its capacity for emergency preparedness and response.

⁴ UNICEF Philippines: UN Consolidated Flash Appeal: Building Safe Learning Environment-Safe School Project. December,2007.

This gave rise to the Building Safe Learning Environment (BSLE) Project with substantial financing support from the Netherlands and Sweden funds. The project became a pilot test for UNICEF Philippines to engage in large-scale construction work as part of its humanitarian intervention. It is being coordinated and managed by UNICEF, in partnership with the Department of Education (DepEd), Department of Social Welfare and Development (DSWD) and concerned Local Government Units (LGUs).

The BSLE Project seeks to improve the teaching-learning environment of pre-school and school-age children, day care workers and teachers and to enhance their capacity for emergency preparedness and disaster risk management. This has two sub-projects, the Safe Schools Sub-Project and the Emergency Support for Day Care Centers Sub-Project. The main feature of BSLE Project is the structural component or construction and rehabilitation work for damaged day care centers and schools combined with non-structural components. The first covers the service delivery aspect of the project while the latter encompasses policy as advocacy, social mobilization of school-community stakeholders, participation and capacity building of school children and teachers, technical assistance and monitoring and evaluation. Project coverage includes four city school divisions and six provincial school divisions and two regional offices - Southern Tagalog and Bicol Regions.

So far, the project has contributed to the following:

1. Policy Advocacy and Social Mobilization

- Provided technical assistance to the DepEd in developing its Disaster Risk Reduction Resource Manual. It will serve as a guide for teachers and school heads on disaster risk reduction concepts and strategies. The project will subsequently support its printing and distribution to selected schools.

2. Service Delivery

- Brought back normalcy to the educational situation of over 2, 100 school children from 18 primary schools and five secondary schools in the disaster-affected areas by making their learning environment safe and functional. This was done through the completion of repair work for 13 classrooms in 5 schools sites and new construction work for 36 classrooms in 18 schools sites with disaster-resistant features;
- Provide basic school supplies to about 18,000 school children in 29 recipient primary schools and to 780 teachers in the targeted elementary and secondary schools to replace those damaged or washed out by typhoons;
- Enhanced the library collection and learning materials of 59 primary schools through the provision of educational packages consisting of story books, reference materials, dictionaries and globes. Altogether, this will benefit about 62,000 school children representing the enrolment in the 72 schools.

3. Project Coordination, Monitoring and Evaluation

- Broadened multi-stakeholders participation (GOs, LGUs, NGOs, donor community, private sector) and facilitated the coordination and sharing of lessons learned.

- Enhanced the quality of classroom repair and construction by maintaining close partnership with DepEd and engaging the services of an independent engineering firm to strengthen quality assurance monitoring.
- Strengthened lead cluster role of the Department of Education and coordination among the Education Cluster members.

The first batch of the BSLE-Safe School Project was successfully implemented and progressing to meet its overall target goal. It is also influenced other disaster management players, stakeholders and most especially the DepEd to take on more rehabilitation work and assume cluster lead role. The project not only boosted UNICEF co-cluster leadership, it also cultivated a healthy multi-stakeholders participation.

Commentaries: A Good Practice⁵

The Project, especially the SSP sub-project, can be described as good practice because it pursues the two objectives of the ongoing World Campaign – making school buildings safer and mainstreaming disaster risk reduction into school curricula. The SSP focuses on: (1) promoting awareness on school safety; (2) integrating disaster risk management into school curricula; (3) training and building the capacity of school students, teachers and non-academic staff on basic life saving skills; and (4) building school facilities that are resilient to disaster impact to ensure that children are protected from natural hazards.

The Principal-led School Building Program allows school principals to take charge of the management of repair and/or construction with the assistance of a DepEd engineer.

Also, the SSP makes use of a Department of Education (DepEd) approach known as “Principal-Led School Building Program” (PSBP). Under the PSBP approach, school principals or school heads take charge of the implementation management of the repair and/or construction with the assistance of a DepEd project engineer. As shown by a recently completed school repair work supported by AusAID, the approach not only ensures successful and timely project completion but also empowers school communities to manage and eventually own and sustain projects.

The SSP structural component for repair and new construction work incorporates hazard-resistant features, especially against typhoons. New construction work includes standard classroom design and new school buildings that can serve as evacuation centers with flexible features to accommodate a large number of people (e.g. accordion-type partition walls, beams or hooks for hanging hammocks, improved/additional sanitation facilities – toilets, bath/washing areas, water points, cooking and waste disposal areas). The construction work is managed by the DepEd through the above mentioned Principal-Led School Building Program approach. This approach encourages active involvement of school heads together with PTCAs and other stakeholders in the community. The same approach was adopted in the AusAid-assisted school repair project that immediately preceded the BSLE. In addition, an international NGO, Habitat for Humanity Philippines (HFH), will assist school building construction using a new technology but following DepEd specifications and standards. Recipient schools will come up with an “Operation & Maintenance Plan” for sustainability and ownership.

⁵ Except from International Strategy for Disaster Reduction, 2007. Toward a Culture of Prevention; Disaster Risk Reduction begins at School. Geneva: ISDR, United Nations.

Lessons Learned

Key lessons learned from the Project are: (1) emergency humanitarian response must be closely linked with early recovery or long-term development objective/work; (2) facilities (e.g. schools, day care and health centers) providing basic services should be improved, strengthened/retrofitted against hazards, and maintained; and (3) first responders such as community members and leaders, teachers, students, government representatives, youth organizations and PCTAs should be knowledgeable on disaster risk management, emergency preparedness, and risk reduction measures.

The Project has faced the following major challenges: (1) consolidated data on the number of damaged schools was not immediately available; (2) massive relocation of internally displaced persons to crowded and congested schools was not done due to non-availability of suitable lands for relocation, which remains a challenge to date; and (3) securing the cooperation or participation of stakeholders (other donors and community leaders) in project implementation was not an easy task.

Most of these challenges, however, were overcome through the activation of the UN cluster approach. An “Education in Emergency Cluster” was formed both at national and local levels. Together with government counterparts and the Department of Education, UNICEF, as the leading agency, coordinated all the above interventions to ensure that assistance/programmes and services reached a wider coverage, avoid duplication, and ensure accountability.

Case No 3: School Building Design for Disaster Reduction: The Learning and Public Use Schoolbuilding (LAPUS Building)⁶

The LAPUS (Learning and Public Use School) building located in Bicol is made of reinforced concrete intended to be typhoon and earthquake resistant and can be used as an evacuation center during calamities.

The LAPUS building is a one-storey two-classroom building that can be utilized as an evacuation center during calamities and emergencies. The LAPUS building is the first hazard-resistant, all-concrete DepEd structure in the Bicol region. It is expected to last for at least 50 years without need for any major repairs or rehabilitation work similar to the old Gabaldon buildings. The P2.3-million (\$54,762.00) building houses two classrooms that could each accommodate 63 students or at least six (6) families per room. Also, according to Secretary Lapus, “this (one-story) building is made of reinforced concrete and it is designed to be typhoon-and earthquake resistant. “The sturdy school building are elevated from the ground by a meter higher to protect those inside from flood and can accommodate two classes during regular days and at least 60 people when used as evacuation center.”

The DepEd would spend about P15,000 (\$357.00) per square meter to build LAPUS buildings that would have reinforced concrete walls and beams, waterproofed slabs for the ceilings, as well as steel encased glass windows and steel doors to prevent the entry of water. It also has a collapsible plywood panels for partitioning, tiled comfort rooms, and a kitchen. Its ceiling is reinforced with 20-millimeter steel bars.

⁶ Sources: <http://www.op.gov.ph/printerfriendly.asp?newsid=19511>
<http://bicolmail.com/issue/2007/june21/deped.html>
<http://www.pia.gov.ph/?m=12&fi=p070703.htm&no=80>

Each classroom also has a wide kitchen and two comfort rooms, the bigger of which is for girls and the handicapped, and the smaller one for boys. The building has a floor area of 230 square meters, divided into two classroom units. A unit covers 115 square meters, including the 63-square meter classroom plus the kitchen, CRs and lavatory.

The all-weather Learning and Public Use School (LAPUS) school building is “principal led,” which means that it is the school principal who prepares the program of work, plans and specifications; and supervises the bidding for the construction of the building.

Along with the construction of these buildings, the DepEd will also start integrating disaster risk reduction concepts in secondary school curricula, assess water and electrical utility facilities, check structural integrity and stability of schools against natural emergencies, and conduct school mapping exercises and quarterly earthquake drills.

The Department of Education would turnover school buildings in the Bicol region, including some intended to be used as evacuation centers in times of calamity, as reports of damages to school buildings caused by typhoon Mina in the Cordillera and Region 2 have hit the P200 million (\$4.7 million dollars). Funded under DepEd’s Bicol Calamity Assistance and Rehabilitation Efforts (BCARE) in the aftermath of super typhoons Milenyo and Reming, a total of 545 new classrooms are expected to benefit some 50,000 students and teachers. Apart from the new school buildings, a total of 6,039 classrooms have already been repaired and are ready for use. Under the BCARE, DepEd has allotted some P1.2 billion for the construction of new classrooms and repair of those damaged in Albay, Camarines Sur, Camarines Norte, Catanduanes, Masbate and Sorsogon.

The department is right on track on its target at 98 percent completion rate. “BCARE is solely dedicated for the rehabilitation of the Bicol region and we made sure that we have new buildings which can also be used for evacuation especially in typhoon-prone areas like Bicol,” Lapus said. Meanwhile, Secretary Lapus ordered the immediate field assessment of the damaged school buildings and lost textbooks in Northern Luzon that suffered the onslaught of Typhoon Mina. Based on initial reports, DepEd said that the Cordillera Administrative Region (CAR) sustained some P102 million (\$2.42 million dollars) damages on school buildings followed by Region 2 which reported damages of P101.4 million (\$2.41 million dollars).

Based on initial reports on the impact of typhoon Mina, DepEd said that the Cordillera Administrative Region (CAR) sustained some P102 million (\$2.42 million dollars) damages on school buildings followed by Region 2 which reported damages of P101.4 million (\$2.41 million dollars).

“We will request for similar CARE funding for them so that repairs can be undertaken immediately,” the education chief said. In the Bicol Region, typhoon Mina caused the evacuation of some 10,944 families or 51,674 individuals, using as temporary evacuation centers school buildings in the area. In Legazpi City, DepEd has completed the construction of an all-concrete building that was designed to withstand earthquake and typhoon. The classrooms evacuation center has comfort rooms, water supply and kitchen. Some 15 more hazard-resistant building are currently under construction in the Bicol region. Lapus reported that the United Nations Children’s Fund (Unicef) will fund 12 more of these hazard-resistant building in Bicol.

Typhoon Mina caused the evacuation of some 10,944 families or 51,674 individuals in the Bicol region. The evacuees used school buildings as temporary evacuation centers.

In Albay province, Ligao City has the biggest number of new classrooms at 301, followed by 71 in Tobacco City and 56 in Legazpi City. In Camarines Sur, Iriga City has 64 new classrooms while Naga City has 71. Hit hard by the succession of typhoons last year, Sorsogon will have 89 new classrooms after the turn-over in December. Of the 6,039 repaired buildings, 2,579 are in Albay, 1,620 in Camarines Sur, 204 in Camarines Norte, 358 in Masbate and 936 in Sorsogon and 342 in Catanduanes.

Case No. 4: NGO Involvement in Education: Child Centered Disaster Risk Reduction⁷

PLAN upholds the rights of communities and interests of children and promotes community independence by helping them identify their own problems, the proposed solutions to address them and involving them in taking the necessary steps to solve it. PLAN enables children and families to play an active role in shaping their own future and the development of their communities. PLAN works with children and their families to ensure access to essential services such as sanitation facilities, basic education and health care. PLAN also has programs in child protection, governance, and disaster risk reduction. PLAN's goal is to see that children live and grow in a safe, healthy and nurturing child-friendly environment.

Child Centered Disaster Risk Reduction

Child-Centered Disaster Risk Reduction (CCDRR) is a process in which children in their evolving capacities are encouraged to be active participants in the identification, analysis, and treatment, of their disaster risks in order to reduce their vulnerabilities and enhance their capacities. CCDRR also ensures that the welfare of children are prioritized in community risk reduction activities, as well as in relief and response efforts during disasters so that they may continue to live in a safe, healthy and nurturing child-friendly environment.

The aim of CCDRR is to reduce children's vulnerabilities and to strengthen their capacity to cope with the disaster risks they face, through their participation and involvement in risk reduction activities.

PLAN Philippines has responded to various disasters since its inception in 1961. In the recent years, Plan has responded to disasters brought about by typhoons and floods in Isabela, Pangasinan, Bicol and Cebu; tidal wave in Calapan; earthquake in Baguio; Mt. Pinatubo eruption in Zambales; typhoons and landslide in Benguet; landslides in Southern Leyte, and floods in Eastern Samar. In some of the disaster prone program units, PLAN has allocated a budget specifically for disaster response.

In the disasters that hit Isabela, Occidental Mindoro, and Pangasinan provinces at different times in the late 1990s and early 2000, PLAN has provided assistance to families and communities in terms of relief and rehabilitation work, including the reconstruction of damaged school buildings. During the December 2006 landslide in Southern Leyte which has displaced 1,425 families, Plan provided relief and cash assistance to the affected families, and built a community water reservoir in the worst hit area. As part of the long term rehabilitation in the highly damaged areas, PLAN has also implemented a project that aimed to stabilize slopes using coco-net fiber nets and rolls. The slopes were later planted with vetiver grass to prevent soil erosion. PLAN also reconstructed, built and repaired typhoon-damaged classrooms in Rapu-Rapu Island in Albay.

Aside from the assistance provided to families, PLAN Philippines has also looked after the children in affected communities. PLAN formed children's associations at the village, municipal, and provincial levels, and organized regular activities for them, including workshops and camps where the children were trained on disaster preparedness, mitigation and basic emergency response and search and rescue operations. PLAN also facilitated play therapy for the children victims of disaster as part of its psycho-social program.

PLAN Philippines has responded to various disasters since its inception in 1961. PLAN has provided assistance to families and communities in terms of relief and rehabilitation work. It has also prioritized the welfare of children through its Child-Centered Disaster Risk Reduction program.

⁷ Plan International-Philippines. Child Centered Disaster Risk Reduction

Can children really participate in disaster risk reduction?

Assessment: After the 2006 Guinsaigon landslide in Southern Leyte, PLAN mobilized the children to help in assessing the needs of the families affected by the disaster.

Children in Southern Leyte, Albay and other PLAN areas participated in hazard mapping, hazard watching and risk identification in their communities and have contributed to DRR plans at school and community level.

Plan makes use of the Rights-based Participatory Risk Assessment and Planning or RipRap, a participatory process involving on-the-spot, collection interpretation and analysis of information about hazards, vulnerabilities and capacities from various sources, including children.

Public Awareness: PLAN helped organize a theater group made up of children survivors of the Guinsaigon landslide in Southern Leyte, and their advocacy is to educate communities on the effects of disasters through entertainment, music and performance arts,

In Mindoro, a group of child radio commentators were also formed through PLAN's program, and they host a youth-oriented weekly radio program to encourage disaster preparedness and to inform communities about disasters.

Capacity Building: Children are actively participating in community and school drills as a disaster preparedness activity. DRR has also been integrated in scouting activities and summer camps to strengthen children's capacity to participate in DRR and in emergency response

Climate Change Adaptation: Children in PLAN areas also participate in different activities that promote environmental protection and climate change adaptation, such as river protection, tree planting, tree growing, protection of trees, corral reef and marine sanctuary protection, and coastal clean-up.

PLAN, in partnership with the Department of Education, and CIRCA of Albay has supported the drafting of the DepEd Order on Climate Change Adaptation which encourages all students and schools in the Philippines to implement disaster risk reduction measures relative to climate change hazards every year.

Global Warning Systems: Children were taught to understand early warning systems such as the rain gauge that the children themselves set-up in their schools and communities. The children themselves also helped in educating other children about the use of the rain gauges.

Relief, Response and Rehabilitation: Children also participated in Relief Distribution Operations with youth leaders and assisted in the set-up of immediate shelters for survivors. Children whose schools were heavily damaged by disasters also helped to set-up temporary schools using tents from PLAN.

Rehabilitating Schools: A Case by PLAN in Albay⁸: With its white sand shores and marble mountains, Barangay Mataas on Cagraray Island in Bacacay town in Albay is a paradise getaway for any casual tourist. For the villagers, however, life had not been all sunshine as they struggle against being overlooked by the mainland in development efforts, especially after Super typhoon “Reming” struck last year. About an hour’s boat ride from mainland Bacacay, the village and its remoteness had led to a short supply of resources, particularly for education. For 11 years, Mataas had only one teacher for its entire elementary school. It also only had one concrete classroom and a bamboo hut for about 60 students.

In Remings’s aftermath, the hut had to be rebuilt three times to withstand strong winds so that classes could resume, teacher Efren Bino, 37, said. During this period, damaged boats and turbulent seas cut off the already isolated community from the aid of local government units.

In Remings’s aftermath, the hut had to be rebuilt three times to withstand strong winds so that classes could resume. During this period, damaged boats and turbulent seas cut off the already isolated community from the aid of local government units.

This was the situation that faced nongovernmental organizations, like PLAN Philippines, when they identified Mataas as target for relief and rehabilitation last year. PLAN, an international child-centered humanitarian group, constructed the 12 by 16-meter school building now standing where the makeshift-classroom hut used to be.

Designed to be typhoon-resistant, the building is made of materials that can withstand strong winds and are impervious to the corrosive effects of salinity in coastal villages. “It was also designed to be used as an evacuation center in times of calamities,” said Gennie Dait, project coordinator for PLAN’s Albay Disaster Response Program.

Barangay chair Michael Baraquiel expressed gratitude and relief at finally having not only a permanent classroom but also a safe evacuation center for the community. Inaccessibility remains a problem for Albay’s island communities, a plight which becomes more glaring in times of disaster.

After Reming struck, residents consumed even eating sea-soaked rice for weeks since no relief goods were coming in, Baraquiel recalled. The situation is more dire in education.

“Until now, I walk to neighboring villages just to ask for school supplies. We also still use the damaged books we were able to retrieve after the typhoon,” Bino said. The village teacher said that although the Mataas Elementary School recently received new textbooks from the government and some NGOs, it still had no books for some subjects. The same problem afflicts the elementary school in Barangay Cawayan, about 30 minutes away by boat, on the same island.

Even with newly donated supplies, the Cawayan Elementary School is still left with only one textbook for every six students, school head Isabel Ortiz-Barquilla said. She was thankful, however, that PLAN was able to repair its three-classroom school building.

⁸ Source: Gamil, Jaymee T. (2007, December 27) Albay island villages now get relief. *Across the Nation Philippine Daily Inquirer*, pp.A14).

“It’s now more conducive to learning. We didn’t have partitions between classrooms before, so classes distracted each other,” Barquilla said. She added that before the building was repaired, the school had never been used as an evacuation center since facilities were so dilapidated and dangerous for fleeing families

PLAN remains one of the few NGOs concentrating relief and rehabilitation efforts to the least-served areas in Albay. PLAN’s program areas cover three island communities namely, Cagraray in Bacacay, Batan and Rapu-Rapu islands. About 25,000 school children were displaced when 693 classrooms in Bacacay and Rapu-Rapu were damaged by Reming. PLAN has reconstructed or repaired 60 of these classrooms, with 26 more projects ongoing, Dait said.

Immediately after the typhoon, relief goods, tents, tarpaulin roofings, school supplies, teaching materials, chairs, chalkboards and textbooks were distributed to 58 schools in 59 villages in the island communities. PLAN has allocated \$1.2 million from the Albay Disaster Response Program, with each classroom costing about P550,000.

“We reckon that NGOs have provided us more help than the government” Baraquiel said.

At the Cawayan Elementary School, the Department of Education only repaired the roof of another building, retaining old walls and leaving windows and doorways without panes or doors. The operation already cost about P400,000, Baraquiel said.

When PLAN rehabilitated the schools, parent-teacher associations pitched in their resources, constructing the comfort rooms at the Cawayan Elementary Schools and armchairs at the Mataas Elementary School. PLAN also conducted capability-building training sessions. But much has to be done in rehabilitating the islands.

For NGOs like PLAN, all hope is not lost. “They are like forgotten islands, because help rarely reaches them. But we would like to give hope, especially for the children there,” Dait said.

When PLAN rehabilitated the schools, parent-teacher associations pitched in their resources, constructing the comfort rooms at the Cawayan Elementary Schools and armchairs at the Mataas Elementary School. PLAN also conducted capability-building training sessions. But much has to be done in rehabilitating the islands.

Case No.5: Education as a Strategy for Psychosocial Recovery for Children in Emergencies

For more than 75 years, Save the Children has been helping children survive and thrive by improving their health, education and economic opportunities. In times of acute crises, Save the Children mobilizes rapid life-saving assistance to help children recover from the effects of war, conflict and natural disasters.

Save the children has been working in the Philippines to make a difference in the lives of children for the past 25 years. All programs are implemented through community mobilization which builds on the strengths and assets of the community. There are three cross-cutting strategies that ensure all programs are designed and implemented through effective and sustainable community support and collaboration. These strategies are:

- Appreciative Community Mobilization- composed of Appreciative Inquiry (AI) and Community Mobilization (CM). AI builds on the community's strength such as common values, achievements, best practice and resources. CM is a capacity building process based on sustained participation of community individuals and organizations.
- Experience Based Advocacy- a process by which communities and partner organizations influence policy makers to facilitate the creation, reform and effective implementation of critical policies.
- Behavioral Centered Programming- a strategic process that entails the assessment of current behaviors in relation to the problem of concern, identifies the barriers and enabling factors for improvements, discovers motivation and identifies behavior for change.

Applied in children in emergencies and crises, the Save the Children implements a program called "Support for Child Protection in Emergencies". The program benefits an estimated 3000 children between ages 3-9. Adult community stakeholders include day care workers, elementary school teachers and other educators, health service providers, parents and childcare-givers, and local leaders.

Save the Children sees the children's access to education as one of the most reliable means of restarting routines towards psychosocial recovery. The program therefore aims to improve children's well-being, participation in and access to psychosocial, education and health services in the early recovery phase of communities affected by Typhoon Durian (Reming). The program objectives are:

- To provide immediate recreational and learning activities for children that will assist in their coping and psychosocial recovery;
- To assist in the restarting and rehabilitation of education and health activities in the day care centers, public elementary schools and barangay health stations/rural health units of the communities
- To facilitate child-led initiatives towards disaster risk reduction, emergency preparedness and contributing towards early recovery.

A step toward child-led disaster risk reduction is the Child First or Children Initiative on Local Disaster Risk Reduction. It seeks to fully integrate risk reduction programming into school curricula and community emergency plans and ensures that learning environment are child-friendly and rehabilitated or retrofitted to withstand natural hazards. There is also the Child Craft or Creative Arts for Transformation. This is a psycho-social program for children and youth in emergencies.

Save the Children implements a program called "Support for Child Protection in Emergencies". The program benefits an estimated 3000 children between ages 3-9. Adult community stakeholders include day care workers, elementary school teachers and other educators, health service providers, parents and childcare-givers, and local leaders.

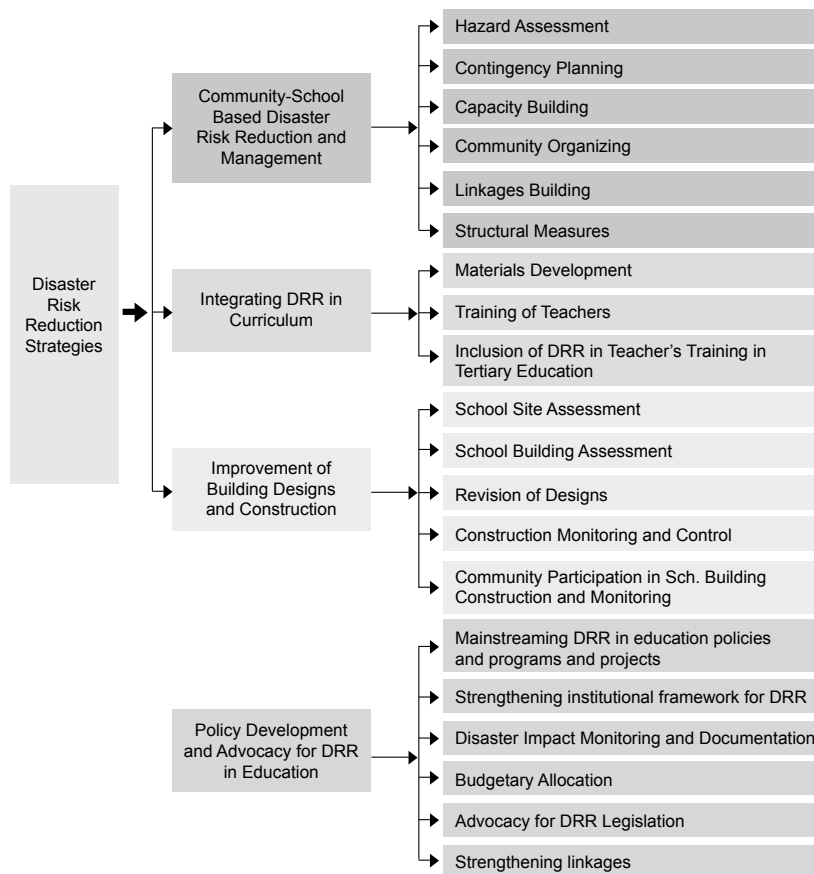
A step toward child-led disaster risk reduction is the Child First or Children Initiative on Local Disaster Risk Reduction. It seeks to fully integrate risk reduction programming into school curricula and community emergency plans and ensures that learning environment are child-friendly and rehabilitated or retrofitted to withstand natural hazards.

PART D: RECOMMENDATIONS AND SUGGESTED NEXT STEPS

VI. RECOMMENDATIONS

There are four main strategies recommended for the reduction of risks in the education sector in the Philippines. These are 1) Community-School Based Disaster Risk Reduction and Management; 2) Integration of DRR in the Curriculum; 3) Improvement of the building design and construction; and 4) Policy Development and Advocacy for DRR in Education. The specific components of these strategies are shown in Figure 14.

Figure 13/ Strategies for Disaster Risk Reduction in Education A. School and Community-Based Disaster Risk Reduction Program



A. School and Community-Based Disaster Risk Reduction Program

In the Philippine context, the school is a fundamental institution that is very much imbedded in communities. School children spend more of their daytime in school. The teachers are usually looked up and listened to by the community people and are involved in several non-teaching events such as election, disaster situation and emergencies, and cultural affairs. The school is a venue for several community activities.

With these resources and potential, the school can be a center for disaster risk reduction program that would combine the resources of both the school and the community. This program involves the following:

- Enhancing the capacity of the schools, the administration, the teachers and the personnel in disaster risk reduction, particularly in educational activities for disaster reduction, evacuation management, and disaster documentation particularly the damages, experiences and lessons gained.
- Assessing the capacity of schools in providing temporary shelter or evacuation centers. The schools must have the necessary amenities and facilities to support a given number of disaster affected people. If the school will be used as evacuation center, then there must be alternative venue for classes.
- The task of managing the evacuation center must be collaboratively done by the school administration and the community people by organizing the latter, with clear rules and procedures, expectations and monitoring system. Each school and the community must have an established evacuation plan.

B. Enhancing Disaster Risk Reduction in the Curriculum

There are already efforts in integrating disaster risk reduction in the curriculum and this must be strengthened and implemented, not only on a pilot scale but mainstreamed at the national level, at the primary, secondary and tertiary level. Since the DepEd is mandated by law to handle evacuation centers and to educate the people about disasters, then the government must provide the necessary support to fulfill these functions such as materials and equipment for teaching and training, human resource development activities, and linkages with organizations and institutions that could be support systems for curriculum development and actual disaster management activities.

- The integration of DRR in education should be both in the formal, as well as non-formal education, including adult education for different vulnerable groups such as people with physical, mental and emotional disabilities, the elderly, and those in occupational risks.
- The education has to include modules in caring for the caregivers such as teachers and disaster workers who could be both a victim and a service provider. Training in psycho-social intervention is also needed.
- DRR has to be incorporated as a subject in the tertiary education of teachers in colleges and universities to develop teachers' capability in handling DRR in teaching.

More specific suggestions came from the workshop group discussions:

Question: What extra curricular material is already available, both in government and non-government sector which can be used to supplement the DRR curriculum? What are the possible sources of funding for production?

There are already efforts in integrating disaster risk reduction in the curriculum and this must be strengthened and implemented, not only on a pilot scale but mainstreamed at the national level, at the primary, secondary and tertiary level. In addition, the integration of DRR in education should be both in the formal, as well as non-formal education, including adult education for different vulnerable groups such as people with physical, mental and emotional disabilities, the elderly, and those in occupational risks.

The comments are:

For materials-

- Pamphlets (NDCC agencies)_
- Brochures
- Posters
- Mural and Paintings (e.g. Walls)
- Training manuals/modules
- Flipcharts/instructional materials
- Games
- Technical Reports
- Books (Family Survival of OCD)
- Specialized modules like dances, songs, music and arts, puppets, mascot

For source of funds-

- Govt funds (agency, Barangay IRA)
- National Education cluster (led by DepEd and UNICEF)
- External funds (ex. European commission, DIPECHO, UNDP, JICA, AusAid, ADPC, etc)
- Private Sector
- Philippines development assistance fund

As issues and concerns-

- Need for equipment that can be used for showing IEC (e.g. LCD projector)
- Need to harmonize available materials/manuals/modules, review, build on and improve on existing materials
- Need for an annual review of materials
- Local dialect
- Age-appropriate level

Question: Which national and sub-national institutes need to develop training modules for teachers so that all teachers in the country can be trained to teach the DRR module? What are the possible sources of funding of such training, government and non-government?

The comments are:

Institutes that will develop modules -

1. National

- Department of Education (DepEd) Curricular Division (Elementary and Secondary)
- National Educators Academy, DepEd
- Commission for Higher Education (CHED) Colleges and Universities
- National Institutes for Science and Mathematics Education (Located in the University of the Philippines)
- Education Cluster
- Government Projects –(e.g. Ready Project: PAGASA, MGB, PHIVOLCS, NAMRIA, OCD)
- DILG – Local Government Academy

2. Sub-national

- Teachers Education Institute or Center for Excellence per region
- Local Government Units (LGUs)

B. Tasks

- 1. Development of modules and materials
- 2. Training of Teachers
- 3. Coordination among service providers
- 4. Resource Mobilization/ Fund Providers

C. Preliminary Coverage and Priority Areas

- Nationwide (Regions: 2, 4, 5, 8, NCR, CARAGA, ARMM)

D. Possible Sources of Funds

- 1. Regular Government Agency Budget
- 2. Official Development Assistance (ODA)
- 3. International NGOs
- 4. Private/Corporate Entities

C. Mainstreaming Safer Construction of School Buildings

The present efforts of the DepEd to come up with classroom designs that are more disaster resilient have to be mainstreamed in the sectoral development plan and for all schools so that they are not implemented on a pilot case only. Since the school is still the expected place for evacuation center, then the LAPUS design should be adopted on a nation wide scale. At the same time, the following have to be considered in the physical development of school buildings:

- Lands being donated by private entities for building site have to be assessed in terms of its vulnerability to hazards. Not all donations can be advantageous since there are observations that “sites for actual construction of school building are donated by the local government or purchased from a donor but these are often dependent on available land that usually nobody wants in the community.” (Allen, Molen, 2008).
- The Guidelines for the Construction of the school buildings of the DepEd has to take into considerations the suggestions forwarded in this study as discussed in the previous section. To reiterate, these are found in sections:

III. Disaster/ Risk Reduction Measures (Page 21 of the DepEd Educational Facilities Handbook)

2.) Fire Prevention and Safety Measures

Recommendations: Water tank reserve in cases of fire.

4.) Road Safety

Recommendations:

- a.) Indicate speed limit of vehicles in school zones.
- c.) Use traffic calming facilities such as humps to reduce speeds before pedestrian facilities.

5.) Proper Use of Chemicals & Gases in the Science Laboratories

Recommendations: A safety measure board shall be posted as a reminder for students.

The present efforts of the DepEd to come up with classroom designs that are more disaster resilient have to be mainstreamed in the sectoral development plan and for all schools so that they are not implemented on a pilot case basis only.

IV. School Sites (Page 27 of the DepEd Educational Facilities Handbook)

a.) Location/ Environment

Recommendation: Provision for school location wherein it must not be located adjacent to existing schools or universities to avoid traffic congestion. Thus, avoiding engine noise and air pollution from vehicle emissions. This must comply with the standards of zoning requirements from the planning office of the city government.

c.) Accessibility

Recommendation: Building of satellite schools if possible to de-congest schools in the urban area. This minimizes travel time of students and maximizing safety of students in terms of street crimes and vehicular accidents.

- Detailed engineering shall proceed only on the basis of the feasibility or preliminary engineering study made which establishes the technical viability of the project and conformance to land use and zoning guidelines prescribed by existing laws. The findings contained in the feasibility study, if undertaken for the project, shall be examined. If, in the course of the exercise, as proposed, specific recommendations for such changes shall be supported by detailed justifications, including their effects on the cost, and if (necessary) the economic justification.

A schedule of detailed engineering activities shall include the following:

- a. Survey
 - b. Site Investigation
 - c. Foundation Investigation
 - d. Soils and Materials Investigation
 - e. Preparation of Design
 - f. Preparation of Specifications
 - g. Preparation of quantity and Cost Estimates
 - h. Preparation of Program Work
 - i. Preparation of Proposed Construction Schedule (and estimated Cash Flow for projects with schedule over Six (6) Months)
 - j. Preparation of Site or Right-of-Way Plans including Schedule of Acquisition
 - k. Preparation of Utility Relocation Plan
 - l. Preparation and Submission of Design Report
 - m. Environmental impact Statement for Major Project
 - n. Preparation of Bid/ Tender Documents
- The “Dura- Quick Technology” being proposed for building construction has to be tested for its resilience to disaster hazards, especially fire, earthquake and typhoon. Pilot testing of the materials have to be done before going into mass application.
 - As shown in the case study, the NGOs and the local communities have to be involved in the school construction, monitoring, repair and rehabilitation to ensure that there is ready and available local resources that can respond to immediate concerns.

More specific suggestions from the group discussions in the workshop include:

Question: For safer school construction what are the next steps to be taken for ensuring that all schools are built safe? Who would be the stakeholders – Government and non-government?

The comments are:

- On additional Features of a Safe School
- Presence of adequate water and power supply
- Comprehensive drainage and sewerage system
- Fire safety to include smoke detectors and alarm system; fire exit signage; access way for fire fighters
- Design provision for ventilation
- Design provision for gender sensitivity e.g. toilet and bath, play ground etc., including needs of PWDs

Immediate Policy/ Operational Actions

- Safety Assessment of existing buildings (ancillary construction for safe schools)
- Community participation on site selection (harness local knowledge) and fund mobilization
- Prioritization of earthquake, flood and typhoon prone areas
- Replication of host families

Stakeholders

- Department of Education
- Department of Budget Management
- Department of Public Works and Highways
- Philippine Institute of Volcanology and Seismology
- Philippine Atmospheric Geophysical Astronomical and Services Administration
- LGUs
- Parents and Teachers Association
- People's Organizations
- Religious Organizations
- Donor communities (foreign and local)
- Regional Counterparts
- BFP, Department Interior and Local Governments
- MGB, Department Environment and Natural Resources

Question: What additions should be made to the school building design so that it can be used as emergency and evacuation shelter with least impact on teaching?

The comments are:

- LAPUS building (existing) for physical education classes and non-academic classes

For schools in rural area

- Multi purpose covered courts which includes

- With comfort rooms
- With shower rooms separated from toilet
- An area to be convertible to a kitchen facility

For schools in urban area

- Use sports complex

D. Policy Development and Advocacy for DRR in Education

- DRR perspective has to be integrated in all policies and programs of the DepEd to reduce risk and ensure sustainability. Risk are involved, not only in natural disaster-related events, but in social, economic, financial, physical, environmental and institutional components of policies and programs.
- The existing institutional set up of the DepEd for DRR has to be strengthened by developing the capacity and mobilizing the people who are supposed to play their roles and responsibilities. There has to be warm bodies of second liners who shall continue the work in DRR within DepEd to ensure that the experiences and the capabilities are institutionalized, and not dependent on a few individuals to whom the responsibilities are bestowed upon.
- Disaster damages, losses and impact has to be monitored and documented at the school level and transmitted to the higher level in the DepEd echelon to come out with information exclusive on the education sector. The method should be done in such a way that the data can be aggregated without losing the possibility of disaggregating the data when needed. The Education Cluster has produced a damage assessment methodology and this can be adopted by schools when affected by disaster events. National level data from the DepEd that specify the losses can then be sent to the NDCC for official recording.
- The efforts in mainstreaming DRR in education is possible only if there are corresponding resources that would be allocated for the sector. The training alone of teachers in DRR would cost millions of pesos to reach all public school teachers. The same thing is true for other strategies and programs.
- Much can be achieved if the present efforts in DRR integration in the DepEd can be supported by appropriate legislation at the national and LGU level. The DepEd can play a significant role in the advocacy for the DRR legislation being proposed by the NDCC, as well as other bills that would benefit the education sector.
- The DepEd would gain much in strengthening linkages with other sectors, particularly international humanitarian organizations and national NGOs. This would help in gaining access to resources, capacity building, advocacy and actual response in times of emergencies. As the focal agency of the government in education, the DepEd has to show greater leadership in the Education Cluster to maximize the potentials of collaborative work.

REFERENCES

Published

ASEP (Association of Structural Engineers of the Philippines) Guide. *Earthquake Resistant Design of Structures*. 1991.

Department of Education. Basic Education Sector Reform Agenda (2006-2010). 2006.

_____. Principal-Led School Building Program: Operations Manual. Department of Education, Physical Facilities and Schools' Engineering Division Office of Planning Service, Department of Education, Pasig City 2007. Philippines.

_____. *DeptEd Education Educational Facilities Handbook*. (Revised Edition of the 1993 Handbook on Educational Facilities). Physical Facilities and Schools' Engineering Division Office of Planning Service, Department of Education, Pasig City 2007. Philippines.

National Economic Development Authority. Medium-Term Development Plan, 2004-2010.

Office of Civil Defense. Department of National Defense. Major and Minor Man Made and Natural Incidents, 1980-2003; 1990-2006.

The National Building Code of the Philippines. Published by Vicente B. Foz. Philippine. 1997.

United Nations Children's Fund (UNICEF). *Uncounted Lives: Children, Women and Conflict in the Philippines*. Makati: UNICEF and IBON Foundations, 2007.

United Nations International Strategy for Disaster Reduction. *Towards a Culture of Prevention; Disaster Risk Reduction Begins at School*. Geneva: 2007.

Periodicals and Case Monographs

Jaymee T. Gamil. Stories after storm; Blessings among the ruins. PDI. Vol.22.No.357, December 2,2007.

_____ Albay island villages now get relief. PDI. December 27, 2007.

Juan Mihuel Luz. Disconnections in Education. PDI. Vol. 22. No. 251-253. November 26-28, 2007.

Mars W. Mosqueda Jr. Pupil dies in Cebu flood. Manila bulletin. January 13, 2008.

Michael Lim Ubac. DepEd chief: RP Education has sunk to its lowest level. PDI. Vol. 23.No 26. January 3,2008

Plan Philippines. Child Centered Disaster Risk Reduction.

Tonnete Orejas. Flooded Pampanga school draws attention. PDI. Vo. 22.No.356. December 1,2007.

Unpublished Documents

Candy de Juan. Coordination and Networking. (A Powerpoint Presentation, n.d.)

_____ School-Community Disaster Risk Management Plan. (A Powerpoint Presentation, n.d.)

Department of Education. Compilation of Materials. 2007

National Disaster Coordinating Council. Implementing the HYOGO Framework for Action (HFA) in the Philippines: A Country Report. June 2007.

National Economic Development Authority. Foreign Assisted Project for Basic Education. June, 2007

Save the Children. Support for Child Protection in Emergencies.” Bata, bata... paano mo ginawa?”

_____ Save the Children in the Philippines: Creating Lasting Positive Change for Children in Need.

UNICEF. U.N. Consolidated Flash Appeal: Building Safe: Learning Environment-Safe School Project. December, 2007.

Internet

[www.congress.gov.ph/committees/index.php?pg=search&s=bills&id=C501 - 314k](http://www.congress.gov.ph/committees/index.php?pg=search&s=bills&id=C501-314k)

<http://www.hlurb.gov.ph/page/services>

<http://www.op.gov.ph/printerfriendly.asp?newsid=19511>

<http://bicolmail.com/issue/2007/june21/depd.html>

<http://www.pia.gov.ph/?m=12&fi=p070703.htm&no=80>

ANNEX A.1

SURVEY ON THE IMPACT OF DISASTERS IN EDUCATION Albay

School: _____

This form is to be filled up by a school official who is knowledgeable about the school situation and disasters affecting the school. The respondent can look at records and ask other officials for information necessary to fill up the form. You can provide written report related to the information being asked. Thank you.

Name of the Person Filling Up the Form: _____ **Position:** _____
Telephone No. _____ **Cell Phone:** _____ **E-Mail Address:** _____
School Address: _____

A. Information About the School

1. Number of Students, AY 2007-2008

Year Level	Male	Female	Total
First Year			
Second Year			
Third Year			
Fourth Year			
Total			

2. Number of teachers: _____ Male _____ Female

3. Year the school was established: _____

4. Average number of students per class: _____

B. Location of the School, Physical Characteristics and Facilities

1. Please check all the characteristics that describe the location of the school campus:

_____ Along the national highway or main road

_____ Campus not accessible to any vehicle

- Located on a slope or mountain side
- Located on a river flood plain or near the bank of a river
- Located in a fault line (Check only if you are sure)
- Located near the shore
- With trees surrounding the campus
- Located in the middle of a neighborhood
- Located in the middle or directly adjacent commercial/business district
- Located near an industry or factory that causes pollution

2. Types and Number of Buildings, Materials and Use

Types of Buildings in the school campus	State Number of Buildings	The building is made from what materials	Present Uses (Classrooms, offices, library, etc)
Pre-fab, one story			
Two story building			
Three story building			
Four story building			
Gym			
Others, please specify			

3. Check if you have the following facilities and utilities:

- A playground
- Fire exits for building with two or more story levels
- Fire extinguisher
- Water sealed toilets, please state the following:
 - number of toilet rooms for boys
 - number of toilet rooms for girls
 - number of toilets for teachers and staff
- total number of all toilet bowls
- Other types of toilet, please specify type and number

- Piped water supply that is potable or can be used for drinking
 Water wells
 Library, please state if it is at the first, second, or other story level: _____
 Computer, state how many.
 Internet connection
 Vehicles, state type and number: _____
 Other equipment for disaster response, please specify: _____

C. Disaster Impact and Damages

1. These past three years, what disasters did the school encounter? How many days was the school affected? What were the damages? How much were the estimated value of the losses? What were the actions done? By whom? Kindly fill up the table below:

Year	Kind of Disasters (War and Conflict, Fire, Flood, Typhoon, Earthquake, Landslide, etc.)	Number of Days that the school was affected	Damages to the School (Please specify)	Estimated Value of the Losses in Pesos	Actions Taken on the Damages (Please specify who did the action)

2. Classrooms and Evacuation

- a. Total number of classrooms _____
 b. Are the classrooms used for evacuation? YES NO
 c. IF YES, how many classrooms are available for evacuation? _____
 d. Are there any other rooms or facilities used for evacuation? YES NO

e. How many people can be accommodated in the school for evacuation purposes?

f. In practice, what is the average number of people making use of your school for evacuation purposes? _____

g. What are the problems encountered when the school is used for evacuation? _____

h. What are your responses to these problems?

i. Are there any other facilities in the area, aside from your school, that can be used as an alternative evacuation center? ____ YES ____ NONE. If Yes, what are they?

j. Are the classes suspended or closed when the rooms are used for evacuation? ____YES ____NO. If YES, proceed to Q.k. IF NO, where are the classes held?

k. When the classes are closed or suspended due to evacuation or disasters, how does the school catch up with the missed classes? Please explain.

3. School Drop Outs

a. What is the drop out rate for the past three years?

2004-2005: _____

2005-2006: _____

2006-2007: _____

b. What are the reasons for the drop out? _____

c. Have you observed students dropping out due to disaster events? ___ YES ___ NO

4. Other Impacts

a. What are the other impact of disasters in your school? _____

b. Do you see any positive or good effects of disasters in your school? ___ Yes ___ NONE.
IF YES, what are they? _____

3. Do you agree that the school should be used as evacuation center? ___ YES ___ NO
Why? _____

4. What are your suggestions to minimize the negative impacts of disaster in your school? _____

5. Any other comments? _____

Thank you very much.

ANNEX A.2

SURVEY ON THE IMPACT OF DISASTERS IN EDUCATION Tabaco, Albay

School: _____

FOR TEACHERS

A. Information About the Respondent

Name: _____ Age _____ Sex _____ Civil Status _____

Highest Educational attainment: _____ Number of years of teaching in the school: _____

Year level of students being taught: _____ Subjects taught: _____

B. Impacts of Disasters

1. Were there any situation when your classroom was used as an evacuation center for families affected any disaster? _____ Yes _____ No

2. IF YES, how many days was the room used as an evacuation center? _____
IF NO, PLEASE PROCEED TO Q. 8.

3. How many families stayed in your room? _____

4. Were there any damages in your classroom when this was used as an evacuation center?

_____ YES _____ NONE. IF YES, what were the damages? _____

5. What did you do with regards to the damages? _____

6. When the school is used as an evacuation center, how does this affect the following?

School Children? _____

You as a teacher? _____

Other school personnel? _____

7. What are the problems you face when the room is used as an evacuation center?

8. What were the effects of disaster in your school? _____

9. How did you cope with the effects of disasters? _____

10. How did you catch up with the lessons missed due to suspension of classes as a result of

disaster? _____

11. Do you have alternative classroom used when the classroom is destroyed or used as an

evacuation center? _____ YES _____ NONE. If YES, where? Please describe the

alternative classroom. _____

12. Do you see any positive or good effects of disasters in your school? ____ YES ____NONE.

IF YES, what are they? _____

C. Roles, Assessment and Recommendations

1. As a teacher, how do you prepare when you know that there would be a typhoon?

2. On a scale of 1 to 4, please encircle how often do you do the following when there is a disaster:

1 - Never 2 - Sometimes 3 - Often 4 - Always

a. Make room assignment on where the families should stay	1	2	3	4
b. Get the names of the families	1	2	3	4
c. Assess the damages in the school	1	2	3	4
d. Give food, clothing and other relief	1	2	3	4
e. Fix damages in the school	1	2	3	4
f. Solicit funds for the affected families	1	2	3	4
g. Coordinate with different agencies	1	2	3	4
h. Teach the children and families about disasters	1	2	3	4
i. Provide transportation to them	1	2	3	4

3. Do you agree that the school should be used as evacuation center? _____ YES _____ NO

Why? _____

4. IF the answer is NO, what could be the alternative evacuation center in your area? _____

5. What are your suggestions to minimize the negative impacts of disaster in your school?

6. Any other comments? _____

Thank you very much.

ANNEX B. The Principal-Led School Building Program

Chapter I. The Basics

“Principal-Led Scheme”

What Is Principal-led School Building Program (PL-5BP)?

PL-SBP decentralizes construction management through principal empowerment with the active participation of the community. The objective is to rationalize management responsibilities and accountabilities and accelerate DepEd decentralization of the school system while simultaneously building management capacity at the regional, division and school levels.



What are the key-player?

- The School - PrincipallSchool Head takes the lead role in implementing the SBP. He acts as contract manager and stakeholder-”owner’ representative responsible for planning and execution of the construction and rehabilitation projects under the DepEd-SBP. As *principal implementor*, he/she is directly responsible to the School Division Superintendent for the entire SBP implementation process from planning, execution, to turnover/acceptance of completed works. The school staff particularly the designated facilities coordinator take an actual role in monitoring construction work.

Specific Duties and Responsibilities:

- Plan and manage the implementation of the Principal-led SBP in the School;
- Issue/Advertise the invitation to-’Submit quotations;
- Organize the Construction Committee;
- Brief the Construction. __ Committee on the procurement procedures . . , _ including quotation evaluation, post-qualification and awarding;
- Sign Notices of A~ Contracts- and issue the Notice to Proceed;
- Oversee the work of the field: engineer in performing his supervision work over the Contractor;
- Review and sign requests for payments; engineer’s inspection reports; Statement of Work Accomplishments and Variation Orders;
- Conduct inspection of completed work jointly with the project engineer;
- Liquidate/settle cash if any; and
- Prepare and submit monthly performance reports and other required reports.

- The DepEd Regional and Division Office - are responsible for the overall supervision of the SBP in their respective areas of jurisdiction including management of funds at their level Through the Physical Facilities Coordinators. these offices monitor construction activities, conduct meetings for implementation problems and seek technical assistance from the project management office when necessary They also conduct random on-site inspection to verify the Certificates of Completion! Acceptance.

Specific Duties and Responsibilities

- a. Monitor and assess progress of the Principal-led SBP in the schools;
 - b. Facilitate the issuance and/or increasing of bonding of school heads for the purpose of SBP cash advances;
 - c. Facilitate fulfillment of requirements such as proof of evidence of site ownership;
 - d. Conduct site monitoring visits to schools;
 - e. Assist in resolving implementation problems;
 - f. Assist in the conduct of inspection. acceptance and turn over of completed works; and
 - g. Facilitate processing of liquidation of cash advances and issuance of clearances pertaining to such cash advances.
- The DepEd Central Office through the PFSED and the Accounting Division oversees nationwide operations; provides the necessary guidelines/training; provides technical support to the principals; and manages the funds.

Specific Duties and Responsibilities

- a. Develop guidelines and manuals;
- b. Prepare standard technical working drawings; agency estimates; bill of quantities, as well as standard quotation documents and other forms;
- c. Launch the Principal-led SBP;
- d. Assign and orient project engineers;
- e. Monitor and assess progress;
- f. Assist in resolving implementation problems;
- g. Manage the funds and process payments; and,
- h. Liaise with the DPWH, DBM, WB and other agencies.

Duties and Responsibilities of DepEd Project Engineers (DPE)

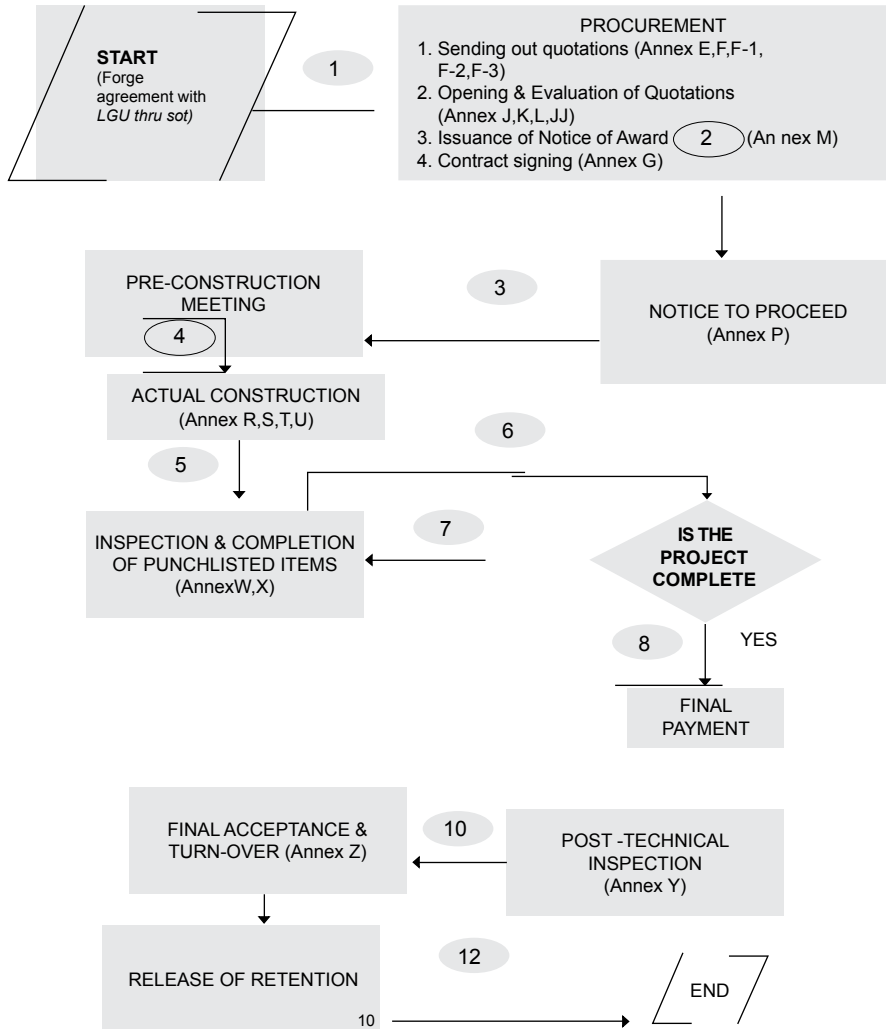
- a. Based on site investigation, prepare and determine scope/schedule of work. If contracted, review and recommend for approval, the scope and schedule of work submitted by the contractor;
- b. Organize ready made plans, drawings, bill of quantities, material specifications, and cost estimates that match the schedule of works;
- c. Assist the School Construction Committee in filling up and completing ready-made ready-to-use quotation documents;
- d. Assist the School Construction Committee in opening of quotations, quotation evaluation, and recommending awards;

- e. Assist the Principal/School Head in processing contracts and issuance of Notice to Proceed;
 - f. Assist the Principal/School Head in supervising the work of contractors; conduct regular-on-site monitoring to ensure quality of work;
 - g. Review/Validate Work Accomplishment Report of the Contractor, billings for payment; as-built plans submitted request for Variation Orders submitted by the Contractors;
 - h. Conduct Inspection and prepare Punch List on completed Works and recommend acceptance and removal of completed buildings; and,
 1. Conduct regular site inspection, prepare weekly Engineer's Inspection Reports for each school and submit to the PFSED.
- The School Physical Facilities Coordinator (SPFC) designated by the principal/school head with knowledge on building construction and acts as the guardians of the target beneficiaries by being active and vigilant in helping the principal/school head to complete the project not only on schedule but according to the plans and needs of the students.
 - The Parent-Teacher Community Association (PTCA) or any authorized representative shall act as observers during the conduct of procurement.
 - The Local Government Unit (LGU) shall provide support/assistance to the schools' construction committee by signifying interest through signing a Statement of Interest Form (Annex KK).

The LGU support can be made in any of the following manner:

1. Provide assistance in the demolition of existing structure during preparation of the site;
2. Provide assistance in site leveling preparation or site improvement;
3. Provide fencing to the school compound;
4. Provide water or electrical facilities;
5. Provide technical assessment on the condition of the existing water and electrical facilities;
6. Forge commitment for the annual repair and maintenance to existing classrooms; and
7. Any other kind of assistance related to the improvement of school facilities.

Principal-Led SSP Flow



Chapter II. How To Do It

“Applying the Basics”

A complete cycle of the PL-SBP implementation consists of three stages: Pre-Construction; Construction and Post-Construction.

L Pre-Construction Stage



A. Site Appraisal and Building Plans

Upon receipt of the Final List of Recipient Schools, PFSED sends engineers to visit the recipient schools and inspect the proposed site/classrooms whether it is feasible for new construction or repair. This is important to lessen any variations orders that may occur during actual construction. The Principall School Head with the DepEd Project Engineer however should check on the following important

Requirements:

- > Certified Copy/Proof or Evidence of Site Ownership in the form of any of the following:
 - Transfer Certificate of Title (TCt)
 - Deed of Donation
 - Deed of Sale
 - Usufruct Agreement
 - Tax' Declaration in the name of DepEd, provided that there are no adverse claims on the subject school site

- > Assurance of Allotment from the Accountant

When these requirements are met, the follow forms are accomplished to obtain the data necessary to prepare the technical drawings and estimates:

- Site Appraisal Report Form (Annex A) - contains basic information about the school e.g, student population, site information, feasibility (repair or new construction). previous projects on the school and the like.
- Specimen Signature Card (Annex B) - contains names and specimen signatures of persons who will be involved in the process.

B. Orientation of School Heads and other Implementors

To prepare the implementors for their respective roles on the PL-SBP DepEd Central Office through PPSED conducts orientation seminar-workshops for Superintendents, Physical Facilities Coordinators, Accountants and Principals. Foremost, the seminar aims to: (1) orient implementors on the rudiments of the PL-SBP, including procurement and construction management p~; (2) equip them with basic knowledge on on-site construction, this includes a quick brush-up on the *Different Parts of a School Building* (Annex C)~ (3) provide helpful tips on construction supervision (see Annex D - *A Principal's Guide to On-Site Monitoring and Construction of School Buildings*); and (4) prepare documents needed for national shopping procurement and construction supervision, i.e. detailed engineering plans and schedule of activities.

C. Forging of Commitments between CC and the LGU

The school head/principal will take the lead in coordinating with the local government unit for the possible assistance they can contribute in the improvement of school facilities through signing of Statement of Interest Form (AnnexKK).

D. Procurement of Works

1. Forming the Construction Committee (for National Shopping)

The school head/principal forms the Construction Committee (CC) composed of the School PFC (*as designated by the school head/principal*) and Division PFC as members with the school head/principal as the chairperson. The DPE serves as the CC's resource person/technical consultant. The committee shall be responsible for the procurement of the school's civil works fro~ pre-procurement to recommendation of award.

2. Procurement Procedure using the National Shopping Method

National Shopping is a procurement method that is based on comparing price quotations obtained from several suppliers/contractors, usually at least three, to assure competitive prices and an appropriate method for standard specification commodities that are small in value. For PL-SBP procurement of works, the whole process usually takes place from 24-29days (*see PL-SBP Procurement Activity Schedule*), unless problems “rise, e.g. less than three (3) offerors/bidders showed up or the whole process is. failure and has to be done again, etc.

Schedule of Procurement Activities for Principal-Led SBP	No. of Days
a. Preparation of Quotation Documents (QD)	1
b. Pre-Procurement Conference	1
c. Advertisement	
d. Submission of Letter of Intent	
e. Study/Fulfillment of Requirements/Accomplishment of Forms in the Quotation Documents by the Contractor	7
f. Pre-Submission of Quotation Conference	1
g. Request for clarification in writing about the provisions in Dissuance of addenda or bid bulletin	7
h. Submission and Opening of Quotations	1
i. Post Qualification Evaluation	2
j. Approval of RTA k. Issuance of NOA2	1-7
l. Contract preparation/approval/signing	2
m. Issuance of NTP	1
n. Pre-Construction Meeting	
TOTAL	24-29

a. Preparation of Quotation Documents (1 day)

Assisted by the DPE, the school head/principal shall prepare the following documents in preparation for the procurement of works using the national shopping method:

a.1 Detailed engineering plan documents consist of program of works, bill of quantities (or detailed estimates), plans and specifications, and construction schedule.

a.2 Quotation Documents consisted of the following:

- Invitation to Submit Quotations (Annex E)
- Instruction in Submitting Quotations (Annex F)
- Quotation Data Sheet (Annex F-1)
- Quotation Form (Annex F-2)
- Post Qualification statement Form (Annex F-3)
- Technical Specifications Form
- Contract Form (Annex G)



b. Pre-Procurement Conference (1 day)

Prior to the issuance/posting of the Invitation to Submit Quotation, a pre-procurement conference is held to finalize the above documents. The conference is attended by the Construction Committee, DPE and other officials who prepared the technical plans, the quotation documents and draft invitation as the case may be, as well as those who separately reviewed these documents prior to final approval.

c. Advertisement (7days)

Widest dissemination of the ‘Invitation’ shall be done to encourage participation from all prospective contractors. The ‘Invitation’ will be conspicuously posted anywhere in the following public places:

- School
- School’s District Offices
- Municipal/City Hall
- Barangay Hall
- Public Market
- DepEd Division/Regional Office
- DPWH Office
- Other conspicuous places

Offerors/Bidders may be asked to pay for the QD to recover the cost of its preparation and development at a reasonable cost. The Construction Committee shall issue the QD upon payment of the corresponding cost thereof to the collecting/disbursing officer assigned in the school or at the division office.

d. Submission of Letter of Intent (LoI) (within the 7-day duration)

Before a QD could be sold to a contractor, he/she shall be required to submit an LoI addressed to the chairperson of the Construction Committee.

e. Preparation/fulfillment of Requirements of QD by the Contractor (within the 7-day duration)

Offeror/Bidder upon receipt of the QD thoroughly studies the document and starts to accomplish the forms and secure the requirements needed as:

- Affixing of contractor’s signature in every page of the ISQ including the Quotation Data Sheet and pro-forma Contract Form
- Accomplished Quotation Form
- Accomplished Post Qualification Statement

- Conduct of Site Inspection (a Site Inspection Certificate will be submitted for this purpose and shall form part of the QD)
- Technical Specifications
- Securing of an appropriate Bid Security
- Submission of Construction Schedule
- Accomplished Summary of Program of Works
- Accomplished Bill of Quantities (Detailed Estimates)
- Addenda (if there is Offer/Bid Bulletin)

This meeting is purposely held to clarify matters regarding the QD.

Minutes of meeting will be recorded and within seven (7) days any agreement/s reached will be reflected in an addenda or bid bulletin to be released to all interested offerors/bidders. The bid bulletin will form part of the QD when ofTcror/bidder submits his/her offer to the Construction Committee. As specified in the ISQ, an ofTcror/bidder may opt not to attend this conference but he/she will be informed accordingly of the changes/modifications made in the QD ifthere are any.

f. Pre-Submission of Quotation Conference (1 day)

g. Submission and Opening of Quotations (1 day)

At the specified time, date and venue, opening of quotations from at least 3 or more offerors/bidders will take place in the presence of their representatives and the Construction. Committee. In the interest of transparency, observers like the Division Auditor, NGO's or a representative of a local government unit may be invited to witness the event. The price quotations will be recorded in the Abstract of Quotations (Annex 1). The chairperson of the committee is discouraged from making any announcements as to the lowest offer or the winner in said undertaking. If there are deviations from the requirements, e.g. insufficient or lack of bid security, unfilled quotation form, etc. of QD these will be recorded accordingly under '<remarks' of the Abstract of Quotations.

The documents listed below shall constitute the QD to be submitted by the offerors/bidders:

1. Legal Documents

- a) Valid CAB license
- b) Tax Clearance Certificate (issued by the BIR national Office)
- c) Special Power of Attorney for Authorized Representative
- d) Statement. from the contractor that he/she is not "blacklisted"

- e) Statement from the contractor that he/she is not related to the head of the procuring entity by consanguinity or affinity up to the third civil degree
- f) Letter authorizing CC to verify documents submitted

2. Technical Documents

- a) Plans and Specifications
- b) Bill of Quantities (Detailed Estimate)
- c) Construction schedule
- d) Manpower Equipment Schedule
- e) Record of similar works for the last three (3) years t) Post-qualification information
- g) Contract form.
- h) Site visit certificate
- i) Addenda or bid bulletins, if any

3. Financial Documents

- a) Audited financial statements for the last three (3) years
- b) ITR with BIR stamp
- c) Cash flow

4. Bid Security

5. Quotation Form (reflecting the offer on a lump sum amount)

- Bid Security shall be in the form of a Cashier's or Manager's Check, Irrevocable Letter of Credit or Unconditional Bank Guarantee(Annex I) from a reputable banking institution, equivalent to two and a half (2.5%) percent of the total quoted price.

During the opening of quotations, a checklist will be used for the purpose of routine checking of the legal, technical, financial requirements. A sample form is attached, see Annex J1.

In the event that the required number (at least three) of quotations is not met, the quotations will be returned to the offerors/bidders sealed and unopened. A new schedule will be set and prospective contractors will be invited again.

h. Post Qualification Evaluation (within 2-day duration)

After the Opening of Quotations, all offers that have been accepted for detailed examination shall undergo post qualification evaluation to determine the contractor who offers the lowest calculated responsive price quotation for the required work. and who has the experience and resources to complete the contract successfully.

The evaluation shall be conducted by the Construction Committee, with the assistance from the OPE. Whenever needed, a special committee will be called on to examine the financial/technical capability of the offerors,

Using the Post Qualification Evaluation Form (Annex K), the contractor's general eligibility documentary requirements shall be reviewed/verified. The prospective contractor must be a duly registered and licensed civil works contractor, having an Inter-Agency Category (IAC) for Buildings and Industrial Plants found on the lower right corner box of their PCAB license. The annual amount of similar projects completed for the last three years should at least be 50% of the value of the contract under consideration.

The contractor's Project Manager Project Engineer Foreman experience on similar projects shall be reviewed based on their respective resumes or curriculum vitae. Their experience should equal or exceed the requirements on the instructions in submitting quotations.

The contractor's financial capacity or liquid assets shall be evaluated based on the latest Audited Financial Statements, balance sheet, profit loss statement, evidences to financial resources, submitted with the quotation. The liquid assets and/or credit facilities of the contractor should be at least equal to the contract amount under consideration (*see ISQ Section 3/ for details*).

The Construction Committee, with assistance from the DPE, shall also conduct an ocular inspection of the prospective contractor's office, ongoing and completed projects and contractor's equipment. The contractor's bank accounts or credit facilities shall also be verified accordingly. The contractor's performance will also be deeply looked into through its track record.

This whole process should be treated in strictest confidence. Any effort by Q bidder/ offeror to influence the Construction Committee's processing of bids/offers or award decisions may result in the rejection of the bidder's/offeror's bid/offer (ISQ Section 25).

i. Issuance! Approval of RTA (within 2-day duration)

After determining the awardees, an RTA (see Annex L for format) is prepared. The RTA is a summary of events that led to the awarding of the contract. It is important for the CC to remember that the Owner/Purchaser reserves the right to reject any and all offers, declare a failure of bidding, or not award the contract ... (see ISQ Section 37 for details).

j. Issuance of NOA

The CC will notify the selected contractor (see Annex: M for format). The non-winners will also be notified in writing (see sample ‘Regrets ‘Letter’ Annex N). The NOA already serves as a binding agreement leading to the perfection of a contract. Through the NOA, the School Head Principal will require the Contractor to submit the following within 7 days from acceptance of the NOA:

- Performance Security in the form of a Cashier’s or Manager’s Check, Irrevocable Letter of CREDIT (Annex F-6), Unconditional Bank Guarantee (Annex: 0), equivalent to ten percent of the Contract Price.
- Construction Schedule

Bid securities of unsuccessful bidders should be returned promptly after an award has been made. However, if contract effectiveness is contingent on the receipt of a Performance Security or other conditions, the Construction Committee may consider seeking an appropriate extension of time for the bid validity and the accompanying bid security of the next two lowest bidders.

k. Contract Preparation/Approval/Signing (within 2-day duration)

Following the attached Contract Form, the School Head Principal with the assistance from the DPE and the Contractor discuss the terms and conditions, reach an agreement, then finally sign the contract. The contract shall be submitted to the Division Office for the approval of the Division Superintendent. A copy of the approved contract must be forwarded to PFSED office through the DPE.

l. Issuance of NTP (within 2-day duration)

Contractor is notified to commence construction work via the NTP (see Annex: P for format). The Construction Committee shall issue the NTP to the Contractor within two (2) calendar days from the date of approval of the contract. All notices called for by the terms of the contract shall be effective only at the time of receipt thereof by the contractor.

m. Pre-Construction Meeting (1 day)

The meeting shall be attended by the contractor, OPE, the Construction Committee, Accountant and shall be presided over by the PFSEO representatives. The purpose of this meeting is to discuss the conditions of the contract and to elaborate the

responsibilities of each person involved in the process. Any expected issues or problems that may arise during construction proper maybe raised by either the contractor or the principal and proposed solutions shall be concluded in the meeting. The highlights of the meeting shall be recorded.

II, Construction Stage

After identifying the contractor and conduct of Pre-Construction Meeting, construction phase begins. The Principal School Head together with the OPE must oversee the project making sure that all aspects stated in the Contract as well as the Plans and Specifications and Construction Schedule (see Annex Q: Standard Construction Schedule) are Complied and strictly adhered to.

The Principal/School Head shall observe the following critical stages of construction:

- a. layout
- b. installation rebars.
- c. concrete pouring of foundation posts
- d. concrete pouring of floor slab
- e. installation of rafter system
- f. installation of electrical fixtures



1. Statement of Work Accomplishment-SWA (Annex R) -- is prepared by the Contractor to support claims for payment (progress billing). The percentage of actual accomplishments as confirmed by the DPE and the Principal/School Head.

2. Certificate of Payment (Annex S) - additional requirement for the billing of the Contractor upon his request for payment to be accomplished by the OPE and approved by the Principal/School Head.

3. Variation Order (Annex T) - prepared by the OPE for any changes needed for the project during actual construction without any changes in the Contract Cost The variation order should conform with the following Guidelines on Variation Order Processing:

- a. A Variation Order may either be in the form of a Change Order or Extra Work Order;
- b. A Change Order maybe issued by the implementing official to cover any increase/ decrease in quantities of original work items in the contract;

- c. An Extra Work Order maybe issued by the implementing official to cover the introduction of new work necessary for the completion, improvement or protection of the project which were not included as items of work in the original contract;
- d, Variation Orders whether Change Order or Extra Work Order shall only be allowed provided that the sum of aggregate amount does not exceed twenty percent (20%) of the original contract price;
- e. Extra Work Orders with an aggregate amount exceeding twenty percent (20%) of the original contract price shall be subject of another contract to be procured in the same manner as the original contract;
- f. Unit prices of work items covered by the Variation Order shall be based on the direct unit costs used in the original contract which shall then be combined with the mark-up factor (indirect cost) used by the contractor in his quotation/detailed estimate;
- g. Supplemental Agreement is no longer allowed;
- h. The approving authority for all Variation Order Request endorsed by the OPE shall be:

Principal School Head - for variation orders with a sum of an aggregate amount not exceeding ten percent (10%) of the original contract price;

Division Superintendent -for variation orders with an aggregate amount beyond ten Percent (10%) but not exceeding twenty percent (20%) of the original contract price;

4. Site Instructions (Annex U) - issued by the OPE and noted by the School Head/Principal, these forms serve as a formal communication of the Owner to the Contractor for whatever instructions, remarks or comments the Owner wants to raise to the Contractor during the process. Using the prescribed forms, the Division Offices shall closely monitor construction work, provide assistance to non-performing schools and report/recommend good performance.

5. Punchlist or completion of at least 95% of work (substantially completed), the contractor shall request for a final inspection. The Inspection Team, headed by the Principal/School Head with the SPFC and Corrective Works Inspection Report (Annex W) Upon authorized representatives of the Division Office as members, shall be assisted by the OPE to verify defective and remaining work items. A 'punch list' shall be prepared based on SWA and all deficiencies and corrective works are listed on the 'Punch list Form'. The Principal/School Head shall officially inform the contractor of the "punch listed" items and the prescribed period of time for rectification/s, which should be within 15 calendar days from date of issuance of 'punch list",

6. Certificate of Competition. (Annex -X) - When rectifications are completed, the CC shall inspect the completed work and shall sign the Certificate of Completion. The Principal issues the Certificate of Completion and can take over the site immediately.

The DepEd-PFSED and Regional Offices shall conduct spot-checking and on-site monitoring and technical support to ensure compliance with procurement procedures, specifications and timetable.

As a guide during inspection, a complete school building IS defined as classrooms with:

- a. cemented floor
- b. smooth finished walls
- c. painted walls, ceiling and roofing
- d. full cathedral-type ceiling (for single storey construction) or drop ceiling (for multi-storey building) or insulation ceiling (for modified design single storey building)
- e. complete set of windows (2 facing walls)
- f. two entrances with doors
- g. complete electrical wires and fixtures
- h. roofing or weather protection
- i. blackboard

HI, Post Construction Stage

This phase begins after the Certificate of Completion has been issued to the Contractor. The Contractor then guarantees the project for 365 calendar days. After which, the DPE will conduct an inspection of the project to verify further defects that may appear during the period. Otherwise, the Principal/School Head shall accept the project in full and good condition. Consequently, the Principal/School Head and the Division Physical Facilities Coordinator shall sign the Certificate of Acceptance.

The following documents are used, they serve as requirements for the release of the retention money to the Contractor:

1. Certificate of Post-Technical Inspection (Annex Y) - form used for the inspection of the Inspectorate Team after the Guarantee Period to verify and validate any defects that might have appeared within the prescribed period
2. Certificate of Acceptance (Annex Z) - issued to the Contractor by the Principal/School Head to certify that the project has been turned over to the school in good condition.

Upon the Principal/School Head's acceptance of the project, it is his/her responsibility and the faculty as well as the students using it, for its care and maintenance to avoid abrupt deterioration of the building.

IV. Payments

Payments shall be by progress billing (minimum of 20% accomplishment). The contractor bills DepEd Division office or in school (for schools with autonomy) through the Principal/School Head according to the provisions of the contract (see Flow of Funds for details). The following documents must be submitted by the contractor as attachments for his claim for progress billing:

Supporting Documents

Mobilization (15%) (Optional)

- Request for Advance Payment (AP)
- Signed Contract
- NOA
- NTP
- Unconditional Bank Guarantee, Managers' Check or Letter of Credit equivalent to the advance payment

Progress Billing

- Billing of Contractor Letter Request
- Certificate of Payment (COP)
- Approved Program of Works and Specs
- SWA (original)
- NOA(original)
- NTP (original)
- Signed Contract
- Photographs of Accomplishment
- Official Receipt of Contractor (OR)

Final Billing

- Billing of Contractor Letter Request
- COP
- NOA(photocopy)
- NTP (photocopy)
- SWA
- Signed Contract (photocopy) Photographs of Accomplishment (Before and After)
- Approved Program of Works and Specs
- Previous COPs

Construction

- As-Built Drawings Plans for New
- Certificate of Completion
- Official Receipt of Contractor (OR)
- Previous Vouchers

Note: Release of Retention - the Contractor may claim his retention money after the expiration of the Defects Liability (Warranty) Period or:

- (a) upon satisfactory compliance to requirements of Certificate of Completion, half of the retention money shall be released to the Contractor; or
- (b) when the Contractor opts to substitute the remaining half with a bank guarantee in the same amount 30 days after issuance of Certificate of Completion; or
- (c) upon Owner's issuance of the Certificate of Acceptance, which comes three hundred sixty five (365) calendar days after issuance of the Certificate of Completion, the remaining half may be released.

The AP shall be repaid by the Contractor by deducting fifteen percent (15%) from his periodic payments (15% Recoupment)

Statement of Expenditures (SOE)

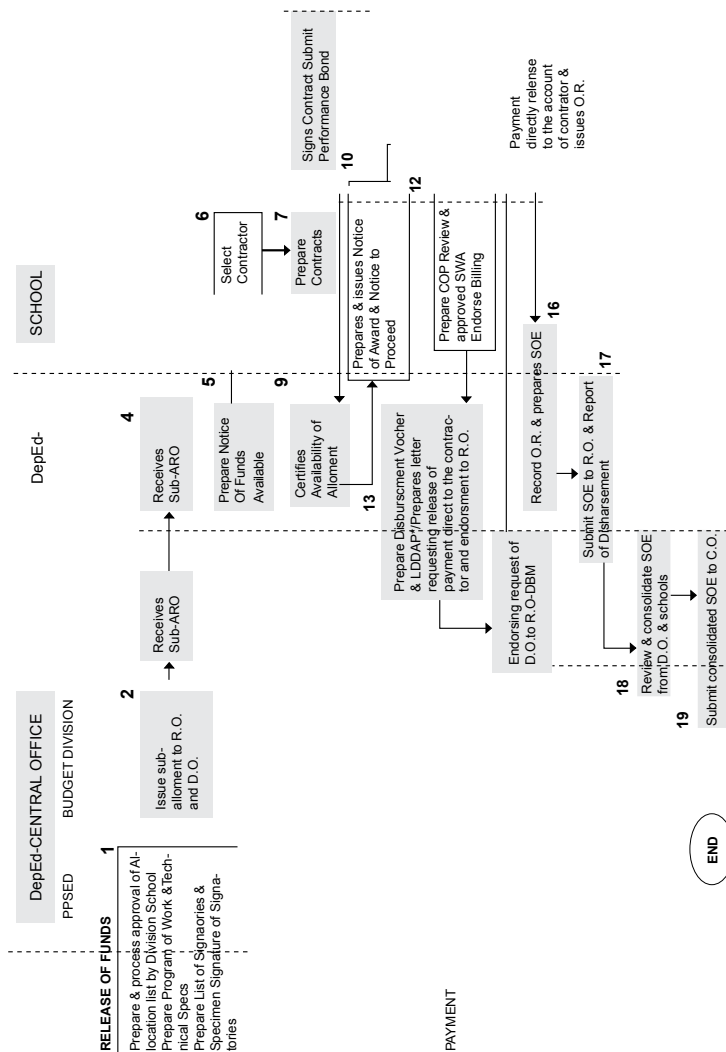
The above payments shall be reflected in the SOE (Annex AA) accomplished by the Division Accountant, forwarded to the Regional Accountant for consolidation and submitted to the DepEd Central Office Accounting Division on a monthly basis. Following is the procedure for SOE preparation:

1. Prepare SOE per category
2. Fill out the necessary information for each column:
 - a. SOE No. - the number that can be readily identified to facilitate identification in any related correspondence. It should be numbered consecutively within a year
 - b. Name of Payee - name of contractor/supplier/creditor
 - c. Contract Number - give full reference to ensure that the contract can be readily identified. In case there is no contract number, ALOBS number will suffice
 - d. Recipient School- name of school
 - e. Brief Description - description of the transaction, particulars in the Voucher
 - f. Contract Amount- value of contract
 - g. Total Previous Payments - total cumulative payments made
 - h. Amount - amount of invoice covered by the SOE

- i. Check Number number of the check paid to the contractor/supplier/creditor
- J. Date of Check - date of payment to the supplier
- k. Balance for payments - contract amount less previous payments and amount covered by this SOE (f-g-h = k)
- I. Remarks - any statements/comments worth noting in relation to the disbursements

Post Occupancy

During this phase, the impact of the delivery of service using the PL-SBP scheme to stakeholders is determined through a conduct of a survey (details are discussed in the next chapter).



Chapter III. Keeping Track of the Performance

“Monitoring and Reporting Requirements”

An important aspect of project implementation is the monitoring and evaluation of performance and outcomes, for three reasons:

1. whether the project is being implemented in accordance with the schedule (timeliness);
2. whether the project is being completed in accordance with the plans and specifications (quality); and
3. whether the project is being completed in accordance with the limits set by its specific budget (cost).

For this purpose, the Principal-led scheme shall have a built-in monitoring and evaluation mechanism to determine the efficiency and effectiveness of implementation at various stages.

I. Pre-Construction Stage

The information on the procurement process is gathered through the Procurement Activity Form (Annex BB) and is accomplished by the DPE. It records dates of various phases of procurement. This will indicate if the procurement is on schedule and follows the guidelines set forth. Copy of the following documents are immediately submitted to the PFSEO Office upon commencement of construction for post review:

- Invitation to Submit Quotation
- Quotation Form
- Abstract of Quotations
- Post-Qualification Information
- Post-Qualification Evaluation
- RTA
- NOA
- Contract
- NTP

Wide dissemination of information; competition and transparency will also be assessed.

II. Construction

1. The progress of construction at the schools is reported through the Project Accomplishment Report (Annex CC) as accomplished by the OPE. The reported positive and negative slippages indicate the need for management action. This form is submitted to the DO and PFSED Office every 10th and 25th of the month.

2. The school reports are consolidated in the Division Monitoring Report on Principal-Led SEP (Annex DD). This monthly status report is accomplished by the Division PFC. The DO consolidates all reports received from the schools and submits them to the regional office on or before the 15th day of the following month.

3. Division reports are consolidated by the Regional Office using the Regional Monitoring Report on Principal-Led SBP (Annex EE). The regional office shall submit the Regional report to the PFSED Office on or before the 21st day of the following month. PFSED prepares the National SBP reports to comply with the requirements of oversight agencies as well as inform management of overall performance and action.

Based on the above reports, assessment will focus on areas that are encountering or have encountered significant implementation problems, that result have resulted in the delay of the completion of the project Remedial measures in the form of special instructions/orders will be issued. The execution of said instructions/orders will be closely monitored by the School Head in coordination with the Regional Division PFC and DPE.



m. Post Construction Stage

Post construction evaluation focuses on the outcome (structure); performance (contractor) and the process. The forms to be used are:

1. Principal-Led SBP Completion Report (Annex FF) - accomplished by the school head/principal after the completion of the project in order to evaluate and assess overall project implementation and impact This Completion report should be submitted to the DO seven (7) days after the issuance of the Certificate of Completion (Annex X). to be consolidated by the division PFC every end of the month.

2. Contractor's Evaluation Questionnaire (Annex GG) - to be accomplished by the school head/principal this will serve as an overall indicator of the kind of performance the Contractor has rendered. A 'failing rate' would be a ground for the contractor's inclusion in the blacklist.

3. Post Construction Activity Form (Annex HH) - accomplished by the OPE, the form records important dates of each post-construction activity. This will indicate if the project was done in accordance with the construction schedule. A strictly adhered to schedule will indicate that the service (provision of classroom) was delivered on time. The extent transparency and the effective communication strategies used will also be considered.

4. Post-Occupancy Evaluation (Annex II)

To be filled out by the teachers and students randomly picked by the school head/principal, this survey tool will provide information about the experiences and satisfaction levels of the stakeholders. Information obtained from this study can help highlight areas of strength and at the same time detect weaknesses that can be used to improve the implementation of the SBP.

Data gathered from the survey will be used as a determinant in coming up with policy decisions that center on continuous improvement on the delivery of service that will make the most difference and have a strong impact on satisfaction .



ANNEX C: Cost of DepEd School Buildings

COST OF DepEd SCHOOL BUILDING

COST COMPUTATIONS

$$\text{TPC} = \text{DC} + \text{IC} + \text{AEO}$$

$$\text{DE} = \text{MC} + \text{LC}$$

$$\text{IC} = 0.210 * (\text{DC})$$

$$\text{CT} = 0.210 * (\text{DC} + \text{IC})$$

$$\text{AEO} = 0.035 * (\text{DC} + \text{IC} + \text{CT})$$

WHERE,

TPC - Total Project Cost

DC - Direct Cost

IC - Indirect Cost

CT - Contractor's Tax

AEO - Administrative and Engineering Overhead

MC - Material Cost

LC - Labor Cost

SBP 2007 Costing Compared to Previous SBPs

ITEM	PREVIOUS SBPs	SBP 2007
Materials	NCR Price	Regionalized
Labor	Man Hour	Percentage of Material Cost
Overhead	5%	5%
Contingencies	2.5%	3%
Miscellaneous	1%	1%
Profit	12%	12%
Tax	10%/12%	12%
AEO	3.5%	3.5%

COST PER TYPE OF BUILDING PER REGION

REGION	7 x 7 m			7 x 9 m MODIFIED		
	1 CL	2 CL	3 CL	1 CL	2 CL	3 CL
CAR	447,000	870,000	1,275,000	545,000	991,000	1,453,000
ARMM	440,000	803,000	1,179,000	506,000	922,000	1,352,000
CARAGA	442,000	804,000	1,180,000	505,000	920,000	1,349,000
NCR	483,000	878,000	1,288,000	500,000	1,007,000	1,476,000
Region I	446,000	814,000	1,196,000	511,000	934,000	1,371,000
Region II	438,000	796,000	1,170,000	501,000	911,000	1,338,000
Region III	438,000	797,000	1,171,000	502,000	913,000	1,340,000
Region IV-A	489,000	891,000	1,310,000	562,000	1,025,000	1,506,000

COST PER TYPE OF BUILDING PER REGION

REGION	7 x 7 m			7 x 9 m MODIFIED		
	1 CL	2 CL	3 CL	1 CL	2 CL	3 CL
Region IV-B	502,000	916,000	1,348,000	579,000	1,056,000	1,552,000
Region V	497,000	903,000	1,327,000	569,000	1,037,000	1,524,000
Region VI	449,000	816,000	1,198,000	512,000	923,000	1,367,000
Region VII	444,000	807,000	1,185,000	507,000	922,000	1,352,000
Region VIII	459,000	836,000	1,227,000	524,000	954,000	1,401,000
Region IX	456,000	829,000	1,217,000	521,000	948,000	1,391,000
Region X	448,000	817,000	1,199,000	513,000	935,000	1,371,000
Region XI	434,000	790,000	1,159,000	496,000	903,000	1,324,000
Region XII	450,000	817,000	1,199,000	514,000	934,000	1,370,000

COST PER TYPE OF BUILDING PER REGION

REGION	7 x 9 m ORIGINAL Design			Other Buildings		
	1 CL	2 CL	3 CL	Multipurpose building	Science Laboratory Building	LAPUS Building
CAR	609,000	1,111,000	1,628,000	1,683,000	1,723,000	
ARMM	573,000	1,045,000	1,533,000	1,592,000	1,607,000	
CARAGA	569,000	1,038,000	1,522,000	1,592,000	1,599,000	
NCR	617,000	1,125,000	1,650,000	1,675,000	1,711,000	
Region I	575,000	1,053,000	1,545,000	1,603,000	1,612,000	
Region II	562,000	1,025,000	1,505,000	1,570,000	1,586,000	
Region III	566,000	1,033,000	1,517,000	1,584,000	1,594,000	
Region IV-A	630,000	1,151,000	1,692,000	1,718,000	1,741,000	

COST PER TYPE OF BUILDING PER REGION

REGION	7 x 9 m ORIGINAL Design			Other Buildings		
	1 CL	2 CL	3 CL	Multipurpose building	Science Laboratory Building	LAPUS Building
Region IV-B	647,000	1,182,000	1,738,000	1,756,000	1,772,000	
Region V	636,000	1,161,000	1,706,000	1,705,000	1,747,000	2,300,000
Region VI	571,000	1,040,000	1,525,000	1,596,000	1,602,000	
Region VII	565,000	1,029,000	1,509,000	1,584,000	1,602,000	
Region VIII	589,000	1,075,000	1,577,000	1,638,000	1,659,000	
Region IX	587,000	1,070,000	1,569,000	1,627,000	1,652,000	
Region X	573,000	1,057,000	1,550,000	1,611,000	1,629,000	
Region XI	557,000	1,016,000	1,490,000	1,567,000	1,577,000	
Region XII	581,000	1,059,000	1,554,000	1,609,000	1,639,000	

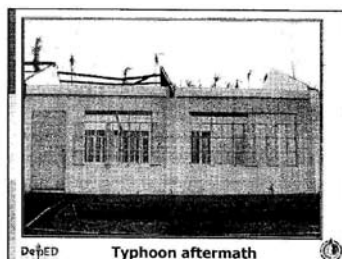
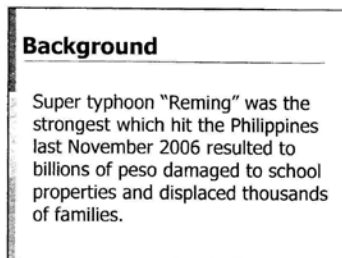
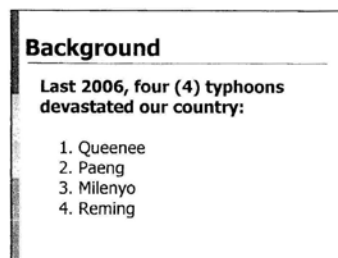
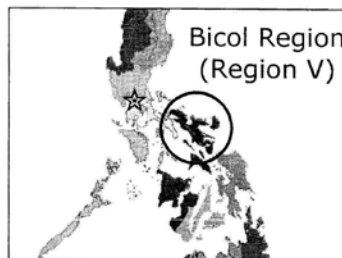
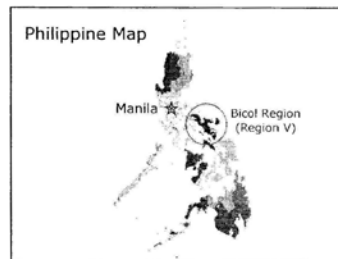
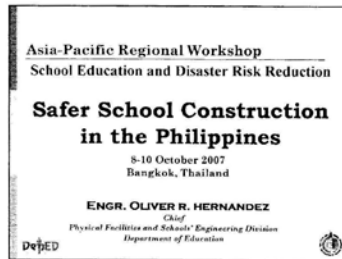
COST PER TYPE OF BUILDING PER REGION

REGION	Standard Multi- storey Schoolbuildings				
	2 Sty 2 CL	2 Sty 4 CL	2 Sty 6 CL	2 Sty 8 CL	3 Sty 9 CL
CAR	2,065,000	4,269,000	5,717,000	7,951,000	9,490,000
ARMM	1,900,000	3,943,000	5,291,000	7,358,000	8,781,000
CARAGA	1,910,000	3,966,000	5,323,000	7,398,000	8,822,000
NCR	2,032,000	4,000,000	5,644,000	7,851,000	9,353,000
Region I	1,880,000	3,913,000	5,253,000	7,306,000	8,697,000
Region II	1,929,000	4,012,000	5,383,000	7,493,000	8,977,000
Region III	1,892,000	3,930,000	5,271,000	7,334,000	8,776,000
Region IV-A	2,029,000	4,000,000	5,647,000	7,857,000	9,391,000

COST PER TYPE OF BUILDING PER REGION

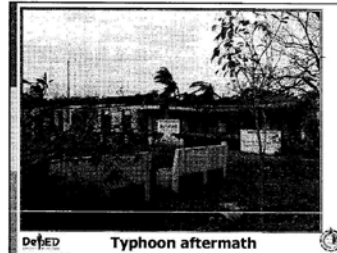
REGION	Standard Multi- storey Schoolbuildings				
	2 Sty 2 CL	2 Sty 4 CL	2 Sty 6 CL	2 Sty 8 CL	3 Sty 9 CL
Region IV-B	2,047,000	4,000,000	5,709,000	7,943,000	9,501,000
Region V	2,031,000	4,000,000	5,662,000	7,885,000	9,368,000
Region VI	1,930,000	3,995,000	5,359,000	7,453,000	8,946,000
Region VII	1,930,000	3,944,000	5,291,000	7,358,000	8,825,000
Region VIII	1,967,000	4,073,000	5,464,000	7,602,000	9,098,000
Region IX	1,950,000	4,043,000	5,424,000	7,544,000	9,027,000
Region X	1,893,000	3,928,000	5,271,000	7,329,000	8,767,000
Region XI	1,861,000	3,864,000	5,182,000	7,204,000	8,575,000
Region XII	1,936,000	4,000,000	5,365,000	7,462,000	8,940,000

ANNEX D: Safer School Construction in the Philippines





DePED Typhoon aftermath



DePED Typhoon aftermath

Government's Response

- **Implementation of the Safe Schools Program**

The Safe Schools Program is a program which aims to respond to the call for help of schools in calamity stricken areas. The program has two components:

 1. **Structural**
 2. **Non-structural**

1. Structural Components

- Under this component, the Philippine Government will implement the following projects:
 - **Construction of Hazard Resilient School Building**

The project was ushered by the birth of the Learning and Public Use School (LAPUS) Building.

1. Structural Components: Mainstreaming DRR in Education project

- Component on Study on Impacts of Disasters on the Education Sector in the Philippines
- Focused on Recommendations for ensuring integration of DRR in school construction for safer schools
- Presentation at the National Advocacy Workshop in 2008

1. Structural Component

- **Build Better Be Better**

a project which aims to get the latest cost effective and well designed construction of school buildings through a design competition which will be participated in by interested Architects all over the world. The winning design will be constructed in Bicol Region.

1. Structural Component

- **Assessment of Schools Water and Electrical Facilities.**

To date, the Department came up with a total of about Php700,000,000.00 for the repair and rehabilitation of water and electrical facilities of about 1,450 participating schools

1. Structural Component

- **Assessment of Schoolbuilding's Structural Integrity and Stability (A.S.I.S.T.)**

The Department trained 127 Civil Engineers to undertake the Disaster Quick Response Project.

1. Structural Component

- Implementation of the Calamity Assistance and Rehabilitation Efforts (CARE) which has responded to a total of 13,473 recipient schools
- Institutionalization of the School Mapping Exercise through the GIS-Based School Profiling System

2. Non Structural Component

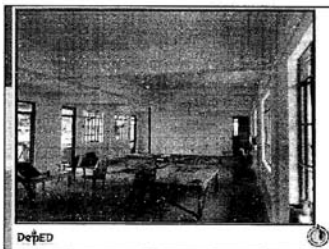
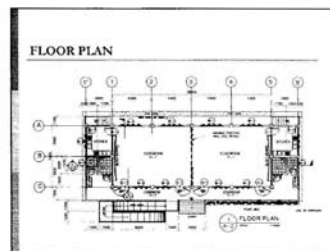
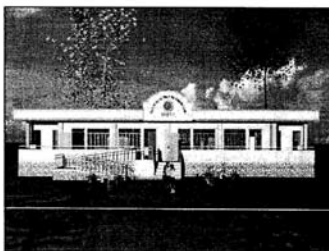
- Mainstreaming Disaster Risk Reduction Concepts in the Basic Education Curriculum;
- Material production on disaster risk reduction through multi-media in partnership with other government agencies and private sector

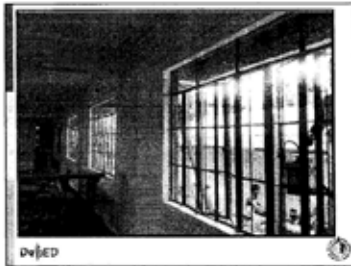
2. Non-Structural Component

- Preparation of Disaster Risk Reduction Resource Manual;
- Road Safety in Schools;
- Quarterly Conduct of Earthquake Drills/Fire and Evacuation Drills in Schools

2. Non-Structural Component

- Communication Plan for the Impending Dry Spell and La Nina Phenomenon
- Preparation of Modules and Lesson Exemplars on Disaster Risk Reduction in Science and Araling Panlipunan subjects, an ADPC assisted project.





BASIC FEATURES – LAPUS BUILDING	
A. Basic Structure	Reinforced concrete
B. Roof Framing	Reinforced concrete beams
C. Exterior Finish	
1. Roof	Reinforced concrete slab with water-proofing
2. Eaves	Exposed slab with paint finish
3. Walls	6" CMH and plain cement plaster with paint finish
4. Windows	Steel-encased clear glass windows with grilles and paint finish
5. Doors	Steel doors on steel jambs with paint finish

BASIC FEATURES – LAPUS BUILDING	
D. Interior Finish	
1. Flooring	Reinforced concrete slab with plain cement finish
2. Ceiling	Exposed slab with paint finish
3. Partition	Movable ordinary plywood panel with paint finish
E. Electrical Provisions	Complete with basic lighting fixtures and outlets

TECHNICAL HIGHLIGHTS
<ul style="list-style-type: none"> <input type="checkbox"/> Typhoon/Earthquake/Flood Resistant Building; <input type="checkbox"/> "All-concrete" structure; <input type="checkbox"/> Finished Floor line is 1.5 meter high on natural ground elevation <input type="checkbox"/> With 2 kitchens and 4-seater comfort rooms on both ends; <input type="checkbox"/> Conformance to the Building Code "accessibility law for the disabled"; <input type="checkbox"/> With provision for 2nd Floor roof deck;

SPECIAL FEATURES
<ul style="list-style-type: none"> <input type="checkbox"/> Can be utilized as classrooms and evacuation center during calamities; <input type="checkbox"/> Can be used as multi-purpose hall for special functions of the school and community; <input type="checkbox"/> Can accommodate 63 students/classroom or at least 12 families; <input type="checkbox"/> Estimated life span of more than 50 years.

More to build...
<ul style="list-style-type: none"> <input type="checkbox"/> 19 LAPUS Schoolbuilding under CARE (Calamity And Rehabilitation Effort) Project <input type="checkbox"/> 11 LAPUS Schoolbuilding donated by The Netherlands (UNICEF)

Thank you very much.

"Maraming Salamat po..."

ANNEX E: Recommended Structural Detailing Practices



PERSPECTIVE VIEW

TABLE OF CONTENTS	
ARCHITECTURAL	
1. FLOOR PLAN (SEE 2.000)	I
2. ROOF PLAN (SEE 3.000)	II
3. SECTION (SEE 4.000)	III
STRUCTURAL	
4. FOUNDATION (SEE 5.000)	IV
5. ROOF (SEE 6.000)	V
ELECTRICAL	
6. ELECTRICAL (SEE 7.000)	VI
BANITARY	
7. BANITARY (SEE 8.000)	VII




DESIGNED BY: **MAESTRO CONSULTANTS**

DESIGNED BY: **MAESTRO CONSULTANTS**

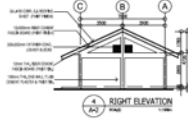
DESIGNED BY: **MAESTRO CONSULTANTS**

DESIGNED BY: **MAESTRO CONSULTANTS**

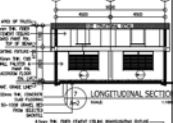
DESIGNED BY: **MAESTRO CONSULTANTS**



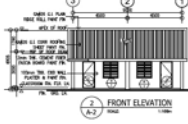
LEFT ELEVATION



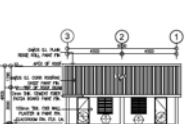
RIGHT ELEVATION



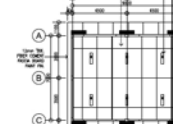
LONGITUDINAL SECTION



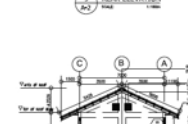
FRONT ELEVATION



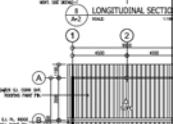
REAR ELEVATION



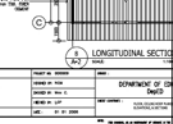
LONGITUDINAL SECTION




CROSS SECTION



LONGITUDINAL SECTION



LONGITUDINAL SECTION



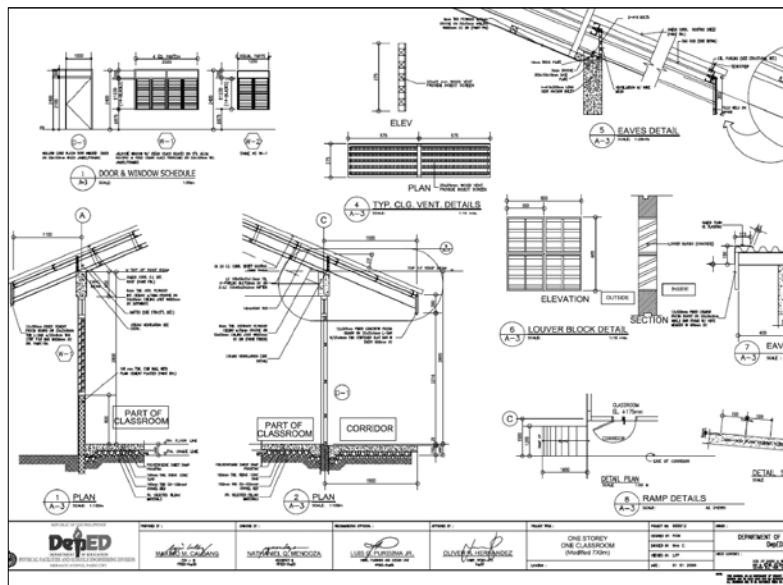
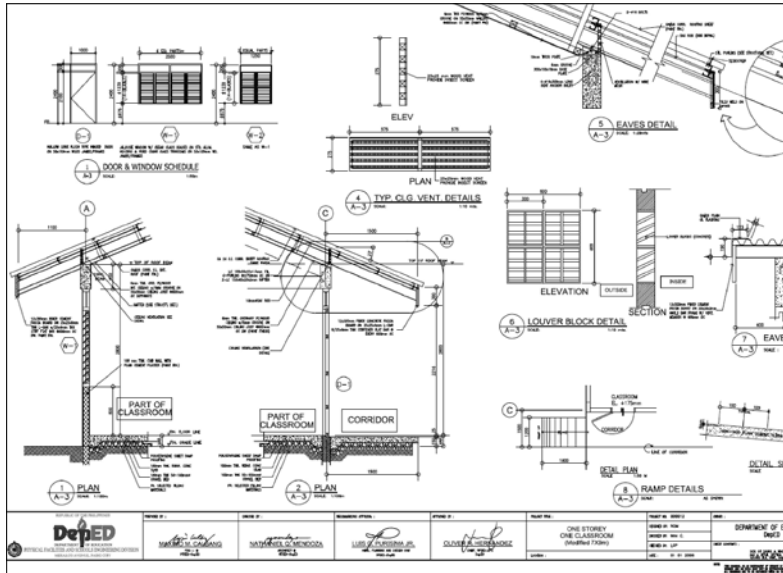
DESIGNED BY: **MAESTRO CONSULTANTS**

DESIGNED BY: **MAESTRO CONSULTANTS**

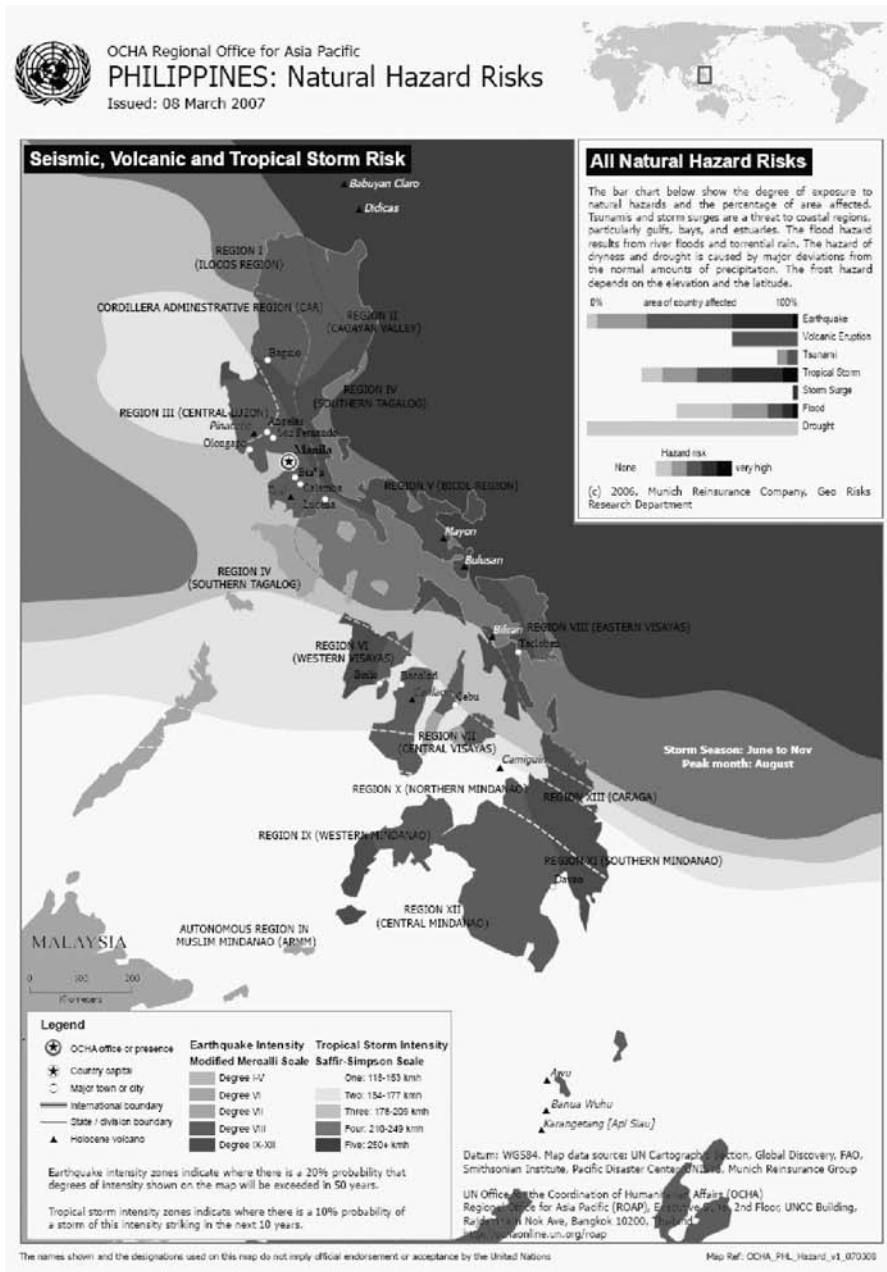
DESIGNED BY: **MAESTRO CONSULTANTS**

DESIGNED BY: **MAESTRO CONSULTANTS**

DESIGNED BY: **MAESTRO CONSULTANTS**



ANNEX F: Natural Hazard Risks in Philippines



EUROPEAN COMMISSION



Humanitarian Aid

The **European Commission Humanitarian Aid department (ECHO)** was set up in 1992 to provide rapid and effective support to the victims of crises outside the European Union. Recognizing the importance of pre-emptive measures, ECHO launched its disaster preparedness programme, DIPECHO, in 1996. ECHO's disaster preparedness programme (DIPECHO) targets vulnerable communities living in the main disaster-prone regions of the world and aims to reduce the vulnerability of the population. Between 1996 and 2004, DIPECHO provided more than €78 million for 319 projects worldwide. These demonstrate that simple and inexpensive preparatory measures, particularly those implemented by communities themselves, are extremely effective in limiting damage and saving lives when disaster strikes. DIPECHO funds support training, capacity-building, awareness-raising and early-warning projects as well the organisation of relief services. The programme has shown that even simple precautions can help save lives and property when disaster strikes. The funds are directed through ECHO and implemented by aid agencies working in the regions concerned. *For more details, please visit http://ec.europa.eu/echo/index_en.htm.*



The **United Nations Development Programme (UNDP)** UNDP is the UN's global development network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. It is on the ground in 166 countries, working with them on their own solutions to global and national development challenges. Its current priority is to help all countries achieve the Millenium Development Goals (MDGs) by 2015. *For more information, please visit www.undp.org.*

adpc

The **Asian Disaster Preparedness Center (ADPC)**, established in 1986 is a regional, inter-governmental, non-profit organization and resource center based in Bangkok, Thailand. ADPC is mandated to promote safer communities and sustainable development through the reduction of the impact of disasters in response to the needs of countries and communities in Asia and the Pacific by raising awareness, helping to establish and strengthen sustainable institutional mechanisms, enhancing knowledge and skills, and facilitating the exchange of information, experience and expertise. *For more details, please visit <http://www.adpc.net>.*

