Mainstreaming Disaster Risk Reduction in the Education Sector in Cambodia

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

April 2008

National Committee on Disaster Management
Ministry of Education, Youth and Sports
EUROPEAN COMMISSION Humanitarian Aid
UNDP
adpc

MAINSTREAMING

OF DISASTER RISK REDUCTION IN THE EDUCATION SECTOR IN CAMBODIA

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- Study on Impact of Disasters on the Education Sector
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Bangkok: ADPC April 2008

Execution of this study was undertaken by:

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LIST OF ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ADPC	Asian Disaster Preparedness Center
CESSP	Cambodia Education Sector Support Project
CMDG	Cambodia Millennium Development Goals
CR	Cambodian Riel
DRR	Disaster Risk Reduction
ECHO	European Commission Humanitarian Aid
EIC	Economic Institute of Cambodia
EMU	Emergency Management Unit
ESDP	Education Strategic Development Plan
ESP	Education Strategic Plan
ESSP	Education Sector Support Program
ESWG	Education Sector Working Group
FTI CF	Fast Track Initiative Catalytic Fund
MDRD	Mainstreaming Disaster Risk Reduction into Development
MoEYS	Ministry of Education, Youth and Sports
MoLMUPC	Ministry of Land Management, Urban Planning, and Construction
MPWT	Ministry of Public Works and Transport
MRD	Ministry of Rural Development
NCB	National Competitive Bidding
NCDM	National Committee for Disaster Management
PIP	Priority Implementation Partnership
PRD	Pedagogical Research Department, MoEYS
RCC	Regional Consultative Committee
RGC	Royal Government of Cambodia
SNAP	Strategic National Action Plan
TWG	Technical Working Group
UNDP	United Nation Development Programs
UNDMT	United Nation Disaster Management Team
US$	United States Dollar
WB	World Bank
WFP	World Food Program

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 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 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 of 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, NDCC Philippines together with respective Ministry's 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. 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. 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 have 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 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.

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.

Except the DRR modules developed under this project, there is no educational program on integrating DRR into 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 of all 3 countries have endorsed the DRR module. The letters of endorsement/ proposals for integration are annexed.

Teaching of the DRR module: Starting from October 2007, DRR module was taught in class rooms 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	10	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**	

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

Monitoring of Teaching: Teaching of the DRR module in class rooms 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 by organization of a School Safety Day including 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.

During school safety day at the pilot schools in 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 have 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.

Table 2/ Outputs/ Indicators of the Project

	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 = 30

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 are 484 students with 242 girls and (164) officials and teachers in Lao PDR who have participated in awareness raising, training and have been 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 class rooms. In addition 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 class rooms. A TOT has added (75) more beneficiaries that include teachers, trainers and education officers. In addition, the Secretary of Office of Civil Defense and the Undersecretary of DepEd actively participated in the National Workshop.

Study on impact of disasters: Three studies on 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 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 into the reports.

The draft study papers were show cased 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 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 show case 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 2008 in Manila

Officials from 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 UNICEF, UNDP and representatives from NGOs such as World Vision, Save the Children Federation, Oxfam GB, Action Aid, Lao Red Cross, World Concern and Oxfam Australia and other development partners such as Jica, AusAID, MRC, GTZ, 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:

- Show casing the results and the experience from the implementation of the project on mainstreaming disaster risk reduction in the education sector (MDRD Education).
- Show casing 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.

During the workshop, the participants were divided into groups to discuss on further curriculum development and next steps to be undertaken by 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 catered for 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.

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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 would be emphasized through presentations and interactions. Representatives also made presentations and share 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 have 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 Forums:

In addition the results of the project have been show cased internationally for further consultation with stakeholders:

- The project was show cased at the Global Platform for DRR, Geneva 4-8 June 2007
- The project activities were show cased 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 show cased 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 of 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 into 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 show cased 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 the priority area 3.2.

- All the 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 Philippines 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 the disaster risk reduction practitioners and governments; as well as among the government agencies.

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

MDRD project has developed a good model for mainstreaming of 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 (SCA). 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 of 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 into 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 on 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 Support Implementation of Flood Preparedness Program at Provincial, District and Commune Levels in the Lower Mekong Basin, 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 Support Implementation of Flood Preparedness Program at Provincial, District and Commune Levels in the Lower Mekong Basin project were also selected under the MDRD Education project to ensure synergy. In Cambodia, the Teachers Information Kit and the Flood Booklet from the Flood Emergency Management Strengthening 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) into 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) MDRD EDUCATION PROJECT IN CAMBODIA

The MDRD Education project was implemented in Cambodia in close coordination with the National Committee for Disaster Management (NCDM) and the Ministry of Education, Youth and Sports (MoEYS). There have been close interactions with a number of key stakeholders. These stakeholders include MoEYS, NCDM, United Nations Development Program (UNDP) Cambodia, Pedagogical Research Institute and Cambodia Education Sector Support Project (CESSP). The MOEYS formed a Project Technical Working Group to implement the project activities. Project working group (PWG) meetings were regularly held and chaired by Under Secretary of State, MoEYS. The PWG members were from Education Sector Support Project, Pedagogical Research Department of MOEYS, ADPC and UNDP. Technical working group was also formed to review the existing secondary curriculum with the officials from pedagogical research department, National asset unit and construction unit from Department of Planning, MOEYS.

DRR Module: There was no major educational program or curriculum related to DRR in Cambodia before this project. To develop the curriculum three technical working group meetings were held with experts to develop the DRR module. ADPC provided the base materials and technical inputs.

Now DRR related topics have been integrated under the MDRD Education project (Phase I) in the subjects of Earth Study and Geography for Grade 8. The topics have been integrated into the regular chapters of the text. A separate student textbook has been developed which covers hazards such as floods, drought, earthquake, hurricane etc. The module has exercises for the children to test their understanding. The module also explains the mitigation for major hazards, especially floods. In addition the module explains the Do's and don'ts for a disaster situation.

A number of technical working group meetings were held to revise the draft DRR module and teacher's manual after feedback from teaching and the workshop. A more detailed Student textbook has added, with additional chapters on earthquake and hurricane. MOEYS has removed the chapter on deforestation. This was done to balance the time with the new topics that have been added. The final DRR module is integrated in Grade 8 into the subject "The Earth" which covers 8 chapters and the subject "Geography" which covers 12 chapters. The main chapters cover:

- Floods
- Volcanic Eruption
- Earthquake and Hurricane
- Drought
- Deforestation

The final DRR module is integrated in Grade 8 into the subject "The Earth" which covers 8 chapters and the subject "Geography" which covers 12 chapters.

In addition a Teacher's Manual has been developed to guide the teacher.

In addition a Teacher's Manual has been developed to guide the teacher during the teaching. This manual gives suggestions on the time for each lesson, material to be used, activities for the students and the teaching method.

Contents

Grade	Subject	Chapter No.	Topic No.	Name of chapter	Objective	Integrated to:	Duration	Pedagogy	Contents
Eight	Geography	1	Unit 3: Asia – A weak environment	Flood disaster	Learn causes and mitigation measures for floods	Chapter 1: General characteristics of SE Asia	10 minutes	Questions, discussion, pictures	1. Impacts of floods
Eight	Geography	2	Unit 4: Natural Milieu of SE Asia	Flood risks	Learn precautions from floods	Chapter 1: General characteristics of SE Asia	10 minutes	Questions, discussion, pictures	1. Protection measures
Eight	Geography	3	Unit 6: Environment of SE Asia	Flood risks (contd.)	Learn impact of floods and risks & precautions	Chapter 1: General characteristics of SE Asia	10 minutes	Questions, discussion, pictures	1. Preventive measures
Eight	Geography	4	Unit 6: Natural milieu of Myanmar	Role of forests in flood risk reduction	Learn advantages of vegetation to prevent floods,	Chapter 2: Myanmar	10 minutes	Questions, discussion, pictures	1. Means of flood risk reduction with example of Myanmar
Eight	Geography	5	Unit 14: Natural Milieu of E Asia	Types of floods and mitigation measures	Learn types of floods in Cambodia	Chapter 4: General characteristics of E Asia	10 minutes	Group discussion, pictures	1. Advice to avoid flood risk
Eight	Geography	6	Unit 17: People & environment in E Asia	School flood mitigation measures		Chapter 4: General characteristics of E Asia	10 minutes	Questions, discussion, pictures	1.Role of school after receiving flood warning, and as a evacuation shelter/ safe area
Eight	Geography	7	Unit 14: Natural Milieu of China	Advice to avoid flood risk	Learn to avoid floods	Chapter 5: China	10 minutes	Questions, discussion, pictures	1. Advice to avoid flood risks
Eight	Geography	8	Unit 21: Environment of China	Coastal floods	Learn about coastal floods	Chapter 5: China	10 minutes	Questions, discussion, pictures	1. Coastal floods
Eight	Geography	9	Unit 22: Natural Milieu in S Asia	Flood & drought	Learn about causes of flood and drought, in relation to S Asia	Chapter 6: South Asia	10 minutes	Questions, discussion, pictures	Flood and Drought general concepts
Eight	Geography	10	Unit 24: People & environment in S Asia	Impacts of floods	Learn about impacts of floods	Chapter 6: S Asia	10 minutes	Questions, discussion, pictures	1. Impacts of floods
Eight	Geography	11	Unit 26: Natural Milieu of India	Floods disaster & types of floods	Learn about types of floods, in relation to geography of India	Chapter 7: India	10 minutes	Questions, discussion, pictures	1. Floods and their types
Eight	Geography	12	Unit 28: Economy of India	Starvation due to droughts & floods	Learn about economic impact of floods and droughts	Chapter 7: India	10 minutes	Questions, discussion, pictures	1. Impact of floods and drought
Eight	Geography	13	Unit 1: The Earth	Types and impacts of floods	Learn the types and impacts of floods	Chapter 1: The Earth & the Moon	10 minutes	Questions, discussion, pictures from textbook page 1-2	1. What is flood 2. Types of floods 3. impacts of floods
Eight	Geography	14	Unit 2: The Earth in space	Flood risks		Chapter 1: The Earth & the Moon	10 minutes	Questions, discussion, pictures	1. Depth and current 2. flash flood 3. Un foreseen Risks

Grade	Subject	Chapter No.	Topic No.	Name of chapter	Objective	Integrated to:	Duration	Pedagogy	Contents
Eight	Geography	15	Unit 1: The moon, The Earth & Sun	What adults must do to protect children	Learn do's and don'ts for helping children	Chapter 1: The Earth & the Moon	10 minutes	Questions, discussion, pictures	The steps to protect children
Eight	Geography	16	Unit 1: The crust of the Earth	Volcanic eruptions	Learn the causes and impacts of volcanic eruptions	Chapter 1: The Structure of the Earth	10 minutes	Questions, discussion, pictures	1. How eruptions are caused. 2. What is the impact
Eight	Geography	17	Unit 2: The motion of the Earth	Earthquake and hurricane	Learn about earthquakes in the region, hurricanes, typhoons and tsunami	Chapter1: The Structure of the Earth	10 minutes	Questions, discussion, pictures	1. Earthquakes in the region 2. Hurricanes & typhoons 3. Undersea EQ and tsunami, El Nino
Eight	Geography	18	Unit 3: The axis of the Earth	EQ and volcanic eruptions	Learn about crust of the earth and relation to EQ	Chapter1: The Structure of the Earth	10 minutes	Questions, discussion, pictures	1. Impact of EQ and volcanoes in ASEAN region
Eight	Geography	19	Unit 1: Types of rock	Volcanic eruptions	Types of rocks and role in eruptions	Chapter4: Rock	10 minutes	Questions, discussion 1. Types of rocks	2. Earth structure in volcanic eruptions

An extract from the teachers manual is as below:

Part 2: SOUTHEAST ASIA

Chapter 1: General Characteristic of Southeast Asia
Unit 4: Natural Milieu of Southeast Asia

- **Mainstreaming Concept:** Coastal, River and Rain Flooding, and Child Protection Measures
- **Mainstreaming Aspect:** Questions for Discussion
- **Objectives:**
  - The students will be able to tell about geographical location, land status, climate and water ways in Southeast Asia;
  - The students will be able to identify water ways flowing across the countries in Southeast Asia;
- The students will be able to describe about the river, costal and rain flooding; and,
- The students will be interested in preventing and be aware of taking care of themselves during flood.
- Materials:
- Map and pictures in the student's book, page 14-17, published in 1998
- Teacher's book, page 14-16, published in 1998
- Map of Asia
- Flood's posters and protection measures during flood
- Flood booklet, page 12-15 and a book on "Measures to save children from being drowned and health care during flood", page 10.

- **Duration: 10 minutes**

- **Teaching Methodology:**
  - In this unit, there are three mainstreaming questions (geographical situation, hydrographs and climate in Southeast Asia) for discussion given by the teacher for the students to discuss which are linked to questions 2 and 3 in the student's book on pages 15-17.
  - The teacher divides the students into three groups, one question in each group

- **Questions for discussion**

1. Can coastal area have flood? What does it like? How does it happen?

- **Answer:**

There can be flooding in the coastal area. It comes about as soon as the sea tide pushes water from the ocean, gulf or sea straits to the mainland, which happens due to sea storm in combination with tropical storm, typhoon, tsunami and sea waves, making many areas along the seashores flooded.

2. Has the Cambodian Mekong River route ever been flooded? What is river flooding?

- **Answer**:

The Cambodian Mekong River route has been frequently flooded. It is a natural phenomenon and a seasonal cause. Particularly in rainy or monsoon season as there is too much heavy raining, much water flows to fill river basin quickly. The Mekong River flooding occurs in a number of provinces located along the river and other rivers such as Steung Treng, Kratie, Kampong Cham, Kandal, Prey Veng, Kampong Chhnang, and Takeo province and Phnom Penh city.

3. How can rain water contribute to flooding? What can be done to protect children during flood season?

- **Answer:**
  - When there is a heavy rainfall, flood occurs. It is called rain flooding or local flooding that flows to some certain areas. But it does not increase the water of major rivers.
  - When flood comes, we must protect children by:
    - holding child's hand to dry, safe land during raining;
    - not allowing children to swim in strong current water or in swirling water;
    - making fence to prevent children from going into water and always looking after them;

- arranging boat for transporting children to school;
- preparing life saving jackets or floating equipments for children whenever they get out of the home;
- evacuating children to a safe place following the instructions of the Red Cross or medical personnel;
- reducing speed of motorboat when approaching smaller boats; and,
- never playing or walking near collapsed riverbank that has a strong current of water.

The student textbook and the teachers manual are available at www.adpc.net

TOT and Training: Training program was organized for teachers from the three selected schools during 20-22 September 2007 in Phnom Penh, Cambodia. Total numbers of participants were thirty two and they were teachers from the pilot schools, provincial and district education officers, school principals and trainers from teacher's training centre. In addition Prey Veng and Kandal Provincial Committee for Disaster Management and District Committee for Disaster Management officials also joined the training. The main focus of the training program was to provide guidelines for writing lesson plans, choose lessons for teaching, demonstrate teaching techniques in the classroom, make teachers teach demonstration class and take feedback on the curriculum.

MOEYS and ADPC organized additional training of teachers (TOT) for (12) teachers from three districts in Kratie province, (24) teachers from six districts in Kandal, (12) teachers from three districts of Prey Veng province and (18) provincial and district officers, and 61 teachers from 21 districts of Takeo, Kompong Chhnang and Kampong Cham province.

Teaching of the Module: For the purpose of validation, the target provinces were Kandal, Prey Veng and Kratie provinces. The schools were selected by the Government of Cambodia. ADPC provided technical input but in the interests of ensuring buy in of the government, for ensuring mainstreaming and for ensuring sustainability beyond the project life the country was given the liberty to choose schools according to its perception of risk and priority. Thus, in total DRR module was taught in (10) schools from (5) districts under (3) provinces.

The schools, where the testing of the DRR module was conducted were:

Table 3/ Total pilot schools in Cambodia

Name of Province	Name of district	List of schools for pilot testing of DRR	Number of schools in each province
Kandal	Leoukdek district	■ Bunranny Hun Sen Peam Raing high school	2
	Lovea –Em district	■ Peam Okhna Ong secondary school	

Table 3/ Continued...

Name of Province	Name of district	List of schools for pilot testing of DRR	Number of schools in each province
	Kratie district	■ Sombok secondary school ■ Bosleav secondary school ■ Krakor secondary school ■ Preksaman secondary school ■ Rokakandal secondary school	5
Number of schools in proposal			3
Additional schools covered			7
Total schools in (3) provinces			10

In Sombok Secondary school and Krakor Secondary School, DRR was taught in collaboration with Action Aid, Cambodia.

In Kratie province the schools covered under European Commission Humanitarian Aid III project were also selected under the MDRD Education project to ensure synergy.

School Safety Day: This was conducted in 3-pilot schools in Cambodia; Peam Okhna Ong school and Bunranny Hun Sen Peam Raing school in Kandal province and Prek Krabao secondary school in Prey Veng province. 268 students (with 102 girls) participated in all the activities. The results showed below average performance for only 10% of the students. This clearly shows that the students understood well the newly integrated DRR module. The level of interest in learning about DRR is high in students and teachers.

Outcomes: In total 847 students (239 girls) in Kratie, Kandal and Prey Vong Provinces have been taught the DRR integrated module. In addition, 143 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 9 pilot schools, have been trained on the DRR module. The Senior Minister of the MOEYS participated in the Workshop and contributed to the outcomes.

In total 847 students (239 girls) in Kratie, Kandal and Prey Vong Provinces have been taught the DRR integrated module. In addition, 143 officials and teachers have been trained on the DRR module.

Study on Impact of disasters: This was conducted by Economic Institute of Cambodia, in close coordination with MOEYS, NCDM and with supervision of ADPC. The study explained that in Cambodia the MoEYS must seek inter-ministerial and inter-departmental cooperation and collaboration with the MPWT, the Ministry of Post and Telecommunication and other relevant institutions, which is needed for implementing the holistic approach of DRR. It has been demonstrated that floods not only damage the school buildings but also create communication or access problems and sometimes result in the school being used as a shelter. Since disasters not only disrupt education but often cause indirect impacts (e.g., damaging roads, stop using the school for education, hindering access to the school for pupils), such collaboration is very much required in order to develop resilient infrastructures and communication means like roads, and flood shelters. The study shows that during floods the students are absent from school from 1.5-2.5 months and around 40-50% of total drop-out of students is due to floods.

Till the 1990s, most schools in Cambodia were built without proper compliance to an acceptable standard. Actually, there were no standards or specifications from the Ministry of Land Management, Urban Planning and Construction (MoLMUPC), or the MoEYS over the technical norms of building construction. The typical school building plan and technical specifications that are in use nowadays were only developed and compiled as guidelines during the implementation of ADB funded Emergency Flood Rehabilitation Project (EFRP) during 2001-03 and WB funded Flood Emergency Rehabilitation Project (FERP) during 2001-04.These guidelines are project specific and till date there are no general guidelines for safer school construction.

The study suggested that DRR and/or "Safer construction of school buildings" should be an integral part of the Education Strategic Plan (ESP) and Education Sector Development Plan (ESDP) as well as the long term Strategic Plan of the Education Sector so that the safe schools or safe school buildings are achieved in the goals and objectives. However, there is a lack of linking DRR or safer school construction with the Strategic Plan, which needs to be addressed by the senior policy makers of MoEYS.

The study is available at www.adpc.net

National workshop: The third activity, the Advocacy Workshop on Mainstreaming Disaster Risk Reduction into the Education Sector, aimed to raise awareness and build consensus and commitment of the Ministry of Education, Youth & Sports and other related Ministries in Mainstreaming of Disaster Risk Reduction into 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 MOEYS in the aftermath of a disaster.

Similarly, though school buildings are assets of the Department of Education, often they are built by other departments such as Public Works, or donor designated construction agencies. Hence raising their awareness for the necessity of disaster resilient construction and revising standard school designs is necessary to achieve the primary goal of reducing risk from hazards. The workshop attempted not only to showcase the success and experience of integration of DRR module into the education curriculum but also focused on the need for hazard resilient construction and other actions to reduce impacts of disasters in the education sector.

The workshop was a 2 day event that intended to orient the officials from MOEYS, 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 of Education Sector. In addition, representatives from the UNDP, UNICEF, World Bank, JICA, ActionAid and media were invited to the workshop.

Workshop Objectives:

- To show case the results and the experience from the implementation of the project on mainstreaming disaster risk reduction in the education sector (MDRD Education).
- To show case the recommendations of the study on the impacts of disasters in the education sector, 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.

Agenda of the Workshop
Ministry of Education, Youth and Sports (MOEYS), NCDM, ADPC and UNDP
Supported by ECHO
Date: 19-20 March 2008
Venue: Cambodiana Hotel, Phnom Penh

Wednesday, 19th March 2008

Time	Session/ Discussion
	Opening session / Chair: MOEYS
8.00 am to 9.00 am	Welcome speech: Mr. Leang Nguon Ly, Deputy Director General of Education, MOEYS
9.00 am to 9.10 am	Opening Remarks by Mr. Khun Sokha, Director General Training NCDM
9.10 am to 9.20 am	Remarks by UNDP (Mr. Scott Cunliffe, Regional Disaster Risk Advisor)
9.30 am to 9.40 am	Opening Remarks by ADPC (Mr. Loy Rego)
9.40 am to 09.50 am	Opening remarks by H.E. Chea Se, Under Secretary of State, MOEYS
09.50 am to 10.00 am	Group Photo
10.00 am to 10.15 am	Tea/Coffee Break
	Session on Integration of DRR in School Curriculum / Chair: NCDM
10.15 am to 10.30 am	Presentation on Background of RCC MDRD Program by ADPC (Mr. Loy Rego)
10.30 am to 10.50 am	Presentation on DRR Curriculum development – MOEYS & NCDM (Mr. Eng Kimly)
10.50 am to 11.10 am	National Research Institute for Educational Sciences (NRIES), Lao PDR (Dr. Keovivone)
11.10 am to 11.30 am	Department of Education, DepEd, Philippines (Dr. Corazon)
11.30 am to 11.45 am	Presentation by JICA on strategy for the education sector. (Mr. Mengheang Hor)
11.45 am to 12.00 pm	Discussion and feedback
12.00 pm to 1.00 pm	Lunch Break
1.00pm to 1.20 pm	Presentation by ActionAid (Mr. Leng Heng An)
1.20 pm to 1.40 pm	Presentation by FEMS (Mr. Thanongdeth)
1.40 pm to 2.30 pm	Group discussion on next steps for Curriculum
2.30 pm to 2.45 pm	Tea/Coffee Break
2.45 pm to 3.00 pm	Presentations by groups
3.00 pm to 3.15 pm	Concluding remarks and sum up by Chair

Time	Session/ Discussion
	"Hear the Children"
3.15 pm to 3.45 pm	"Lessons learned" by students from pilot test schools (Children and teachers talk about what they have learned from the DRR module), Poster demonstration
3.45 pm to 4.15 pm	Quiz (by students from pilot test school)
4.15 pm to 4.30 pm	Feedback and concluding remarks
7.00 pm	**Workshop Dinner**
Thursday, 20thMarch 2008	
	Session on Study of impact of disasters on Education Sector / Chair: MOEYS
9.00 am to 9.45 am	Presentation of study paper – MoEYS, NCDM (with assistance from EIC and ADPC)
9.45 am to 10.00 am	Presentation by School Construction Department (CESSP) Royal Government of Cambodia (Mr. Ou Eng, Deputy Director General of Education)
10.00 am to 10.15 am	Presentation by UNICEF
10.15 am to 10.30 am	Tea/Coffee Break
10.30 am to 11.00 am	Group Discussion based on Recommendations of the Country Study
11.00 am to 11.20 am	Presentations by Groups
11.20 am to 11.55 am	Panel Discussion
11.55 am to 12.00 pm	Concluding remarks and sum up by Chair
12.00 pm to 1.00 pm	Lunch Break
	Session on Next Steps / Chair: UNDP
1.00 pm to 1.30 pm	Presentation on future activities and up scaling (ADPC)
1.30 pm to 1.45 pm	Discussion and feedback
1.45 pm to 2.00 pm	Tea/Coffee Break
	Concluding Session
2.00 pm to 2.30 pm	Activity on Safety by School Children
2.00 pm to 2.10 pm	Summary of recommendations of workshop (MOEYS)
2.10 pm to 2.25 pm	Remarks by UNDP (Mr. Scott Cunliffe, Regional Disaster Risk Advisor)
2.25 pm to 2.35 pm	Remarks by NCDM
2.35 pm to 2.40 pm	Remarks by ADPC
2.45 pm to 3.00 pm	Concluding remarks by H.E. Kol Pheng, Minister, MoEYS, The Royal Government of Cambodia

WORKSHOP NOTES

1. The National Advocacy workshop in Cambodia was conducted on 19th to 20th March in Phnom Penh. Senior policy makers and officials from NCDM and MoEYS, Regional DRR advisor of UNDP, representatives from UN agencies and NGOs, provincial and district educational and disaster management officers from 25 districts, school principals, teachers and 15 students from 3 pilot schools participated. The total number of participants was 90.

2. Day 1: 19 March 2008

2.1 Inaugural:

The welcome speech was delivered by Mr. Leang Nguon Ly, Deputy Director General of Education, MoEYS. He welcomed the participants to Phnom Penh and welcomed the initiative to integrate DRR in the education sector. He emphasized commitment of the MOEYS and the Government of Cambodia to this initiative. The representative of NCDM, Mr. Khun Sokha Director General Training explained the role of NCDM in disaster risk reduction in Cambodia and the role in the MDRD Education project. UNDP Regional DRR Advisor stated the importance of mainstreaming DRR in the education sector and appreciated the commitment of the Government of Cambodia towards this end. This was followed by the opening remarks from the Director of ADPC. The Under Secretary of State, MoEYS explained the process of the project and emphasized the need for integrating disaster risk reduction in all the activities of the MOEYS. He appreciated the achievements of the project and urged for further follow up action.

3. Presentations on 19 March:

3.1 Mr. Loy Rego, Director ADPC made a presentation on "Background of RCC MDRD Program".

3.2 The next 3 presentations focused on the process and the lessons learned from development and testing of the DRR module, under the MDRD-Education Project, in Cambodia presented by Mr. Eng Kimly Deputy Director of Pedagogical Research Institute MoEYS, Lao PDR presented by Dr. Keovivone from NRIES, and the Philippines presented by Dr. Corazon of DepEd.

3.3 Before lunch there was one presentation from JICA on "JICA's cooperation in Education in Cambodia" presented by Program Assistant (Education and Governance) JICA. JICA's history of cooperation with MOEYS was presented with the following highlights:

1. Primary school construction: Phase 1 (2004-2005) and Phase 2(2005-2006)

Achievement in the primary school construction project in PP:

- Phase 1 (2004-2005): 5 buildings/ 111 equipped classrooms,
- Phase 2 (2005-2006): 6 buildings/ 113 equipped classrooms.

2. Technical Assistance (Education Planning Advisor, DoP)

3. JOCVs and SVs

- JOCV: Young volunteer
- SV: Senior Volunteer

4. STEPSAM: Secondary School Teachers Training Project in Science and Mathematics (2000-2005)

- Training to the trainers at National Institute for Education;
- Conducting experiments on Science and Mathematics
- How to produce and to use the teaching material

5. ISMEC: Improvement of Science and Mathematics Education in Cambodia (2005-2007)

- Curriculum: Grade 10 to Grade 12
- Textbook: Grade 10
- Teacher manual: Grade 10
- Capacity building to MoEYS

STEPSAM2: Science Teacher Education Project in Cambodia (Sep 2008- Oct 2012)
▪ Trainers training at Provincial Teachers Training College (PTTC) and Regional Teachers Training College (RTTC)
▪ Selection and training of NT

6. STEPSAM2: Science Teacher Education Project in Cambodia (Sep 2008- Oct 2012)

- Trainers training at Provincial Teachers Training College (PTTC) and Regional Teachers Training College (RTTC)
- Selection and training of NT
- Planning and preparation of TTC trainers training
- TOT for science trainers at 6 RTTC and 18 PTTC
- Materials development
- INSET for Science Teachers in pilot province (BTB and PV)

3.4 After lunch there was a presentation by Mr. Leng Heng An Communication & Documentation Officer from Action Aid on "Working through schools: Disaster risk reduction program in Cambodia". This emphasized how Action Aid is working with schools and the challenges. They used the DRR module developed under the MDRD Education project. Risk land game, quiz book, student book and teachers guide books developed under the program were show cased. The presentation highlighted that DRR related events should be held regularly in schools; and that flash cards, games and other visual aids are needed by teachers. Translation of DRR materials is also needed.

3.5 The next presentation was by Mr. Chum Vuthy of ADPC on "Developing the Capacity of Teachers and Educators in Flood Risk Reduction in Cambodia" under the FEMS project.

4. Group Discussions on Curriculum Development:

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

4.1 Group 1: Now the curriculum is developed what are the next steps to be done in Ministry of Education, Youth and Sports for full integration of the DRR module into the National Curriculum?

The suggestions were:

- MOEYS should issue a letter to endorse use of the DRR curriculum in the schools
- Need to organize TOT at regional and provincial levels
- Need to use more pictures in curriculum to make child friendly
- Bomb threat/land mines, snake bites, floods, droughts all should be incorporated into the existing curriculum
- Pictures in the module should be gender balanced.

4.2 Group 2: What material is already available both in government and non-government sector, which can be used to supplement the DRR curriculum? (Audio visual, work books, activity books, comics etc.)

- Materials available include:
  - Materials available include the booklet "Education and Bird Flu". There are also posters and game cards to supplement this publication.
  - "How to prevent HIV & STD" from MOEYS.
  - CRC book on "How to be safe from HIV and traffic accidents"
  - Oxfam publication on droughts and floods.
  - ADPC produced another booklet on "Living with floods"
  - UNICEF has developed a new curriculum on sanitation and printed 2000 copies for 19 provinces. So far 9 provinces have completed teaching the new curriculum
  - More visual aids need to be developed for teaching support-some posters have been developed by MoEYS

4.3 Group 3: What steps should be taken to introduce DRR in other classes, especially in the primary classes? What material is available for the introduction of DRR module into the Primary classes?

The comments are:

- Need to integrate in all classes.
- VCD and Posters need to be developed
- Story telling and pictures are best for children
- DRR should be taught to all grades of primary school
- Some materials are available with ActionAid. After editing MOEYS will use these materials for grade 4. 5 and 6. However, no decision is final yet

4.4 Group 4: Which national and provincial 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 recommendations are:

- DRR training needed in RTTC and PTTC, topic should be included in regular training programs
- Pedagogical Dept. with curriculum specialist from NCDM and other NGOs should be involved in developing curriculum and materials for TOT
- There should be single department rather than separate pedagogical and education dept. For example, NCDM has set up the structure that shows focal point for each project from NCDM. There should be clear structure e.g., dept of HIV/AIDS should have focal point/specialist on this subject with specific responsibilities.
- Ministry of Water Resources and Management (for floods), MoH (for any epidemic, HIV/AIDS), Ministry of Agriculture, Ministry of Transportation need to support and provide help to the Pedagogical Dept. To develop curriculum on DRR help is needed in:

- Human Resources
- Budget
- Materials (e.g., VCD, Posters) and experiences

- MOEYS budget is not enough to provide for materials, so need to look for funds. Govt. should allocate funds along with NGOs and Donors.
- All activities should be interlinked.

5. Hear the Children:

Hear the Children: Fifteen students from 3 schools participated in this special event. These were the outstanding students at the school safety day at their schools.

The pilot testing of the DRR module was conducted in selected schools. Lessons learned were presented by the children of these schools. Fifteen students from 3 schools participated in this special event. These were the outstanding students at the school safety day at their schools. Questions were asked related to fire, floods, violence and causes of disasters. Students were also asked the meaning of risk, hazard and disaster by the participants. The students answered all questions well. Students also asked several questions to the participants. UNDP Regional Advisor and Mr. Chum Vuthy of ADPC gave a detailed and simple answer to the question on the difference between hazard, vulnerability and risk. ADPC Director asked the children to demonstrate the theme "Living with floods" with their own ideas on 2nd day of the workshop.

The posters made by the students on DRR activities were also presented, and the students were asked many questions to explain their work.

6. The activities of the 1st day of the workshop were summarized by the Under Secretary of State, MOEYS.

7. Day 2: 20 March 2008

8. Presentations:

8.1 School Construction Department, MOEYS:

MOEYS is planning another 5-years project (2005-2010) with following 3 components:
▪ School building construction (around 300 schools)
▪ 900 teachers to be trained in 2008

The 2nd day of the workshop started with the presentation from Deputy Director General of Education on School Construction in Cambodia. The presenter discussed the types of School Building construction and number of planned buildings for next 5 years in Cambodia. He made a second presentation on school construction under Prime Minister Office which was followed by questions and comments. Currently, MOEYS is constructing and/or planning to construct around 300 school buildings in 5 to 6 provinces as Phase-I of the Project with loan from ADB.

With scholarship from Belgium and from the national budget, MOEYS is planning another 5-years project (2005-2010) with following 3 components:

- School building construction (around 300 schools)
- Scholarship (from Belgium) to improve the education sector Grade 8, 9 and for teacher's development (around 900 teachers to be trained in 2008) and leadership training to officers,
- Higher education to strengthen ACC and expanding of PM library at Phnom Penh University.

8.2 UNICEF:

UNICEF gave a presentation on Green Book which outlines Child Friendly Schools (CFS) program in Cambodia. Main discussion was on six dimensions of CFS and possible link to disaster risk reduction:

UNICEF gave a presentation on Green Book which outlines Child Friendly Schools (CFS) program in Cambodia.

- Get the children to the school
- Curriculum should be relevant to the children
- School should be SAFE (safety drill, safe eating, safe living and free from violence in schools)
- Gender sensitive access to the information
- Community participation for good quality of education
- Enabling system, policy etc.

UNICEF helped MOEYS to develop the "Green Book". To execute these there are implementation manuals. These manuals cover each of the 6 dimensions. The manual has a teacher's guide and a training plan. This helps the school implement the green book and the 6 dimensions in the schools. DRR can be integrated in dimension 2 and 3. In dimension 2 DRR concepts can be part of teaching materials. In life skills, DRR skills such as swimming or first AID (with help from CRC) can be taught. This can be added in local content.

In life skills, DRR skills such as swimming or first AID (with help from CRC) can be taught.

9. Country Study Paper: Impact of Disasters on the Education Sector in Cambodia

Study paper on "Impact of disaster on the education sector in Cambodia" was presented by Economic Institute of Cambodia (EIC). After the presentation the participants were divided into 3 groups in order to discuss the study paper recommendations with following questions:

9.1 Group 1: For safer school construction what are the steps to be taken for ensuring that all schools are built safe?

The suggestions are:

- Set up a committee for the school building at the community level (school director, community leaders) to monitor maintenance.
- Capacity building of the committee members so that the committee members can explain to the architect the design that will suit the local conditions.
- Build all structures above the high flood level
- Ensure early warning of storms for the community
- Roads should be flood proof for continued access even after flood
- Train architects, private contractors, masons, etc.
- Master plan is essential. Should include the size and location of school and how much area needed for play ground and class rooms.
- Must have professional architect for school building. Also need to study the level of water and volume of flood before initiating construction.
- Knowledge should be imparted to community on what they should and should not do to ensure storm resilience in the construction. This can be done through capacity building campaign.
- Clear evacuation routes during floods or during emergency should be developed for the community.
- Need to manage and utilize funds appropriately and effectively. Community and concerned government officials should form a committee to monitor school building construction.

9.2 Group 2: What are the institutions and departments (along with donors) who should be involved in safer school construction? (Both from Government and NGOs)

The comments are:

- MOEYS
- Ministry of Transportation
- Ministry of Public works
- Ministry of Rural development
- Ministry of Planning
- Ministry of Construction
- Ministry of Finance and economic
- Local authority and community
- ADB
- WB
- JICA
- World Vision
- LWF
- BETT
- UNICEF
- Contractors

Participants discussed that stakeholder involvement in safer school construction can be ensured by involving all stakeholders in the task. The challenge is how to work with many organizations at the same time. It was suggested that setting up a committee (with line ministries together with institutions, donors and funding agencies as members) chaired by MoEYS, will solve the problem of coordination. If MOEYS needs assistance from Ministry of Transportation or from other ministry, it should be asked officially. If need for road access to school, MOEYS should inform Ministry of Transportation through Ministry of Construction about the plan and ask for technical assistance. But all should be flexible to the real situation, as per the local conditions.

9.3 Group 3: What additions should be made to the school building design so that it can be used as emergency and evacuation shelter without affecting teaching?

The comments are:

- High land for site selection
- There should be enough land for school activities (play ground, foot ball field, assembly point, etc.)
- Water storage facilities should be available. Should have clean water supply system and sanitation (if possible could set up electricity run water purifier)
- Need to have enough class rooms with sufficient toilets
- Clear evacuation route for every school
- Separate toilet for men and women with hygienic management and clean water system.
- There should be 2 to 3 floors for a school building. Then during floods students can be evacuated to the 3rd floor

- School building design should have shelter for animal and have cooking facilities.
- Trees and plants should be in the compound
- Should have gate in all schools. While preparing for budget, school gate expense should be included.

11. Panel Discussion:

Following the ADB presentation a panel discussion was held. The main points discussed include:

Dr. Mathe:

- Need a trade off in school construction - Resilient buildings are very costly. Since Cambodia is mostly affected by floods, building schools in high land is a need. But unfortunately we do no have much high land. So, need to have a trade off in building schools considering average flood height (more often) compared to highest flood height (rare flash flood). Even if toilet is raised, the soak pit still gets flooded.
- For storms, roof tiles are dangerous. Roof should be made wind resistant, to protect teachers and students.
- In NCDM there should be a sub-committee which looks after school construction and education
- Education working group can develop the school construction guidelines and plan..
- MOEYS should make handbooks for non-traditional constructions
- We should train local community
- We have many technical guidelines but no national guideline
- There has to be a trade off in the facilities we can put in a school for use as an emergency shelter.

Mr. Loy Rego, ADPC:

- Guidelines should be more widely disseminated
- PWG can be expanded to focus on school construction
- Education Sector Working Group can ensure that the ADB guidelines become national guidelines
- For emergency shelters, schools can add on some features (adult sanitation, cooking) only.
- The school can not be alternative to the safe area

Mr. Scott Cunliffe, UNDP:

- Regional experience is available – try to draw on some of this experience. Can be done through MOE of other countries
- Community based early warning is available in the region
- School needs water storage, drainage, high ground (site selection), which is important.
- Monitoring is important. Investment must be sustained and this is possible only from monitoring. This will ensure adherence to standards, and good utilization of funds
- Gender needs should be addressed in design

Other comments:

- Local participation is important for transparency (social audit)
- Need to have safer schools
- Schools also should be educational centre with cooking facilities and with sanitation system

- Need to learn experiences from other countries in the region, like Philippines and Indonesia, on standard school building design.
- Community based early warning system should be learnt.
- Building code is really needed in Cambodia.
- School safety committee should be strengthened and must involve local community.

If building is used as animal shelter during disasters, then methods have to be developed to ensure sanitation and safety of children. Proper maintenance of the buildings is also important and needs attention.

12. Closing ceremony:

Closing remarks were given by UNDP Regional Advisor with the presentation "Sharing knowledge for DRR". Deputy Director of MoEYS summarized the workshop and informed about the activities that have been done under this project, and during the workshop, to H.E. Kol Pheng, Senior Minister, Ministry of Education, Youth and Sports. After discussion, 15 students demonstrated knowledge of DRR through skits on "Living with floods". They emphasized the Do's and Don'ts before, during and after floods. Gifts were presented to students by Senior Minister of MoEYS, UNDP Regional Advisor, ADPC Program Manager and Under Secretary of State, MoEYS.

Workshop concluded with the closing remarks by Senior Minister, MoEYS. He appreciated the achievements of the project and the workshop. He reiterated the need for safer schools and emphasized the commitment of the MOEYS to continue the efforts for mainstreaming DRR in the education sector in Cambodia.

Stakeholder Consultation: Since the inception of the project, ADPC project team had several meetings with related line ministries and other stakeholders; Ministry of Land Management, Urban Planning, and Construction, Department of Planning, MOE, Department of School Construction, MOE, Department of School Statistics, MOE, Pedagogical department, MOE, Department of Planning and Foreign Relation, MOE, Department of Informal education in project countries. The focus of these meetings was advocacy for the further mainstreaming of DRR in the education sector. These discussions have contributed to both the study and the workshop. These discussions have also helped develop the proposal for the Phase II of this project, based on the demand of the governments.

In Cambodia, there is an Education Sector Working Group (ESWG) comprising members from MOEYS, Ministry of Economic and Finance, Donors and NGOs

In Cambodia, there is an Education Sector Working Group (ESWG) comprising members from MOEYS, Ministry of Economic and Finance, Donors and NGOs, yet the members are not sensitized, nor aware of the need for integrating DRR issues in the Education Sector Plan. There is need to ensure sensitization on DRR issues and a meeting of the ESWG has been specifically fixed for this purpose for 2 August 2008. The process of stakeholder consultation is continuing.

During Phase I only10 schools were covered out of a total of 846 lower secondary schools.

Mainstreaming: For institutionalization of the DRR module there is need for the module to become part of the national curriculum. There is also need for training of more teachers, who will deliver the module to the students. During Phase I only10 schools were covered out of a total of 846 lower secondary schools. This is insufficient for critical mass. There is need to integrate the TOT with the teachers training institutes regular training modules. These activities could be taken up in the next Phase of the project.

In Cambodia Ministry of Education, Youth and Sports (MoEYS) issued an order to all heads of Department of Education in all provinces and districts to disseminate the curriculum on "Mainstreaming Disaster Risk Reduction Concept" into the lower secondary level in accordance with the development strategy of the New Millennium and Rectangular Strategic Plan of the Royal Government of Cambodia which would ensure the safety and security of both current and future school children.

Copy of the MoEYS order number 555/2008 is in Annexure. It was sent to General Department of Education, General Department of Administration and Finance, General Secretariat, and all offices under the MoEYS for implementing and for documentation.

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The implementation of the Phase I of Mainstreaming DRR in the Education Sector 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.

PART B
SECTION 1: INTRODUCTION AND METHODOLOGY

1.1 BACKGROUND OF THE STUDY

No one can stop natural disasters. However, we can reduce the impact of natural disasters on the physical and the socio-economic losses in society. It is notable that victims of disasters mainly come from the least wealthy and influential; those in unsafe houses and engaged in more dangerous activities, who have limited options and entitlements. In any case, school children killed in schools or patients in health care facilities are especially disturbing aspects of the aftermath of disasters. Surely, these places should put safety measures first and Disaster Risk Reduction (DRR) as a priority.

Following the October 2005 earthquake in northern Pakistan, between 17,000 and 20,000 students were reported killed in the collapse of some 10,000 school buildings. Children comprised half of more than 75,000 deaths. Over 1,000 health care facilities were also destroyed, with high casualties among patients and health care workers. In the Gujarat 2001 earthquake 11,600 schools were destroyed or severely damaged. The main shock occurred during a national holiday so school deaths were not large, but tragic incidents involved students in schools for celebrations and, again children comprised half of more than 20,000 dead.

Concentrated or disproportionate casualties among certain groups occur in most disasters. The table (Table 1) below shows a selection of events, in a variety of countries, in which there were concentrated casualties in, or widespread destruction of school, or both; and where destruction was identified with improper construction or sites, and failure to meet established building standards.

Table 4/ Earthquakes and School Disasters

2005 northern Pakistan (75,000 + killed) 17,000+ 'students' reported killed. 10,000 school buildings destroyed.
2001 Gujarat (20,000 killed) 9,600 primary, 1,913 'grant-in-aid', 127 secondary, 110 higher education and technical schools destroyed or severely damaged.
1998 East Nepal (722 killed, 1,200 injured) 1,200 schools destroyed or heavily damaged.
1993 Latur-Osmanabad, Maharashtra, India (8,311 Killed) Many schools destroyed. Prosecutor General threatened to file a suit against contractors who built them. 48% of all dead were 14 years of age or younger.
1992 Dahahour, Calro, Egypt (560 killed, 6,500 injured, 40,000 homeless) Approximately 1,500 schools destroyed or damaged beyond repair, 3,500 needing major repair.
1992 Erzincan, Turkey 6-story medical school collapsed burying 62 students.
1988 Spitak, Armenia (55,000 killed, 130,000 injured, 250,000+ homeless) Two thirds of deaths children and adolescents, mostly killed in school and kindergarten buildings. 32,000 children evacuated.
1988 Yunan Province, China (748 killed, 7,750 injured, 1 million homeless) 1,300 schools destroyed.
1980 El Asnam, Algeria (25,000 killed, 50,000 injured, 325,000 homeless)

In this regard, Cambodia is considered as one of the more disaster-prone country in South East Asia; its main and frequent threats are floods. Due to environmental degradation and human activities, such natural hazards have been affecting the country on a recurrent basis.

The Mekong flood in 2000 gave Cambodia the worst experience in the last 70 years, causing both socio-economic and physical damages. According to the official report of the National Committee for Disaster Management (NCDM), the floods affected about 3.4 million people with 347 fatalities, 80 percent of which were children. Moreover, schools and other infrastructures such as hospitals, houses, and pagodas were seriously damaged, with a total estimated loss of US$161 million.

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Again, floods hit Cambodia in 2001 and 2002, damaging approximately US$36 million and US$12 million respectively. In 2001, the floods killed 62 people while in 2002 the floods killed 26 (40 percent of whom were children), and many schools were destroyed.

Generally, children are the most vulnerable group in all disasters but there are no major educational programs related to disaster risk reduction (DRR) in primary or secondary schools in Cambodia. Thus teaching DRR in schools will help raise awareness and give better understanding not limited to children and teachers, but to the community as well. When disasters occur, this will in turn help to minimize losses borne by the government. At the same time, investing more in strengthening school-building structures before disasters take place would help reduce long term costs, protect children, and ensure educational continuity after the event.

As part of the MDRD Education Project (explained in Section 2.3), this research study on socio-economic and physical impact assessment of disasters on education sector is jointly produced by the MoEYS, NCDM, ADPC, ECHO, UNDP, and EIC. This study aims at raising awareness on the necessity of integrating DRR into education sector policy.

1.2 STUDY OBJECTIVES

The objectives of this research study are the following:

- To build up evidence based rationale to raise awareness of integrating DRR concerns into education sector policy;
- To advocate for changing practices in school construction and incorporating disaster risk resilient features in school construction.

1.3 RATIONALE OF THE STUDY

Results of the MDRD-Education project have included consensus for mainstreaming DRR in the education sector and identification of additional mainstreaming opportunities in education and related ministries. It is envisaged that the experience obtained throughout the project activities will serve as a good example for drawing lessons on how to mainstream DRR into development policy and planning. Moreover, this can also be adapted in other countries.

To meet the above project objectives, a study on impacts of disasters on the education sector has been conducted with emphasizing focus on the following issues:

- Socio-economic and physical impacts of disasters on education sector
- Review of current practices in school construction
- Solution oriented recommendations for:
  - Minimization of social and economic impacts of disasters, especially on education sector;
  - Improving procedures and guidelines for school construction;
  - Identifying specific opportunities to improve safety in school construction in pipeline projects over the next 3 years.

1.4 STUDY METHODOLOGY

To build up evidence-based rationale for raising awareness on integrating disaster risk reduction concerns into education sector policy and to advocate for changing practices and incorporating disaster resilient features in school construction, it was necessary that a study on socio-economic and physical impacts of disasters on education sector has to be conducted.

Due to the mixed nature of the study, which combines both socio-economic and physical assessments of disaster impacts, EIC had proposed the following research methodology to assure the objectives attainment and the validity of the study. Since Cambodia is more vulnerable to floods than other kinds of disasters such as draught, earthquakes and storms, the study has stressed only on the impacts of floods on the education sector.

Desk Review: A review of existing relevant documents and research studies was made to get a better understanding of the issues in the project. These research studies were conducted by different institutions such as ADPC, MoEYS, NCDM, MRC, etc. At the same time, all relevant secondary data were collected and analyzed in close collaboration with ADPC, MoEYS, and NCDM.

Field Survey: Certain field surveys were conducted in three provinces located in first priority flood prone areas, namely Prey Veng, Takeo, and Kandal, under assistance from MoEYS and NCDM. The total number of sample for this survey was 92 vulnerable schools, which were randomly selected from the three provinces.

In order to assess the impacts of disasters on education sector at the national level, secondary data related to disaster on education sector of other provinces were also collected through assistance from MoEYS and NCDM. Detailed study methodology, including sampling and survey process, can be found in annexes C and D at the end of the report.

SECTION 2: INSTITUTIONAL ARRANGEMENT FOR DISASTER MITIGATION AND EDUCATION

2.1 GENERAL INFORMATION ON EDUCATION SECTOR IN CAMBODIA

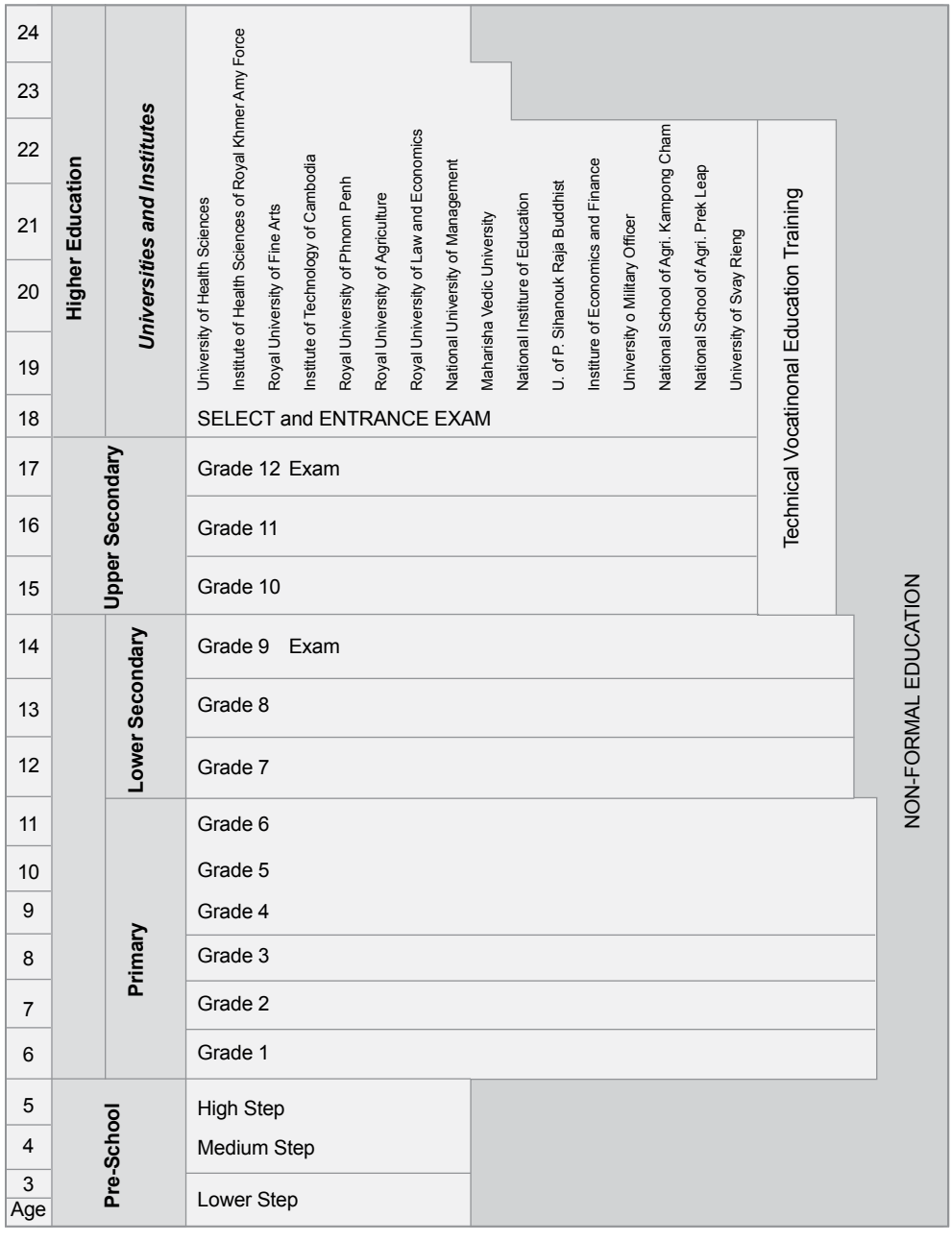
The education sector in Cambodia has been improved gradually under efforts from the Ministry of Education Youth and Sports (MoEYS) and various stakeholders, though currently perceived to need major improvements. This improvement can be reflected by the development of educational system, starting back in the 1980s after the collapse of the Pol Pot regime.

Until recently, there are three main stages of educational system development in Cambodia. The first stage started from 1979 to 1983 which adopted the ten-year system; that is, five years for primary education, two and three years respectively for lower and upper secondary education. By adding one more year into lower secondary education, the second stage began in 1984 and ended in 1996, making the total duration of education increase to eleven years. During these two stages, MoEYS used a education methodology, called "Teacher Center", in which teachers play the most active role by providing knowledge to students,

In order to adapt to the educational system in developed countries, the third stage of educational system development started from 1997 to date, applying the 12 years system, of which six years for primary education, three years for both lower and upper secondary education (Figure 1). At this stage, the above education methodology, "Teacher Center", was changed to "Student Center" in which students are the most active in the class and teachers play a role only as a guide and not as an instructor.

To understand in depth the gradual improvement of education sector in Cambodia, curriculum development policy and selected educational statistics and indicators are shown in the following parts of the report. At the same time, location of schools considered vulnerable to disasters, particularly floods and droughts, is also presented.

Figure 1/ Education System in Cambodia



A. Curriculum Development

The core school curriculum for general education in Cambodia was developed back in the year 1996. More recently, in 2004 the Pedagogical Research Department (under MoEYS), the national agency responsible for preparing the school curriculum, has prepared the "Policy for Curriculum Development 2005-2009" which states the policy for upgrading and improving the 1996 core curriculum. This policy has been designed for a period of five years 2005-2009 and will be reviewed in 2009 for another five years, i.e. for the period 2010-2014[1].

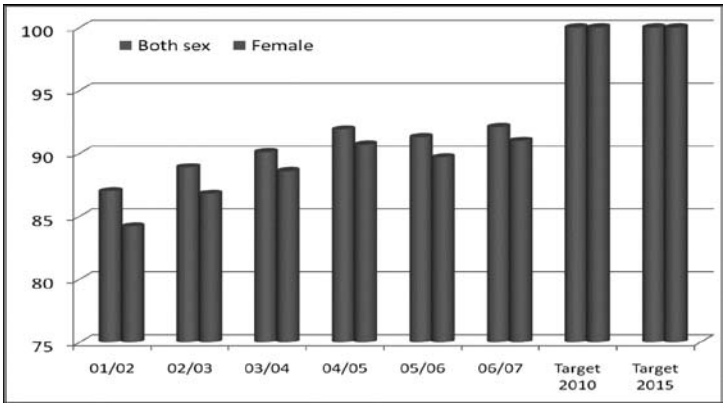
Having seen the importance of mainstreaming disaster risk reduction (DRR) into students and people in the country as a whole, partnerships between ministry of education and national disaster management office has been established under the ongoing Priority Implementation Partnerships (PIP) on Mainstreaming DRR into Education Sector of the RCC MDRD Program, being implemented by the RCC Secretariat in partnership with UNDP and ECHO in Cambodia, Lao PDR and the Philippines[2].

Currently, MoEYS is implementing the revised 1996 core curriculum as stated in the 2005-2009 curriculum development policy. The implementation of this revised curriculum has started since academic year 2007/2008 for Grade 1 and so on, and is expected to be accomplished in all grades by 2011. At this cycle of curriculum development, it is helpful and relevant time to integrate DRR module into the study programs in Cambodia.

B. Selected Education Statistics and Indicators

The Education Statistics and Indicators of MoEYS (Figure 2) show that 2006/2007 net enrollment rate in primary schools was 92.1 percent, up from 91.3 percent in the previous year and from 87 percent in the academic year 2001/2002. Female net enrollment rate in primary schools was 91 percent, slightly up from 89.7 percent in the prior year and from 84.2 percent in 2001/2002. These rates have not reached the 2010 targets of Cambodian Millennium Development Goals (CMDGs) yet, which requires 100 percent enrollment rate in primary education.

Figure 2/ Net Enrollment Rate (percent) in Primary Education



Source: Compiled from Education Statistics and Indicators series, MoEYS

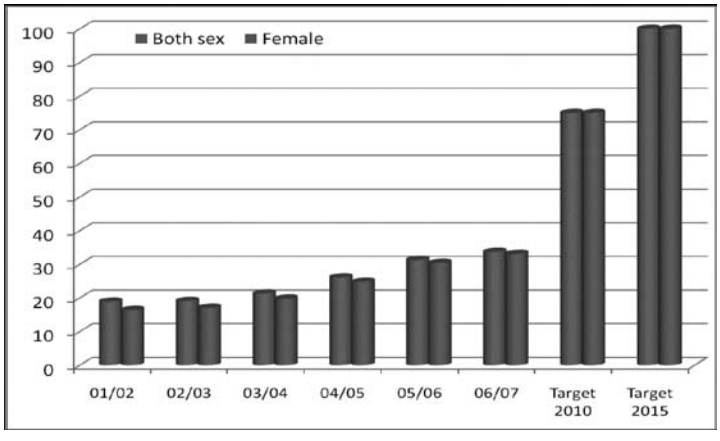
[1] RCC Guideline 6.1
[2] Ibid

In lower secondary schools, net enrollment rate was 33.7 percent

In lower secondary schools, net enrollment rate was 33.7 percent, about 2.4 percent up from the previous year and around 15 percent up from 2001/2002 (Figure 3). Female net enrollment rate in this stratum was about 33 percent in 2006/2007, around three percent up from the previous year and 17 percent up from 2001/2002. But, these rates are still far below the CMDG targets, which are 75 percent and 100 percent in 2010 and 2015 respectively.

Figure 3/ Net Enrollment Rate (percent) in Lower Secondary Education

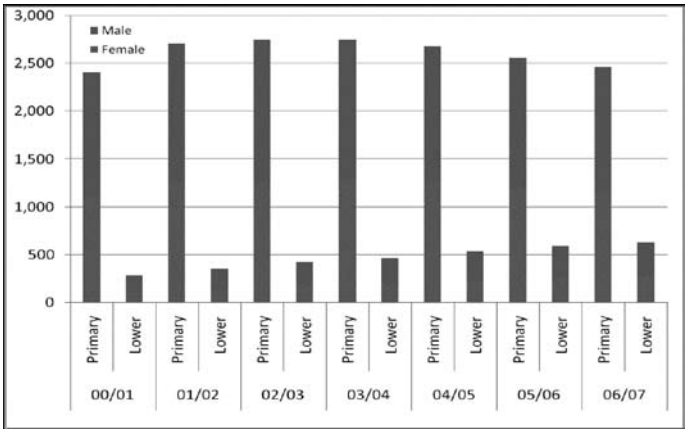
Source: Compiled from Education Statistics and Indicators series, MoEYS



In the academic year 2006/2007, student enrollment was about 3.4 million, 46 percent of which was female. The classroom size averages around 42 students, down from 43 in the 2005/2006 and 44 from 2001/2002. The primary student enrollment declines gradually during the last five years, making the annual rate down of around two percent. Such decline is mainly due to the lower birth growth rate resulting from contraception programs. Yet, the enrollment in secondary schools increases remarkably with the annual growth of 12 percent in lower secondary schools and 14 percent in upper secondary schools (Figure 4).

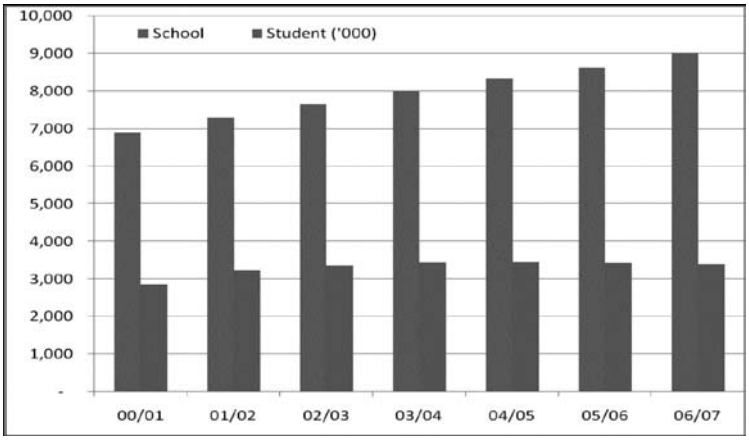
Figure 4/ Student Enrollment ('000) by Gender in Primary & Lower Secondary Schools

Source: Compiled from Education Statistics and Indicators series, MoEYS



The same MoEYS statistics indicate that there were more than nine thousands schools in Cambodia in the academic year 2006/2007, around five percent up from the prior year and 24 percent up from the year 2001/2002. Of this number, the primary school takes 6,365 while lower and upper secondary schools respectively take 846 and 283, making the total class number increase to around 80,733 in that year (Figure 5).

Figure 5/ Number of Schools and Student Enrollment in Cambodia



Source: Compiled from Education Statistics and Indicators series, MoEYS

2.2 DISASTER INTERVENTION MECHANISM OF MoEYS

A. MoEYS Intra-ministry Mechanism

The MoEYS organizational chart shows that there are five main directorate generals functioning in the ministry, namely: Directorate General of Administration and Finance; Directorate General of Education; Directorate General of Higher Education; Directorate General of Youth and Sports; and Inspectorate General.

There are five main directorate generals functioning in the ministry, namely: Directorate General of Administration and Finance; Directorate General of Education; Directorate General of Higher Education; Directorate General of Youth and Sports; and Inspectorate General.

The Directorate General of Administration and Finance is composed of seven departments, of which there is one department responsible for management of material and assets of MoEYS, called Material and Public Assets Department. When disasters affect school buildings and/or equipments, this directorate general has the duty to take measures financially and technically.

Another directorate general of MoEYS, Directorate General of Education, plays an active role in general education, i.e. from grade 1 to 12. This important directorate general, composing of seven departments, is to assure the quality and efficiency of general education services in the country. The Pedagogical Research Department of this directorate general is account for designing and upgrading school curriculums.

The Municipal/Provincial Office of Education, Youth and Sports, another organ in the MoEYS organizational structure, is responsible for functioning at the basic level and to report to the ministry headquarters which in turn allocates tasks to its respective directorate general for taking actions. Detailed organizational charts of MoEYS could be found in Annex E of the report.

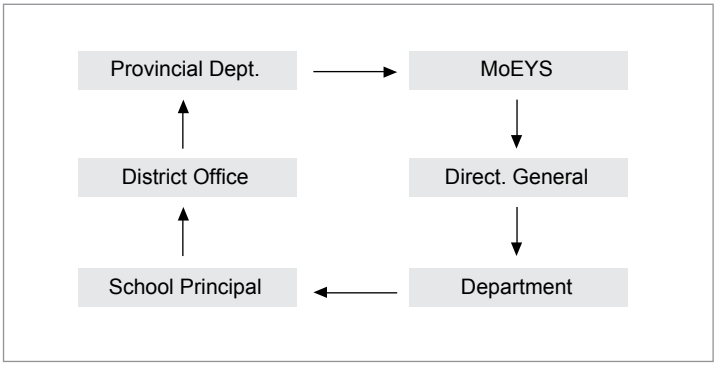
According to the NCDM policy document and the structure of NCDM in which MoEYS is a member, the MoEYS has the following duties:

- Establish an emergency management unit (EMU) in the Ministry which is responsible for developing and administering policy and supervises the emergency-related activities of the departments, bureaus, offices and agencies under it, as well as all other institutions and agencies working in the sector.
- Establish national policy, operational plans, training curricula and material, as well as guidelines for damage and need assessments to be conducted by agents in the sector.
- Organize emergency response teams in all schools, institutions of learning, and educational establishments.
- Make suitable school buildings in the affected areas available as evacuation centers.
- Assist in the public education campaign through integration in the school curricula of subjects related to emergency management, hazards, and precautionary measures.

In practice, when disasters occur, each school principal is responsible for reporting educational losses and damages to District Office of Education which then informs to the Provincial Department. All the reported data and information will be forwarded to MoEYS to take measures accordingly to the responsibility of its respective directorate general, mainly Directorate General of Education and Directorate General of Administration & Finance (Figure 6).

Figure 6/ MoEYS Intra-ministry Mechanism in Disaster Interventions

Source: Authors, interviews with MoEYS officials



For instance, when the course syllabus cannot be accomplished within the timeframe of an academic year due to either floods or any other kinds of hazards, the school principal has to report the issues through his hierarchical line to MoEYS. Then, MoEYS will divide the tasks to its specialized department, called Directorate General Department of Education, to address the problems. Likewise, if schools are incurred from physical damages caused by such disasters, the Directorate General of Administration and Finance of MoEYS will take its role solving the issues.

B. MoEYS Inter-ministry Coordination

Since the emergency management unit (EMU) of MoEYS does not exist yet in the organizational structure of the ministry, methods used in inter-ministry coordination related to disaster intervention between MoEYS itself and other ministries or institutions are not officially regulated. In general, MoEYS always cooperate with other ministries while addressing problems related to education. For example, when constructing new schools in flood prone areas, MoEYS will collaborate with NCDM and the Ministry of Public Works and Transport (MPWT) by providing recommendations on how to build the most adaptable schools.

According to the resolution dated October 25, 2007 of NCDM, an inter-institutional technical working group (TWG) was created for DRR Strategic National Action Plan (DRR SNAP) for 2008-2013. This TWG is comprised of 16 members from various ministries and institutions, one of whom comes from the Pedagogical Research Department of MoEYS. The following duties must be taken into practice:

- Directly participate in forming DRR SNAP
- Set up projects through consultation with main stakeholders and through workshops, trainings; and include all related sectors in SNAP
- Collect all necessary data, documents, and experience from relevant stakeholders for drafting DRR SNAP
- Assess actual demands and build up capacity in order to mainstream DRR into development
- Monitor and report by consulting processes and dissemination of SNAP
- Organize workshops with participations of United Nation Disaster Management Team (UNDMT), International Organizations (IOs), and Non-governmental Organizations (NGOs).

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SECTION 3: SOCIO-ECONOMIC IMPACT OF DISASTERS ON EDUCATION SECTOR

3.1 LOCATION OF SCHOOLS IN DISASTER PRONE AREAS

There are around 260 communes in 15 provinces considered prone to flood, mostly those located around Tonle Sap Lake and along the Mekong River. Whereas 270 communes in nine provinces are considered prone to drought (Figure 7).

Based on a study conducted by WFP/NCDM on mapping disaster prone areas in 2003[3], there are around 260 communes in 15 provinces considered prone to flood, mostly those located around Tonle Sap Lake and along the Mekong River. Whereas 270 communes in nine provinces are considered prone to drought (Figure 7).

Floods generally cause much more damage than droughts do in the education sector. Every year, floods provoke delay of study programs and school damages, mainly those located in the aforementioned flood prone areas. Among the 15 flood prone provinces, there are five most affected provinces situated along the lower part of the Mekong River, namely, Kampong Cham, Kandal, Prey Veng, Svay Rieng, and Takeo.

The compilation of 2006 data obtained from SEILA Program and the 2003 survey data of WFP/NCDM proves that about 21 percent of schools in Cambodia are situated in flood prone areas which equal 1,886 schools, of which 65 percent are primary schools. Those vulnerable schools are mostly in Kampong Thom (17 percent), Kandal (15 percent), and Prey Veng (12 percent) as detailed in Table C1 and C2 of Annex E.

In accordance with the prioritization of emergency by WFP and NCDM among the 260 flood prone communes, there are 76 communes located in first priority[4] flood prone areas (Figure 8), in which about 552 schools situated. The majority of those schools are primary schools in Prey Veng, Takeo, Kandal, and Kratie.

[3] NCDM/WFP (2003) "Mapping Vulnerability to Natural Disasters in Cambodia"

[4] There are three categories of prioritization of emergency by WFP/NCDM: First Priority, Second Priority, and Third Priority, as shown in the map (Figure 6)

Figure 7/ Flood and Drought Areas in Cambodia

Source: World Food Program (WFP)

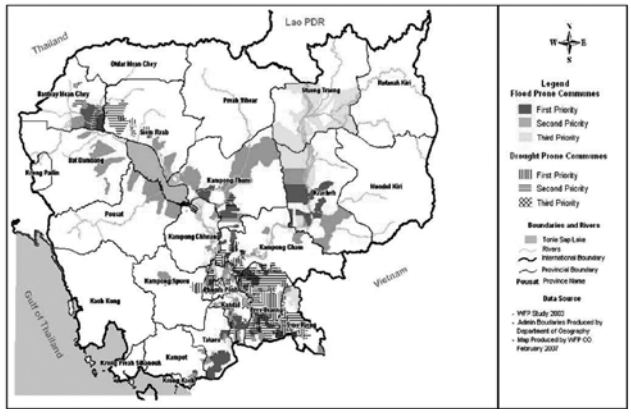
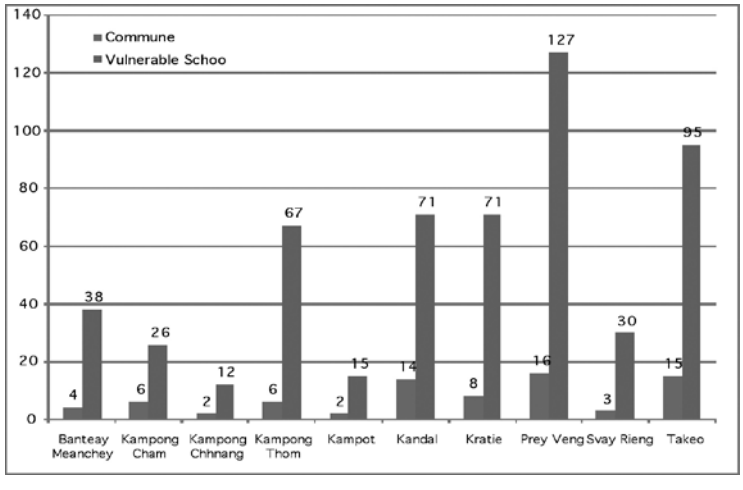


Figure 8/ Communes and Schools Located in First Priority Flood Prone Areas

Source: Compiled from WFP Survey (2003) and SEILA Program (2006)



3.2 SOCIO-ECONOMIC IMPACTS OF FLOODS ON EDUCATION

To measure the impacts of flood on education, interview with 92 school principals were conducted. Among those 92 vulnerable schools, 78 percent are flooded every year; 22 percent are flooded every few years or rarely. The flooding occurs for more than 3 months per year, ranging from July to early December. Thus, most of flooding affects schooling at the beginning of the academic year, especially October and November.

Among those 92 vulnerable schools, 78 percent are flooded every year; 22 percent are flooded every few years or rarely. The flooding occurs for more than 3 months per year, ranging from July to early December.

According to the findings of the survey, flood is one of the factors disrupting study program accomplishment and thus affecting the quality of current education in Cambodia, particularly in provinces which are prone to floods and where schools were constructed without proper flood resilient features.

When there is flood, students always encounter difficulties to go to schools because of road damages and having to travel across rivers. Mostly, they have to catch a boat to study, which takes longer time and higher costs to reach schools. Such difficulties could in turn lead to high absenteeism rate among poor students at the beginning of each academic year. In some cases, schools were used as an emergency shelters during flooding time, resulting in damages of school structures, especially school floor.

A. Difficulty in Accessing the Schools

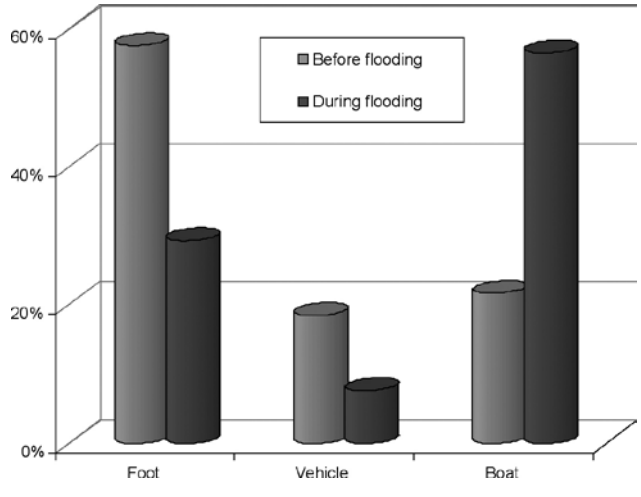
Public transport in Cambodia is limited; so students use their own means to travel to schools, mostly on foot and by bicycle. Since they have to catch a boat during flooding period, students in flood prone areas generally incur more difficulties, with higher cost, to access the schools. Findings of the survey of the 92 vulnerable schools proved that students in flood prone areas usually had difficult access to schools at the beginning of each new academic year since they have to catch boat instead of going on foot or by vehicle.

Among the 92 interviewed school principals, about 57 percent of respondents showed that their students went to school by boat during flooding

Among the 92 interviewed school principals, about 57 percent of respondents showed that their students went to school by boat during flooding, up from only 22 percent of respondents during non-flooding season (Figure 9). Thus, students of 35 percent of interviewed schools have experienced more difficulty during flood season. About 58 percent and 18 percent of those who used to go to school by foot and vehicle, respectively, during non-flood season need to catch boat during flooding as the way to school is partially under flood water. Nonetheless, 37 percent said that students still have access to school on foot and by vehicles even in the flood time because of newly constructed roads which are higher than the flood level (i.e., some of the roads have integrated DRR).

Figure 9/ Means used in accessing the Schools

Source: Results of the survey among 92 flood prone schools, detailed methodology in Annex C



In some places, the way to school is separated by rivers or affluents, forcing students to catch boat to school in both dry and wet seasons. These students spend more time and money on traveling to study than the others, and even much more during flooding time in the wet season.

A case from one school in Koh Samrong commune of Kampong Siem district in Kampong Cham province, an island considered prone to floods, reveals that since there is only lower secondary school in the commune, students have to travel far to continue their studies in upper secondary school in Kampong Cham town. It should be noted that to travel from the commune to the town, students have to catch a machine boat spending about half an hour and costing them US$0.25 in dry season, with 50 percent higher in flooding time[5]. In this case, some students coming from poor families cannot afford to continue their studies in Kampong Cham town due to higher expense on traveling and thus decide to drop out of school.

It should be noted that to travel from the commune to the town, students have to catch a machine boat spending about half an hour and costing them US$0.25 in dry season, with 50 percent higher in flooding time5. In this case, some students coming from poor families cannot afford to continue their studies in Kampong Cham town due to higher expense on traveling

A qualitative interview with a teacher who has been teaching in Koh Samrong lower secondary school for more than twenty years proves that around half of the total students passing final exams in grade 9 decide to stop studying because of lack of financial support resulting from poverty.

"Through my observation, among ten students who successfully finish grade 9, around five students do not go on their studies in Kampong Cham town because of financial problems. Their families, which are mostly poor, cannot further provide financial support to those students for either traveling to school or renting a room to study in the town. As a result, some of these drop-out students participate in planting crops with their families at homeland and some migrate to various places for vocational training." said the teacher.

Sok Ley, an 18-year-old boy, has dropped out of school for more than three years due to lack of funds for supporting travel and accommodation expenses. He passed grade 9 final exams in the academic year 2005/2006 and could continue to grade 10 in Kampong Cham town for only a few months as his family had financial difficulties to support his studies. Currently, Sok Ley helps his parents planting crops at home and does not have any clear plans for his future.

B. High Drop-out Rate caused by Floods

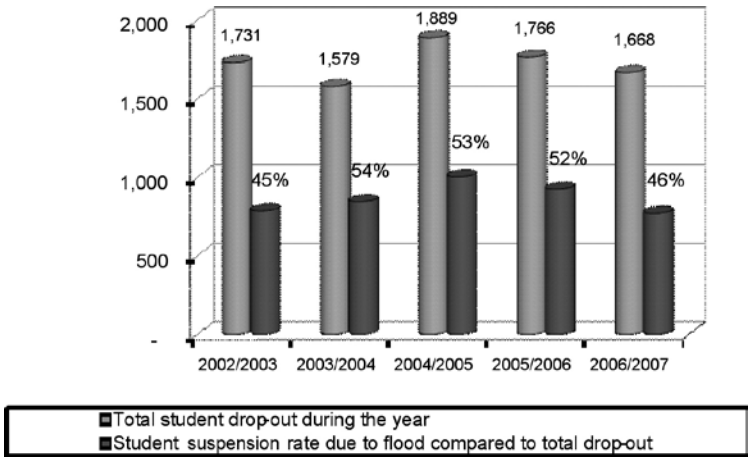
The student drop-out rate caused by floods is rather high compared to the normal drop-out rate, especially at the beginning of the new academic year. The average drop-out rate in the last five years among the 92 interviewed schools in the three provinces is around 7 percent per annum, equaling about 1,700 students per year. This drop-out rate is well below the five-year drop-out rate average among the three provinces, which is 8.6 percent annually. The data from the survey proves that half of the dropout students in the interviewed schools, of which around 51 percent are female, decide to give up their studies because of difficulties caused by floods (Figure 10).

The student drop-out rate caused by floods is rather high compared to the normal drop-out rate, especially at the beginning of the new academic year.

[5] The costs were calculated in the end of 2007, so there may be increases in costs due to higher fuel prices. The exchange rate is fixed at CR 4,000 per US$ 1.

Figure 10/ Student drop-out rate caused by floods compared to total drop out

Source: Results of the survey among 92 flood prone schools, detailed methodology in Annex C



Nonetheless, by observations of some provincial department officials of MoEYS in other provinces, the student drop-out rate due to difficulties caused by floods is low, compared to that due to poor living standard. Yet, the absenteeism rate in relation to difficulties caused by floods is rather high as shown in the figure above. In some cases, students suspend their studies for a period of around one month as the way to school is affected by flood and they cannot afford to travel to study as they mostly live in poor family.

A young boy coming from a poor family in Thlok Veay Ty Muoy village, Pungsa is a 7-year-old student in grade 2 for the academic year 2007/2008 in Tbaeng Rorm primary school. During the beginning of this schooling year, he had encountered difficult access to school as the way connected his village to school had partially been affected by floods. Since he was young and his parents were busy with farming, he had to suspend his studies for a period of time until the flood went away.

A qualitative interview with one primary school principals in Romeas Haek district of Svay Rieng province proves that there are some students starting their new intake late around one month compared to the others because of the difficulties caused by floods. These students mostly come from poor families which are far away from school and cannot afford to travel to go to study during flooding. Since these students start new courses late, they are generally perceived to be poor in knowledge compared to the others in the class. In this case, MoEYS has the policy to provide additional courses taught on Thursday for weak primary students under financial support of the PAP programs.

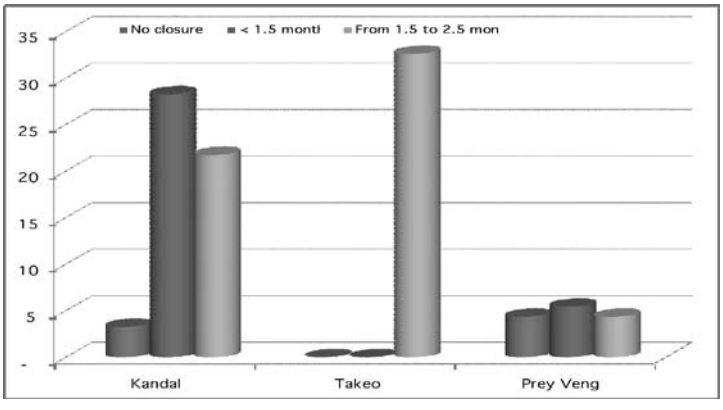
The same case can be found in another school in Andaung Khmot village of Romeas Haek district, Svay Rieng province. "Normally, the new academic year of my primary school starts around two to three weeks late compared to other schools in the province. Due to road damages caused by floods, some students living in other villages particularly Prey Phdeak and Thlok Veay Ty Muoy have to suspend their studies for a short time, making the total delay duration of around one month.", said the principal of Tbaeng Rorm primary school.

A young boy coming from a poor family in Thlok Veay Ty Muoy village, Pungsa is a 7-year-old student in grade 2 for the academic year 2007/2008 in Tbaeng Rorm primary school. During the beginning of this schooling year, he had encountered difficult access to school as the way connected his village to school had partially been affected by floods. Since he was young and his parents were busy with farming, he had to suspend his studies for a period of time until the flood went away. Consequently, he had difficulty to catch up with other students at the beginning of the class because he was around one month behind them.

3.3 DISRUPTIONS TO THE COMPLETION OF THE STUDY PROGRAMS

Schools in Cambodia are normally closed for two and a half months for vacation, starting from end of July until mid October. According to the findings of the 2003 survey by WFP/NCDM, the most critical period for flood emergency is from September to November and may span until early December. It could be reflected that schools located in heavy flood prone areas are subject to closure at least one and a half months due to flooding, which results in delay of study time in each academic year (Figure 11).

Figure 11/ Delay (percent) in starting the new schooling year due to floods



Source: Results of the survey among 92 flood prone schools, detailed methodology in Annex C

The findings of the survey within the 92 schools in flood prone areas show that about 92 percent of the total schools are closed during study time due to flooding. Among the 92 schools, around 60 percent close at least one and a half months and mostly situated in Takeo province.

In Angkor Borey and Borey Chulsa districts of Takeo province, flooding season starts in around mid July or early August and ends in mid November or early December each year. Thus, most schools in these districts begin their new academic year late and finish earlier than other schools, making the period when schools closed due to flooding of about two and a half months.

When there is school closure during study time, most of the schools do not have an alternative place for students to study. Only 10 percent of the interviewed school principals stated that they have another place for teaching students while the schools are closed due to flooding; that is, they borrow place from either pagoda or the nearby schools which are not affected by floods.

When there is school closure during study time, most of the schools do not have an alternative place for students to study.

Although half of the interviewed school principals stated that all study programs in their schools are in general completed within the timeframe set by MoEYS, the quality of education provided by those schools is lower than those located in other areas where courses are normally started. Such lower quality of education is due to two main reasons:

- On the one hand, since schools are temporarily moved to another place, i.e. pagoda, school facilities are not well equipped.
- On the other hand, due to the delay to courses of about two weeks to one and a half months, teachers have to select the most important subjects to teach in additional hours in order that all subjects are accomplished on time.

In some cases, teachers in some schools come from various places which are far away from the schools. So during the vacation, those teachers will go back to their homeland and thus cannot afford to teach the remaining subjects in additional hours, making schools not able to successfully complete the study programs suggested by MoEYS.

Like in a primary school of Angkor Borey district in Takeo province, the study programs are not successfully completed on time. According to the qualitative interview with the school vice principal, new academic year of this school begins in December, which is two months late compared to schools in other areas, and ends in mid July every year, about a half month earlier than the other schools, because of flooding.

Like in a primary school of Angkor Borey district in Takeo province, the study programs are not successfully completed on time. According to the qualitative interview with the school vice principal, new academic year of this school begins in December, which is two months late compared to schools in other areas, and ends in mid July every year, about a half month earlier than the other schools, because of flooding. Besides, almost all of the teachers come from various places and return to their home during floods. In this situation, the school cannot successfully complete the study programs.

3.4 USES OF SCHOOLS AS EMERGENCY SHELTERS

Interviews with several school principals in various provinces show that people evacuate their animals into school buildings, particularly cattle and pigs, making the floor of the schools unusable, like in the case of floods in 2000, 2001, 2002 which were severe.

Dara Kum primary school in Takeo province can be discussed as an example. “During 2001, 2002, and 2003, some villagers living near this primary school evacuated their pigs into classrooms of the school because the other places were under water, while some used the school as a warehouse for rice seed storage. Generally, seed storage does not cause any damages to the school, unlike animal evacuation which mostly affects the school floors but does not interrupt teaching.” said the school principal.

However, the use of schools as emergency shelters are not so frequent among the interviewed schools as about 92 percent of them are affected by floods every year. Habitually, people prefer pagoda campus located in higher place to that of the school as an emergency shelter.

SECTION 4: PHYSICAL IMPACT OF DISASTERS ON EDUCATION SECTOR

4.1 THE VULNERABILITY OF CAMBODIA TO DISASTERS

Geographically, it is perceived that Cambodia has never been affected by either earthquakes or severe storms due to its mountainous borders. Yet, floods and droughts are the most frequent disasters occurring in Cambodia over the last decade.

The findings of the WFP/NCDM prove that Cambodia has been severely affected by droughts and floods almost every two years for the last ten years. The country was hit by bad droughts in 1992, severe floods in 1996, severe droughts again in 1998, and the worst floods in 70 years in 2000, and both drought and floods in 2001.

Additionally, while the country was in the process of recovering from two consecutive years of disasters, the late arrival of rains in the early wet season and flash flooding of the Mekong River later in 2002 made the situation from bad to worse[6].

4.2 INFRASTRUCTURES AVAILABLE IN CAMBODIA'S EDUCATION SECTOR

Till date, there are about 17 thousands school buildings divided into nine thousand schools in the whole country. These buildings were constructed mainly from concrete or brick (76 percent) and from wood or bamboo (24 percent), according to MoEYS record. It is perceived that the latter structures, wood and bamboo, are the most vulnerable to natural disasters such as floods, drought, and storms, compared to concrete buildings.

In Cambodia, most schools are not well equipped with facilities, particularly due to lack of financial support. Almost all schools in Cambodia do not have computer lab and access to electricity. Among the nine thousands schools in the country, only 32 percent possess separate library and about half of the total schools own separate office for administrative work.

Moreover, approximately 30 percent of the schools have no access to latrine and around 40 percent have no access to water, translating into poor sanitation and difficulty faced by most female students which in turn may result in inequality of access to education. Such situation is improving gradually, on account of participation from local communities and various stakeholders especially sanitation improvement.

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[6] NCDM/WFP (2003) "Mapping Vulnerability to Natural Disasters in Cambodia"

Concerning sport facilities, MoEYS statistics in 2006/2007 shows that on average only 24 percent of schools have such facilities, reflecting that most schools in Cambodia still lack sport facilities. Among the total schools in the country, around 45 percent have volley ball teams, 35 percent have high or long jump teams, and three percent have basketball teams. Generally, there are eight kinds of sports in Cambodian schools, namely, volley ball, football, basketball, rope climbing, shot-put, high jump, long jump, and running.

4.3 PHYSICAL IMPACTS OF PAST DISASTERS ON EDUCATION SECTOR

Floods in 2000 destroyed at least 1,000 schools, representing around 18 percent of total schools in the country at that time.

According to MoEYS preliminary estimation, floods in 2000 destroyed at least 1,000 schools, representing around 18 percent of total schools in the country at that time. Yet, based on the UN figures, this number could double to about 2,000 schools which constitute roughly half of the school system[7]. It should be noted that there were four provinces where schools were most affected by the 2000 floods, namely Kampong Cham, Prey Veng, Kandal, and Kratie as shown in details in Table 3.

Table 5/ Schools in Flooded Areas Predicted by Satellite Imagery, October 2000

Source: Compiled from "Rehabilitation of Flooded Primary and Secondary Schools" report, MoEYS (2000)

Code	Province	Pre-school	Primary School	Lower Sec. School	Upper Sec. School
3	Kampong Cham	12	27	10	259
14	Prey Veng	9	19	7	210
8	Kandal	6	24	5	195
10	Kratie	5	13	2	110
21	Takaev	0	4	3	63
4	Kampong Chhnang	95	3	1	61
6	Kampong Thom	9	1	1	36
12	Phnom Penh	61	3	2	17
17	Siem Reap	15	0	0	11
15	Pursat	60	1	1	10
1	Banteay Mean Chey	33	1	0	9
20	Svay Rieng	2	0	0	4
7	Kampot	25	0	0	3
	Total	**860**	**96**	**32**	**988**

Additionally, the above estimation also proves that between 0.3 and 0.4 million primary school students were directly affected during the severe flood in 2000. Including secondary school students, this figure is estimated at around 0.5 million students[8].

[7] MoEYS (2000), "Rehabilitation of Flooded Primary and Secondary Schools"
[8] Ibid

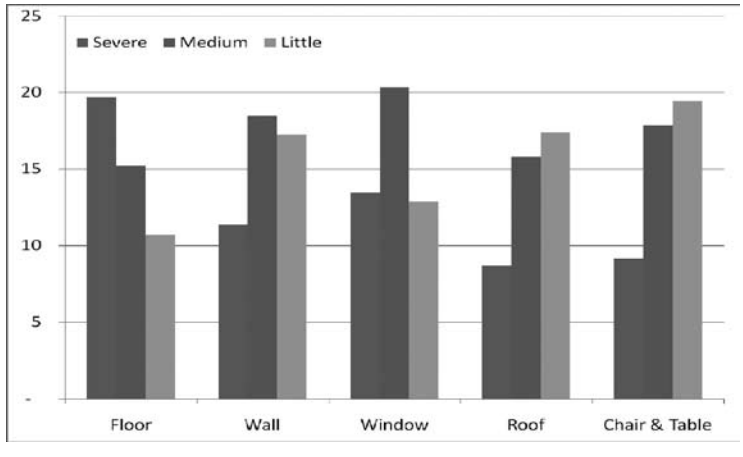
The costs of overall school rehabilitation in 2000 were estimated at around US$ 16.8 million, broken down into priority 1 schools (US$ 3.9 million), priority 2 (US$ 8.8 million), and priority 3 (US$ 4.1 million)[9], which were funded mainly by donor community such as ADB, UNICEF, WB, etc.

The costs of overall school rehabilitation in 2000 were estimated at around US$ 16.8 million

Recent estimation made by the Material and State Assets Department of MoEYS show that there were eleven schools comprising 57 classrooms in two provinces, Banteay Meanchey and Prey Veng, affected by storms and flash floods in 2007, generating the total loss of about CR 1.7 billion which equals US$ 435 thousands.

Among structures of the school building, the floor is the most vulnerable, followed by the wall and the roof. During the 1980s and 1990s, many schools were built by local communities without lifting up the plinth from land because of limited financial support and lack of knowledge of techniques, making the plinth level one meter high. This kind of construction is vulnerable to floods especially for schools located in flood prone areas. When there is severe flood, the floor of the school is always damaged and in turn wall and whole structure of school may collapse.

Figure 12/ Percentage of school by damage types (average in last 7 years)



Source: Results of the survey among 92 flood prone schools, detailed methodology in Annex C

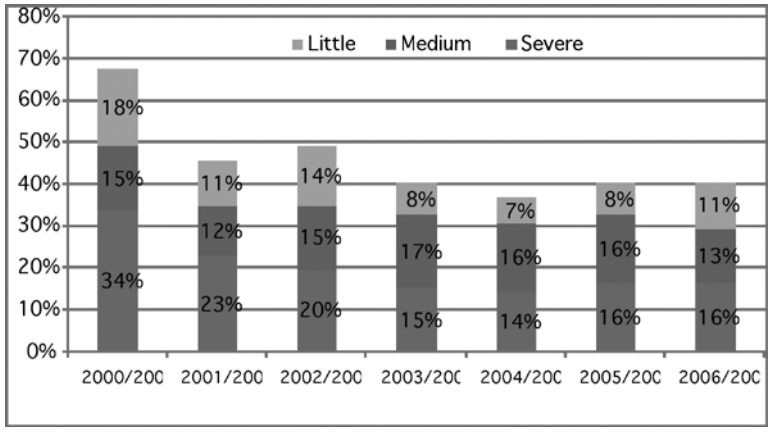
Results obtained from the survey prove that almost half of the 92 interviewed schools are physically affected by floods. Around 20 percent of the schools incur severe floor damages every year, ten percent get wall damage, and eight percent experience roof damages. In general, school equipment is not destroyed by floods. Only eight percent of the schools stated to have table and chair damages, and about 12 percent get window damages each year (Figure 12).

[9] Ibid

It is worthy to note that floor damage tends to be severe, while other damages are likely to be medium or little.

It is worthy to note that floor damage tends to be severe, while other damages are likely to be medium or little. The following figure shows percentage of floor damage according to its severity and year by year since 2000 among the 92 interviewed schools. As expected, the floods in 2000 gave the highest figures of floor damage where 67% of the schools reported damage which was either little, medium or severe in nature. For the years following 2000, the floor damage ranges from 37% to 49% of the schools surveyed (Figure 13).

Figure 13/ Percentage of floor damage according to severity, year by year



PART C
SCHOOL CONSTRUCTION IN CAMBODIA

1.1 NATIONAL ANNUAL BUDGET FOR SCHOOL CONSTRUCTION AND RECONSTRUCTION

MoEYS does not have its own budget for either construction or reconstruction of schools, according to qualitative interviews with officials from Directorate General of Administration and Finance of MoEYS. Every year, around 70 percent of the total budget for MoEYS, representing about 20 percent of annual national budget, is spent for salary costs and the remaining 30 percent for non wage, i.e. teacher training, scholarships for students, and so on.

In this case, to build new schools or repair, the ministry obtains financial support or grants from donors: the Asian Development Bank (ADB), the World Bank (WB), and various other sources of private funds such as high ranking government officials, rich businessmen, local communities, etc.

The table below (Table 4) shows school construction projects since 2002 until 2007. However, schools built by Samdach Hun Sen were taken into account only until April 2005 while those of JHP were considered from 1993 till 2007. In the table we see clearly that the national budget has provided only 10 buildings which translate into 60 classroom

Table 6/ School construction projects as of 2007

No	Project Name	Year of Construction								
		2002			2003			2004		
		Building	Room	Budget	Building	Room	Budget	Building	Room	Budget
1	Samdach Hun Sen									
2	State Budget									
3	ADB									
4	WB									
5	BETT									
6	School Aid Japan	3	15	$87,688.00	5	28	$132,850.00	4	20	$116,015.00
7	Goto Funito (Japan)									
8	JHP	14	73	N/A	15	71	N/A	16	79	N/A
9	JHP Phnom Penh									
	Total									

Table 6/ Continued...

Year of Construction									Total Building	Total Room	Total Budget
2002			2003			2004					
Building	Room	Budget	Building	Room	Budget	Building	Room	Budget			
2429	11899	N/A							2429	11899	N/A
4	16	N/A	6	44	N/A				10	60	N/A
83	326	$2,220,303.78	78	367	$2,413,401.53	238	1186	$8,548,795.54	399	1879	$13,182,500,85
			121	550	$3,722,864.00	122	630	$4,313,328.24	243	1180	$8,036,192.24
									106	522	$4,520,806.43
17	76	$478,572.00	22	82	$574,153.00	22	82	$619,834.00	73	303	$2,009,112.00
						17	64	N/A	17	64	N/A
27	125	N/A	24	133	N/A	35	160	N/A	199	948	N/A
5	113	N/A	6	111	N/A	7	109	N/A	18	333	N/A
		Total							**3494**	**17188**	

In the Educational Strategic Plan 2006-2010

This financial plan requires total capital investment of US$ 117.4 million over a five-year period starting from 2006.

In the Educational Strategic Plan 2006-2010, MoEYS has proposed a financial plan which is composed of eight components, detailed in the table below (Table 5). This financial plan requires total capital investment of US$ 117.4 million over a five-year period starting from 2006. The first three components which are school expansion projects represent about 50 percent of the total budget and are funded mainly by the Asian Development Bank (ADB) and jointly by the World Bank (WB) and the Royal Government of Cambodia (RGC).

Table 7/ MoEYS (2005), "Education Strategic Plan (ESP) 2006-2010"

Source: MoEYS (2005), "Education Stategic Plan (ESP) 2006-2010"

Component	Riels (million)	US$ (million)
01 Incomplete School Expansion	11,000	2.8
02 Lower Secondary Expansion	125,000	31.3
03 Upper Secondary Expansion	100,000	25.0
04 Science, Technology and ICT Facilities Expansion	21,960	5.5
05 Education Staff Development	32,800	8.2
06 Education Staff Accommodation	20,000	5.0
07 HE Facilities Development Fund	49,000	12.3
08 Capacity Building Program	110,000	27.5
Program Management and Monitoring	55,000	13.8
Sector Wide Management	55,000	13.8
Total:	**469,760**	**117.4**

1.2 SCHOOL CONSTRUCTION PROJECTS IN CAMBODIA

The Education Sector Support Program (ESSP) 2006-2010 document has set goals that every primary age pupil should be within three kilometers of a school to ensure that all children have easy access to education without incurring transport costs. This implies that each village should have at least one primary school.

Additionally, for secondary education, it is proposed that each commune should have a lower secondary school while each district should have a combined school offering upper secondary grades. Exceptions may be made in remote areas where student numbers are low.

To reach the above goals and to respond to demands for school buildings in the country, several projects for school construction have been undertaken. Currently, there are two main school expansion projects respectively funded under the Second Education Strategic Development Plan (ESDP II) by the Asian Development Bank (ADB) and under the Cambodia Education Sector Support Project (CESSP) jointly by the World Bank (WB) and the Royal Government of Cambodia (RGC) (Annex E).

With the total estimated budget of US$27 million, these two projects for school construction were put in operation in 2006 and will be completed in late 2009 or early 2010 by offering about 756 new school buildings

With the total estimated budget of US$27 million, these two projects for school construction were put in operation in 2006 and will be completed in late 2009 or early 2010 by offering about 756 new school buildings to Cambodia, breaking down into 19 primary schools, 663 lower secondary schools, and 74 upper secondary schools as detailed in Table 6. A number of schools have also been constructed under JICA's Cooperation in Education Sector in Cambodia (Annex F)

YEAR	06-07	07-08	08-09*	Total
Asian Development Bank (ESDP II) (1)	**178**	**153**	**143**	**474**
LSS	168	124	108	400
USS	10	29	35	74
Allocation in million US$	5.7	5.4	7.1	18.2
World Bank (CESSP) (2)	**180**	**57**	**45**	**282**
PS	7	12	-	19
LSS	173	45	45	263
Allocation in million	5.9	2.3	1.0	9.2
Total school buildings	**358**	**210**	**188**	**756**
PS total	7	12	-	19
LSS total	341	169	153	663
USS total	10	29	35	74
Allocation in million US$	**11.6**	**7.7**	**8.1**	**27.4**

Table 8/ New School Buildings Constructed with Support from ADB and WB

Source: Compiled from (1) ESDP II workplan, (2) CESSP documents and interviews with a national consultant

*Note: PS = Primary School, LSS = Lower Secondary School, USS = Upper Secondary School, * estimated data for CESSP 08-09*

The number of classrooms required in 2010 was projected by MoEYS in the ESP to be 64 thousand equaling roughly 13 thousand school buildings (Table 7). It can be inferred that from 2006 to 2010, about 1.5 thousand new school buildings are needed. Since the total new school buildings constructed under ESDP II and CESSP projects will be about 756 by early 2010, another 750 new additional school buildings should be constructed in the following years before the end of 2015. In this case, it is crucial that the proposed new school construction projects should integrate DRR concerns so that the new buildings will be resilient to hazards and thus help to assure the attainment of "Education for All".

Another 750 new additional school buildings should be constructed in the following years before the end of 2015.

Table 9/ Number of Classrooms Required

	2005	2006	2007	2008	2009	2010
Primary	39,514	39535	39207	38972	38973	39452
Lower Secondary	9989	11039	11886	12500	13851	15201
Upper Secondary	4542	5458	6444	7500	8231	8962
Total	54045	56032	57537	58972	61055	63615

Source: MoEYS (2005), "Education Strategic Plan (ESP) 2006-2010"

Note: 2006-2010 numbers are projected by MoEYS

Furthermore, a Fast Track Initiative Catalytic Fund (FTI CF) grant totaling US$57.4 million was approved in May 2007

Furthermore, a Fast Track Initiative Catalytic Fund (FTI CF) grant totaling US$57.4 million was approved in May 2007 by the FTI Catalytic Fund's Strategy Committee, based on the Education Sector Working Group (Annex H for the detail of this ESWG) technical appraisal that won Cambodia's endorsement into the EFA-FTI in 2006 and the presentation of a proposal for funding in Bonn on May 23, 2007. The grant provides partial funding for Cambodia's strategy to attain universal primary school completion by 2015. The strategy encompasses six broad themes:

- School facilities, water and sanitation
- Textbooks, learning materials and teachers manuals
- Teacher upgrading; in-service teacher upgrading and preparation for policy-making and leadership in the education sector
- Improving school management (education assessment, reporting, planning and budgeting)
- Early childhood education
- Reaching the un-reached

This FTI project presents another opportunity for the government to integrate DRR concerns into the first theme, namely school facilities, water and sanitation.

This FTI project presents another opportunity for the government to integrate DRR concerns into the first theme, namely school facilities, water and sanitation.

JICA has a number of projects focused on the education sector in Cambodia. JICA has constructed several schools under its "Cooperation in Education in Cambodia" Program. Details of JICA's history of cooperation in Cambodia are in Annex F. The number of primary schools/classrooms constructed is as below:

7. Primary school construction: Phase 1 (2004-2005) and Phase 2(2005-2006)

Achievement in the primary school construction project in PP:

- Phase 1 (2004-2005): 5 buildings/ 111 equipped classrooms,
- Phase 2 (2005-2006): 6 buildings/ 113 equipped classrooms.

In addition they have implemented other projects focused on capacity building in the education sector -

8. Technical Assistance (Education Planning Advisor, DoP)

9. JOCVs and SVs

- JOCV: Young volunteer
- SV: Senior Volunteer

10. STEPSAM: Secondary School Teachers Training Project in Science and Mathematics (2000-2005)

- Training to the trainers at National Institute for Education;
- Conducting experiments on Science and Mathematics
- How to produce and to use the teaching material

11. ISMEC: Improvement of Science and Mathematics Education in Cambodia (2005-2007)

- Curriculum: Grade 10 to Grade 12
- Textbook: Grade 10
- Teacher manual: Grade 10
- Capacity building to MoEYS

12. STEPSAM2: Science Teacher Education Project in Cambodia (Sep 2008- Oct 2012)

- Trainers training at Provincial Teachers Training College (PTTC) and Regional Teachers Training College (RTTC)
- Selection and training of NT
- Planning and preparation of TTC trainers training
- TOT for science trainers at 6 RTTC and 18 PTTC
- Materials development
- INSET for Science Teachers in pilot province (BTB and PV)

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▪ Selection and training of NT
▪ Planning and preparation of TTC trainers training
▪ TOT for science trainers at 6 RTTC and 18 PTTC
▪ Materials development
▪ INSET for Science Teachers in pilot province (BTB and PV)

UNICEF is working on non-structural measures, and details of one of their initiatives "Child Friendly Schools" is in Annex G. UNICEF focuses on six dimensions of CFS with possible link to disaster risk reduction:

- Get the children to the school
- Curriculum should be relevant to the children
- School should be SAFE (safety drill, safe eating, safe living and free from violence in schools)
- Gender sensitive access to the information
- Community participation for good quality of education
- Enabling system, policy etc.

UNICEF helped MOEYS to develop the "Green Book". To execute these there are implementation manuals. These manuals cover each of the 6 dimensions. The manual has a teacher's guide and a training plan. This helps the school implement the green book and the 6 dimensions in the schools. DRR can be integrated in dimension 2 and 3. In dimension 2 DRR concepts can be part of teaching materials. In life skills, DRR skills such as swimming or first AID (with help from CRC) can be taught. This can be added in local content.

The following table (Table 8 and Table 9) provides a list of projects, including the ADB and ESDP II presented earlier, in Education Sector. All these projects constitute an opportunity for the Cambodian Government to mainstream DRR in teaching as well as in the school construction. More details are in the Annexed report on the National Workshop.

Table 10/ Overview of ADB school construction projects in Cambodia: 2001 – 2010

Project Name and Objectives	Project Loan	Facilitates Development
EMERGENCY FLOOD REHABILITATION PROJECT (EFRP): PART D – EDUCATION Objective of the Project: ▪ To rehabilitate key infrastructure damaged by the 2000 floods ▪ To enable the early restoration of economic and social activity, especially for the rural poor.	*ADB LOAN NO. 1824 – CAM (SF), 2001-2003* ▪ Total Loan Amount: $55 million for 5 sectors ▪ Total for Part D: Education: $5.8 million (10.55% of the Total Loan)	*ADB EFRP* ▪ 202 Schools, 837 Classrooms - $4.32 mill ▪ 2 Schools, 11Classrooms Repair - $0.03 mill.
FLOOD EMERGENCY REHABILITATION PROJECT (FERP)- SCHOOLS COMPONENT	*IDA CREDIT 3472 – KH, 2001-2004*	WB FERP ▪ 371 Schools, 1,459 Classrooms - $7.62 mill. ▪ 3 Schools, 33 Classrooms – Repair - $0.03 mill.
EDUCATION SECTOR DEVELOPMENT PROJECT (ESDP) Objective of the Project is to supplement the policy initiatives by supporting: ▪ increased access and equity, mainly for basic education ▪ deconcentrated and decentralized planning, management and monitoring ▪ selective quality ad efficiency improvement in budget planning, accounting and auditing and TVET	*ADB LOAN NO. 1865 – CAM (SF), 2002-2007* **DETAILS OF SCHOOL FACILITIES – ESDP** **PRIMARY SCHOOLS** : 344 Schools, 1418 Classrooms ▪ Village without Primary : 70 Schools, 273 Cl. ▪ Incomplete Primary: 125 Schools, 490 Cl. ▪ Overcrowded Primary: 149 Schools, 655 Cl. **SECOND. SCHOOLS** : 187 Schools, 928 Cl. ▪ Cluster without LowSec: 126 Schools, 627 Cl. ▪ Incomplete Lower Sec. : 8 Schools, 37 Cl. ▪ Overcrowded LowerSec: 36 Schools, 175 Cl. ▪ Incomplete/Over. US: 65 Schools, 187 Cl	ESDP: SCHOOL FACILITIES 1st Phase : 59 Schools, 258 Classrooms 2nd Phase : 93 Schools, 390 Classrooms 3rd Phase : 143 Schools, 663 Classrooms 4th Phase : 85 Schools, 397 Classrooms 5th Phase : 83 Schools, 321 Classrooms 6th Phase : 62 Schools, 285 Classrooms Total: 525 Schools 2,316 Classrooms = USD 14.5 Million ESDP: OTHER FACILITIES Teacher Quarters (2 Phases) : 101 TVET Centers (3 Phases) : 8 Teacher Training/Resource Centers : 14 Phnom Penh Resource Center : 1 Secondary Schools in Phnom Penh : 6 Total Construction Amount, including 525 schools = US$18.40 million

Project Name and Objectives	Project Loan	Facilitates Development
SECOND EDUCATION SECTOR DEVELOPMENT PROJECT (ESDP II) **Objectives of the ESDP II:** ▪ Poverty Reduction by improving access to and the quality of basic and upper secondary education, and life-long learning opportunities for out-of-school youth through ▪ Lower secondary education opportunities ▪ Upper secondary education opportunities ▪ Community-based skills training in poor communes	***ADB LOAN NO. 2122 – CAM (SF), 2005-2010*** **PROJECT TARGETS – ESDP II Facilities** ▪ SCHOOLS – LOWER SECONDARY: 400 ▪ RESOURCE (MODEL) U SECON SCHOOLS: 24 (one in each province/ municipality) ▪ NEW UPPER SECON SCHOOLS: 25 (one in each district without upper secondary school) ▪ REBURBISHMENT OF USS: 25	**WORK PLAN – ESDP II** PHASE 1 (Actual): 5 Provinces, 50 Schools = US$1.551 million PHASE 2 (Actual): 6 Provinces, 48 Schools = US$1.621 million PHASE 3 (Actual): 6 Provinces, 70 Schools = US$2.410 million ▪ 7 New Upper Secondary Schools = US$0.259 million ▪ 3 Upper Secondary Schools refurbished = US$0.069 million PHASE 4 (Actual): 6 Provinces, 50 Schools : US$1.720 million ▪ 7 Upper Secondary Schools = US$0.270 million PHASE 5 (Proposed): 7 Provinces, 71 Schools = US$3.609 million ▪ 7 Resource (Model/Core) Schools = US$1.750 million ▪ 3 Upper Secondary Schools = US$0.217 million PHASE 6 (Still to be decided): 7 Provinces, 38 Schools = US$2.660 million ▪ 9 Resource (Model/Core) Schools = US$2.250 million ▪ 4 Upper Secondary Schools = US$0.280 million PHASE 7 (Still to be decided): 7 Provinces, 26 Schools = US$1.61 million ▪ 8 Resource (Model/Core) Schools = US$2.000 million ▪ 2 Upper Secondary Schools = US$0.140 million

Table 10/ Continued...

Table 11/ List of Donor Funded Projects in Education Sector in Cambodia

No.	Country	Project name	Project Objective	Funding agency	Loan/ Funds amount	type of fund	Project duration	Execution agency
1	Cambodia	Education sector development program	▪ to contribute to Cambodia's broader poverty reduction policy ▪ to support the implementation of policies designed to improve equitable access to quality education for under-served and disadvantaged populations	ADB	USD 20 million	Loan	2001-Nov 2007	MoEYS
2	Cambodia	Education Quality Improvement (formerly Enhancing Quality of School Education, originally Education Sector Development)	(i) developing a policy framework for teacher development, including a review of the institutional network to support teacher development and issues related to recruitment, deployment, qualifications, professional development and career growth, and incentives, and suggesting supporting interventions; (ii) filling the gaps in curriculum development and linking it to teacher training; (iii) text book availability; (iv) review of, and improvements in, the assessment and examination system; (v) management of education delivery systems including school management; and (vi) strengthening capacity for planning and management through an Education Management Information System (EMIS)	Japan Special Fund	US$ 500,000	TA	2004-2008	MoEYS
3	Cambodia	Enhancing Secondary Education	to be provided	ADB	US$30.0 million		9 Dec '04 - 9 Dec '09	Ministry of Labor and Vocational Training, MoEYS
4	Cambodia	Dormitories and Learning Centers for Secondary Schoolgirls (formerly Dormitories for Secondary School Girls)	(i) improved access to secondary education for girls; (ii) enhanced quality of learning through life skills training and ICT; (iii) gender capacity building in education; and (iv) TA management, evaluation, research, and knowledge management.	ADB	US$ 800,000	TA		MoEYS

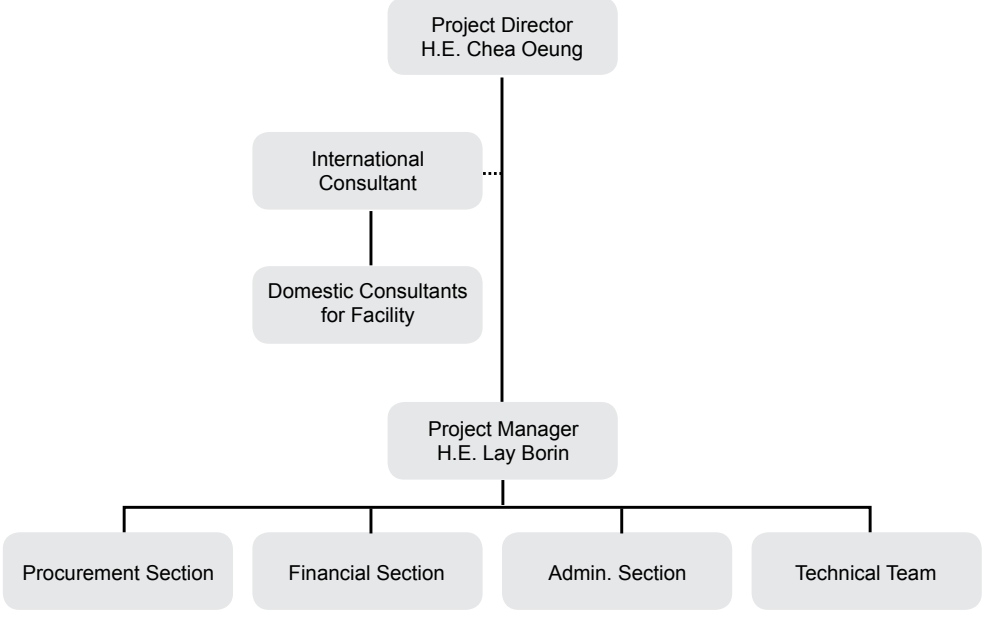
1.3 MoEYS ORGANIZATIONAL STRUCTURE FOR SCHOOL CONSTRUCTION

As mentioned earlier Cambodia has no national annual budget allocated for either school construction or reconstruction. The organizational structure of the education sector for building construction depends on each main school expansion project specifically. It is noted that currently there are two such projects, namely the Second Education Strategic Development Plan (ESDP II) and the Cambodia Education Sector Support Project (CESSP), funded respectively by the Asian Development Bank (ADB) and jointly by the World Bank (WB) and the Royal Government of Cambodia (RGC).

It is worth highlighting that the two projects have similar organizational structures. According to the figures 8 and 9 below, the main difference between the two structures is that the term Project Director in the ESDP II project refers to Project Manager in the CESSP project, and the term Project Manager in the ESDP II project refers to Project Coordinator in the CESSP project (Figure 14).

Figure 14/ ESDP II Organizational Structure

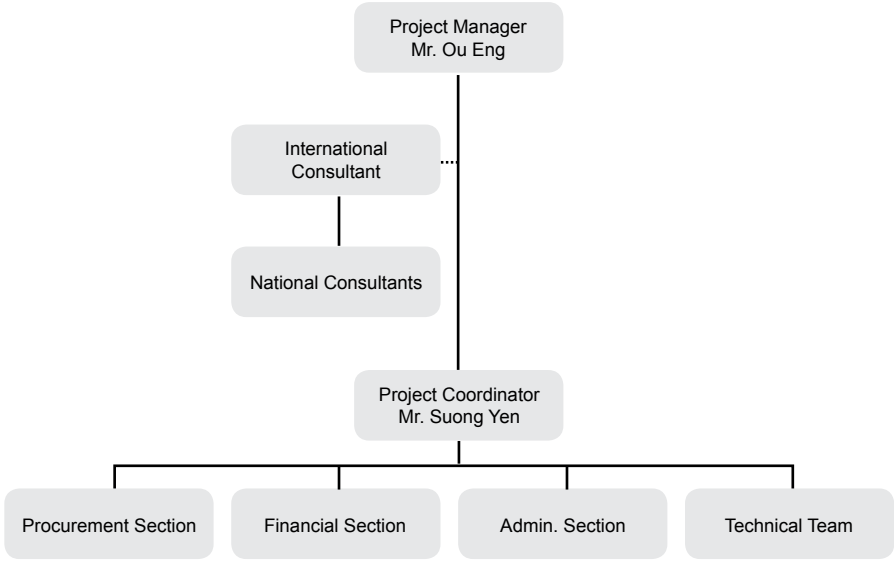
Source: Interview with ESDP II project manager



Generally, there is a project director/manager and a project manager/coordinator who supervise the whole project, with the assistance from an international consultant. The international consultant has, in turn, national or domestic consultants to render assistance.

Figure 15/ CESSP Organizational Structure

Source: Interview with CESSP project manager



According to the same figures, the different sections in the structure include a Procurement Section to ensure an open and fair bidding process, a Financial Section and an Administration Section to manage the financial and administrative issues of the project, and a Technical Team composed engineers and architects to make sure the contractors comply with the technical standards set by the projects. In the CESSP project, there are also five provincial engineers located in five provinces where the projects exist to supervise the construction work, in addition to these national-level technical personal. Each provincial engineer will be sent to another province once the construction work is finished in his/her province (Figure 15).

1.4 PAST EXPERIENCE OF SCHOOL CONSTRUCTION

In the 1990s, many schools were built without proper compliance to an acceptable standard. Actually, there were no standards or specifications from the Ministry of Land Management, Urban Planning and Construction (MoLMUPC), or the MoEYS over the technical norms of building construction. The typical school building plan and technical specifications that are in use nowadays were only developed and compiled as guidelines during the implementation of ADB funded Emergency Flood Rehabilitation Project (EFRP) during 2001-03 and WB funded Flood Emergency Rehabilitation Project (FERP) during 2001-04.

Before that, many schools were built by local and private international donors, most of whom are government's high-rank officials. Due to the lack of technical specifications, coupled with insufficient capacity among the contractors, some schools in the flood prone areas were not properly elevated to an altitude higher than the level of water in flood period. When the level of flood water is abnormally high, this problem is even more serious as it impacts the safety of the building. The teaching of students is also seriously disrupted.

Case Study 1:
Bunrany Hun Sen Peam Raing Secondary School

This case study addresses the importance of mainstreaming disaster risk reduction (DRR) into study program piloted in a flood vulnerable school of Kandal province. At the same time, it also raises a bad practice of previous school construction, which did not include proper flood resistant features.

School History

Bunrany Hun Sen Peam Raing is the upper secondary school in Peam Raing commune of Leuk Daek district, one of the first priority flood prone areas in Kandal province. The school was built in the Sangkum Reastr Nyum regime and reconstructed by local communities after it was destroyed in the Pol Pot regime during late 1970s.

Under strong support from a head of Buddhist monks of Peam Raing Leu pagoda, a school building was built from concrete by villagers in 1986 by following the same norms of construction of the old buildings, which the plinth level is less than one meter high from the ground. Later on, the other two new buildings were offered by the Prime Minister Hun Sen and built by a local construction company in 1996 under the previous norms of building construction.

Current Situation

Presently, the school has four buildings comprising 17 rooms and a big school ground located in a plot of land which has a lower level than that of the new road constructed along the front side of the school. This road was built with a higher level to avoid flood damages compared to the previous one by the Ministry of Rural Development in around 2006 and recently expanded until Khporp Ar'teav, another commune of Leuk Daek district situated several kilometers away from the school.

In the academic year 2007/2008, total student enrollment in the school is 711 students, about 336 of whom are female. The school has 25 teachers coming from various parts of Leuk Daek district, giving pupil-to-teacher ratio of around 29 students which is lower than the ratio of upper secondary school in the whole country, which is about 33 students.

The new intake of this school usually starts around one month late compared to the other schools in the country because of flooding which begins in September and ends in October each year. The delay of new intake results in difficulty of study program accomplishment as the school can complete only 85 percent of the programs though it tries to give some extra teaching to students during the free time, so the quality of the education provided in this school is somehow limited, according to the school principal's observation.

Experience from Past Disasters

Up to date, this upper secondary school has experienced floods every year and a small storm in 2003 which destroyed some parts of the school roof. The severe flood in 2000 damaged the school floor, causing an estimated loss of about US$4,000, and has gradually affected wall of several school buildings. Besides, the uses of school as an emergency shelter for cattle has often disrupted the school, particularly in 2001 and 2002 due to damaged floor in several classrooms.

The uses of school as an emergency shelter for cattle has often disrupted the school, particularly in 2001 and 2002

It is worth noting that all buildings of the school were constructed without proper flood resistant features because the plinth was not lifted from the ground though knowing that the school is located in the flood prone area.

It is worth noting that all buildings of the school were constructed without proper flood resistant features because the plinth was not lifted from the ground though knowing that the school is located in the flood prone area. This is due to two main reasons: on the one hand, from past experience, floods were not as severe as in 2000, making constructors not taking into account the construction features which can resist a large flood with a 100-year recurrence and one percent probability of occurring in any year. Thus, the plinth was not necessarily lifted up from the ground. On the other hand, there was neither building code nor technical specifications from relevant ministries at that time.

Floods disrupt not only the school building but also the quality of education. A teacher of the school who also joined the focus group discussion complained that it is difficult to accomplish the study program on time because of two disrupting factors. "First, the school is one month behind schools in other places as it started late due to flooding, so we already lose one month. Second, all teachers have to teach slowly as they have to help weak students who start their new intake late catch up with the others. In this case, we can hardly complete all study subjects according to the MoEYS schedule. As a result, the quality of our education service is limited compared with others in the country", said the teacher who also teaches DRR related subjects in the school.

In addition, the focus group discussion with teachers in the school proves the rate of student drop-out in relation to difficulties caused by flood is low while that of student absenteeism at the beginning of the new academic year is rather high. It should be noted that students whose houses are located in other communes outside the school's commune like Khporp A'Teav, Sandar, and Kaam Samnor have to use a small machine boat to go to school, spending an average two dollars for a two-way trip. To reduce such high cost of traveling, the student who is the owner of the boat asks the nearby students to join the trip to school by sharing about US$0.25 per person, as one boat can contain around eight people. Yet, those who live in poor families still cannot afford to cover such expenses and thus suspend their studies for about one month until the flood has gone away.

Both the drop-out and suspending rates are gradually decreasing, on account of newly constructed road which is higher from flood level

During the last three years, the drop-out rate averages only around one percent per annum which is well below the annual absenteeism rate averaging about ten percent. The table below reveals that both the drop-out and suspending rates are gradually decreasing, on account of newly constructed road which is higher from flood level and gives a wider access to school to students whose houses are far away.

Bun Rany Peam Raing Upper Secondary School						
Academic Year	Student	Female	In relation to flood		In relation to floods (%)	
			Absenteeism	Drop-out	Absenteeism	Drop-out
04-05	603	225	68	12	11.3%	2.0%
05-06	622	264	65	3	10.5%	0.5%
06-07	646	300	56	2	8.7%	0.3%

Source: Author, compiled from the school's records

Good Practice of Disaster Risk Reduction (DRR)

"After attending the DRR courses, students know how to prepare for the upcoming floods. When I went to a small shop in the village, a woman who is a mother of a student told me that her child now knows how to be careful with the flood and even reminds her to store some food and find safe places to evacuate her cattle when the flood comes.", said Long Moeun, the school principal.

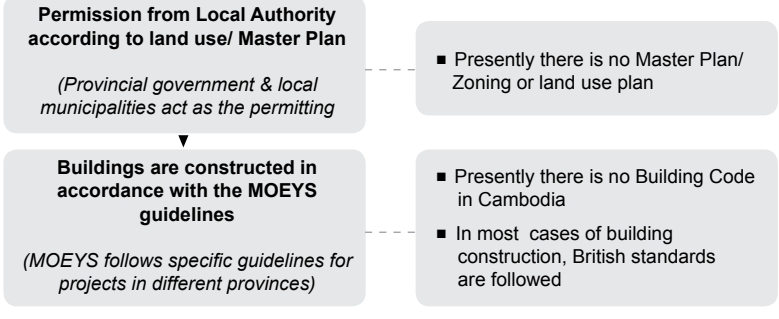
"Still, there is some limitation of mainstreaming DRR to my students. When students come to school during flooding via a small machine boat, they do not wear life jackets because they think that they know well how to swim and do not want to spend money on buying such things.", added Moeun.

This experience illustrates how important it is to consider very carefully the plinth level of the school building before the construction, to ensure that the school is above water level even in a 100-year high level of flood. In addition, materials used for the construction have to be of the highest quality available to make sure the buildings can provide enough resistance in the flood period. A mixed concrete/brick structure serves as a good example of flood-resistant building.

1.5 PRESENT METHODOLOGY OF SCHOOL CONSTRUCTION

A. Construction Process

Following steps are followed for construction of school buildings in Cambodia.



Source: Law on Land Management, Urban Planning and Constructions (Preah Reach Kram/04NS94/10th August 1994)

These steps are followed by all public schools construction in the whole country. For the private schools, they are too few to consider and most of them are located in central Phnom Penh.

In practice, however, there are two main methodologies of how the building construction is done depending on where the school is located. Normally, a National Competitive Bidding (NCB) is convened for one or more school building construction. But if the school is located in remote areas, then the Community Construction process will be adopted.

According to the Department of Planning of MoEYS and the national policy, the following criteria are to be considered for the decision for construction of a school:

- Specific demand exists (sufficient number of students)
- There is a land plot for school construction
- Teachers will be available in the area
- The local community wants the school and will look after it
- The commune does not have any school yet

A typical process of school construction is as follows:

Based on the above criteria, once there is a demand from the community for a school (especially the Lower Secondary School), the commune council will send the request to the District Office of Education who will forward it to the Provincial Department of Education and the MoEYS. The MoEYS then send the request to either ESDP II or CESSP to examine whether the request should be fulfilled. If the investigation shows signs of compliance to the criteria listed above, a site investigation will be conducted by the technical team of the projects to see whether and how the school building can be constructed on the designated site. Following this step, a National Competitive Bidding (NCB) or a Community Construction process can be adopted depending on the location of the building. The NCB means that the bidding is done nationally, with everyone competing fairly and openly, while the Community Construction refers to the construction by the local people and, to a certain extent, local materials.

During the construction, there are regular inspections from the provincial engineer, the national consultants, as well as the international consultant to make sure that the building complies with the technical standards agreed initially between the contractors and the project authorities. The finishing and the furniture to be equipped in the classrooms are also important points for the inspectors to check. The payments between to the contractors, are done step by step, i.e. the payments are made after each phase of the construction.

Case Study 2: Sok An Wat Ang Primary School

Mainly focusing on the site selection for school construction, this case study will reinforce the necessity of DRR mainstreaming into primary education in a flood prone country like Cambodia. Therefore, an example of one primary school situated in a vulnerable area of Kirivong district in Takeo province is brought for the case study as detailed below.

School History

Created in 1984 with a wooden building by local community and the nearby pagoda, Sok An Wat Ang primary school is situated on a hilly plot of land in the center of Kamnop commune in Kirivong district, Takeo province. Until late 2004, a new school building from concrete and reconstruction of the existing old building were materialized under financial support from His Excellency Sok An.

Current Situation

Currently, Sok An Wat Ang primary school has four buildings comprised of ten rooms. The total enrolment from grade 1 to 6 in the academic year 2007/2008 is 385 students, 199 of whom are female representing about 52 percent of total students in that year. There are five teachers in the school, and all are male coming from various places of Kamnop commune of Kirivong district.

Normally, new academic year of the school begins in the end of October or early November or around one month late compared to the other schools, depending on duration of floods. In this case, the school cannot complete all lessons on time set by MoEYS. However, since the flooding season in the school site starts from September to October, the school can afford to finish the study programs by teaching students during the first month of vacation which is in around August each year.

Experience from Past Disasters

Though situated on a hilly plot of land, the school has experienced floods every year and occasionally experienced storms. The 2000 and 2001 floods generated losses of respectively US$148 and US$150 to the school, according to the school principal's estimation. A storm in 2007 affected roof of the school building, but the damage caused was little and did not disrupt the study program.

As could be found in the previous case study, floods provoke not only physical impacts on school but also difficult access to school to students. "Students have to catch boat to school during flooding, particularly the first few months of new academic year. During this period, students coming from other villages such as Kamnop, Derm Slaeng, and Chamkar Teab may take around 50 percent longer time to reach school, compared to the dry season.", said Gnorn Sieng, the school's principal. He added that sometimes students get wet when arriving at school as the boat was full of water, but fortunately did not drown.

The drop-out and suspending rates are not decreasing due to the fact that the access to school is still under water during flooding season.

During the last three years, the drop-out rate averages around three percent per annum which is well below the annual absenteeism rate averaging about eight percent. The table below reveals however that both the drop-out and suspending rates are not decreasing due to the fact that the access to school is still under water during flooding season.

Sok An Wat Ang Primary School						
Academic Year	Student	Female	In relation to flood		In relation to floods (%)	
			Absenteeism	Drop-out	Absenteeism	Drop-out
04-05	329	142	28	10	8.5%	3.0%
05-06	370	183	25	11	6.8%	3.0%
06-07	383	199	32	12	8.4%	3.1%

Source: Author, compiled from the school's records

In this situation, some parents do not allow their young children to go to school because they are afraid that their children could drown in water while catching boat to reach the school, making the number of students absent rather high during the beginning of the new school year. It can be said that mainstreaming DRR into primary education is important as it can teach young students how to protect themselves from disasters, such as floods.

Good Practice of Disaster Risk Reduction

Good site selection for school construction is an effective and efficient mean for reduction of disaster impacts specifically on school buildings. According to the qualitative interview with the school's principal, the plot of land where Sok An Wat Ang primary school is situated is in the highest place in the village which is the center of Kamnop commune. Actually, it is the land of the pagoda nearby and was given to the school by the local community and authority.

Thus, floods do not severely damage the school building though the plinth was not lifted up from the ground. Yet, it is sometimes difficult to find such perfect place for school construction as it depends on the nature of land in different locations.

B. School Building Design and safety provisions

As Cambodia does not have any Building Code yet, currently MoEYS use a document which was developed and compiled as guidelines during the implementation of ADB funded Emergency Flood Rehabilitation Project (EFRP) and WB funded Flood Emergency Rehabilitation Project (FERP)

As Cambodia does not have any Building Code yet, currently MoEYS use a document which was developed and compiled as guidelines during the implementation of ADB funded Emergency Flood Rehabilitation Project (EFRP) during 2001-03 and WB funded Flood Emergency Rehabilitation Project (FERP) during 2001-04. All the improvements till date have been undertaken by various projects working closely with the Department of Materials and State Property (DMSP) of the MoEYS.

The design and technical documents as well as guidelines for implementation under the centralized and delegated systems were further improved during the implementation of ADB funded Education Sector Development Project (ESDP) during 2002-07. The design and technical documents are continuing to be improved in the implementation of the ongoing WB funded CESSP and ADB funded ESDP II.

The standards are converted into a typical plan of construction for any school building, with adjustments made to the 3-classroom buildings and the 5-classroom buildings. Adjustments are also made to differentiate the elevated schools from the non-elevated ones. Annex F provides a typical plan for an elevated school construction.

Technically, the design is good since it provides a concrete and brick building which is more resistant than the wooden one. In terms of disaster risk reduction, the building also provides better resistance to floods and storms. In addition, the concrete and brick building is more sustainable, meaning that it will last longer and require less maintenance than the wooden one. The design also takes into consideration the level of flood in the area during the flooding period, and then translates this into adjustments for elevated schools and non-elevated ones.

Case Study 3: Koh Sampov Lower Secondary School

This case study will highlight the good practice of DRR of a lower secondary school construction in Koh Sampov commune of Peam Chor district, Prey Veng province which is another flood prone area in Cambodia. This commune is located in one of the most remote areas in Cambodia bordering with Vietnam. The school building is elevated to avoid flooding.

School History

Koh Sampov lower secondary school was recently created in the academic year 2007/2008 by borrowing a building from one primary school called Svay Andoung, located about 2.5 kilometers away from its new school site. However, it will move to a new building starting from the next academic year.

The new building of this school, which comprises of five classrooms and a separate four-room toilet, has been under construction since mid 2007 through the CESSP project jointly supported by the World Bank and the Royal Government of Cambodia. The school was built on a new land bought from a villager in Ampov Prey village of Koh Sampov commune.

Selection of the school site was done with two criteria: the center of Koh Sampov commune, and the high ground.

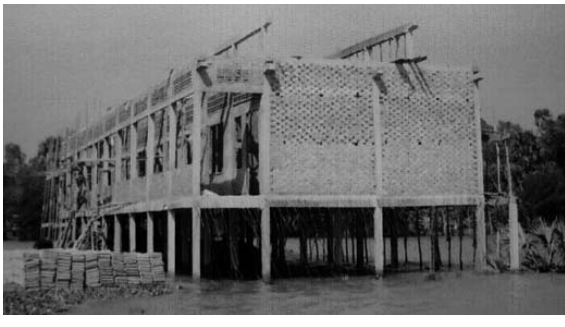
This plot of land is on high land in the commune, which can at least avoid damages from small floods.

Current Situation

Till date, 70 percent construction of this lower secondary school has been accomplished and only the roofing and finishing remains, which will be completed in the next few months. There are currently eight teachers teaching 72 students in the school which has two classes of the seventh grade running in one-shift timetable in the morning. The school is facing lack of facilities (tables and chairs) as well as teaching materials (books, chalk, etc.), said Bun Phal who is the principal of Koh Sampov lower secondary school.

Good Practice of Disaster Risk Reduction

According to an interview with the school principal, selection of the school site was done with two criteria: the center of Koh Sampov commune, and the high ground. The plot of land selected for school construction is situated in the center of Koh Sampov commune, so all students in other villages of the commune namely Svay Andoung, Pau Thmey, Ampov Prey, etc, can have an easy access to the school. Besides, this plot of land is on high land in the commune, which can at least avoid damages from small floods.



Although located in the highest altitude in the commune, the plinth of the school building structure is lifted 2.5 meters up from the ground to avoid severe floods which may happen once in 100-year time with one percent probability of occurring in any year.. It should be noted that all the areas in this commune receive flooding every year and the level of the 2000 flood in the above selected school site was around two meters, which made all areas on the hill get flooded. Yet, the new school building is constructed at a level above even that of the 2000 flood, which means the school will remain open even during floods albeit using boats to travel to school.

But regarding the DRR concerns, below is an overview on the Bidding document prepared by MOEYS for school construction project funded by the World Bank. This document is a guide for construction of school buildings in the Provinces of Svay Rieng, Prey Veng, Kratie, Mondulkiri, Ratanakiri and Kandal. The document provides detail guides for construction and design. However, there are some shortcomings in the guidelines regarding construction in areas prone to disasters like flood and drought. These are as follows:

- This document only provides guidelines for Concrete/ Brick Structure school buildings.
- Elevation of school sites have not been emphasized in the guidelines.
- Section A- 4.0 (page 59) instructs for earth filling of the site. However it does not specify the elevation (height) of the earth filling whether it will be free from flood or not.
- Section A-33 (page 65) instructs the provision of water storage. But it does not specify the place whether free from flood or not.
- Section D-1 (Page 69) regarding water well, it does not instruct to set it in a place above the average flood level.

Those are the gaps in the guidelines that need to be addressed by stressing the importance of integrating DRR concerns into the document so that big losses can be avoided from future disasters.

C. Existing Capacity for School Construction

Cambodia's capacity for school construction is clearly not in good health. In urban areas where there exist a lot of construction firms, this issue may not be a problem. But in the rural and remote areas where there exist only local sub-contractors or community construction team, this problem is severe in regards to their technical and managerial capacity. Moreover, the national and international consultants go rarely to these places to check for the technical compliance as the remote areas are difficult to access. And if the school construction sites are located in disaster prone areas, technical compliance becomes more critical for the resistance of the building against the disasters such as flood or storm.

At the provincial and national level, there is also a lack of engineers and architects to monitor and control the construction process as effectively and comprehensively as desired. This may lead to some loopholes in the process resulting in defective construction.

PART: D
RECOMMENDATIONS AND SUGGESTED NEXT STEPS

1.1 RECOMMENDATIONS FOR STRATEGIC AND SECTOR DEVELOPMENT PLAN

- DRR and/or "Safer construction of school buildings" should be an integral part of the Education Strategic Plan (ESP); an element lacking in the latest ESP (ESP 2006-2010). There is a prospect to add DRR in Section 4.4 of the Plan: Strategies for Addressing Cross-cutting Issues. This can be done by the MoEYS. The MoEYS's senior technical staff and technical consultants of the ESWG should tackle this problem in their next revision of the plan.
- The financial planning and budgetary forecasts clearly show (in ESP, ESDP) the objective to spend capital on basic education facilities development including new schools establishments and renovating old ones, which amounts to US$50 million during 2006-2010. The Department of Planning of MoEYS should stress in the plan that construction and renovation practices incorporate DRR concerns so that the built structures and the renovated ones become hazard resilient.
- DRR concerns should be incorporated in the long term Strategic Plan of the Education Sector so that safe school buildings are achieved in the goals and objectives. In such a Plan in Cambodia (i.e. Education for All by 2015) it is projected that the MoEYS's contribution in developing additional facilities and capacity building will increase from around US$24 million per annum in 2002 to around US$59 million per annum by 2015. However, there is a lack of linking DRR or safer school construction with the Strategic Plan, which needs to be addressed by the senior policy makers of MoEYS.
- The MoEYS must seek inter-ministerial and inter-departmental cooperation and collaboration with the MPWT, the Ministry of Post and Telecommunication and other relevant institutions, which are needed for implementing the holistic approach of DRR. It has been demonstrated that floods do not only damage the school buildings but also create communication or access problems and sometimes result in schools being used as a shelters. Since disasters do not only disrupt education but often cause indirect impacts (e.g., damaging roads, stop using the school for education, hindering access to the school for pupils), such collaboration is very much required in order to develop resilient infrastructures and communication means like roads and flood shelters.

DRR and/or "Safer construction of school buildings" should be an integral part of the Education Strategic Plan (ESP)

The Department of Planning of MoEYS should stress in the plan that such construction and renovation practices incorporate DRR concerns so that the built structures and the renovated ones become hazard resilient.

DRR concerns should be incorporated with the long term Strategic Plan of the Education Sector so that the safe schools or safe school buildings are achieved in the goals and objectives.

1.2 RECOMMENDATIONS FOR STRUCTURAL MEASURES

- Specific construction guidelines and building codes that integrate DRR must be issued by the MoLMUPC in consultation with the MPWT and other relevant ministries/institutions. Although MoEYS (in Cambodia) provides guidelines for school building constructions, DRR

Site selection should be an important task for new school construction. Land use plan along with construction guidelines and building codes are required

Capacity development of training institutes, especially the Institute of Technology of Cambodia and the Faculty of Architecture and Urbanism of the Royal University of Fine Arts who train engineers and architects respectively

issues have not been incorporated properly in the recent construction of school buildings under World Bank and ADB funded projects. While the issuing procedure of the construction guidelines and building code may require time, the immediate measure should be to analyze the proposed school designs by an Engineer using the guidelines of UNDP or guidelines from the Government of India/Bangladesh/New Zealand in order to find out the deficiencies and/or discrepancies. Such integration will reduce the economic loss in terms of rebuilding and repairing of school buildings after disaster.

Site selection should be an important task for new school construction. Land use plan along with construction guidelines and building codes are required to be considered while setting up a school building in a flood/ disaster prone area. But as the land use plan is not yet available, construction guidelines and building codes need to be analyzed properly with the local context and the disaster occurrence history. Local level collaboration among education, local government and land departments are needed for future well being of the education sector and hence for the society.

- Development of training modules and capacity development of training institutes, especially the Institute of Technology of Cambodia and the Faculty of Architecture and Urbanism of the Royal University of Fine Arts who train engineers and architects respectively, for training in safe construction practices which integrate DRR. The training modules will be available for architects, engineers, developers, masons and the community.

A. Suggestions for Better Practices in School Construction

The methodology of school construction in Cambodia shows clearly that, overall, there are a few points needed to be addressed in terms of DRR concerns. The Study on "Impact of Disasters on the Education Sector in Cambodia" was presented at the National Workshop. After the presentation the participants were divided into 3 groups to discuss the recommendations with following questions:

Group 1: For safer school construction what are the steps to be taken for ensuring that all schools are built safe? The suggestions are:

- Set up a committee for the school building at the community level (school director, community leaders) to monitor maintenance.
- Capacity building of the committee members so that the committee members can explain to the architect the design that will suit the local conditions.
- Build all structures above the high flood level
- Ensure early warning of storms for the community
- Roads should be flood proof for continued access even after flood
- Train architects, private contractors, masons, etc.
- Master plan is essential. Should include the size and location of school and how much area needed for play ground and class rooms.
- Must have professional architect for school building. Also need to study the level of water and volume of flood before initiating construction.
- Knowledge should be imparted to community on what they should and should not do to ensure storm resilience in the construction. This can be done through capacity building campaign.
- Clear evacuation routes during floods or during emergency should be developed for the community.

- Need to manage and utilize funds appropriately and effectively. Community and concerned government officials should form a committee to monitor school building construction.

Group 2: What are the institutions and departments (along with donors) who should be involved in safer school construction? (Both from Government and NGOs)
The group suggested the following stakeholders:

- MOEYS
- Ministry of Transportation
- Ministry of Public works
- Ministry of Rural development
- Ministry of Planning
- Ministry of Construction
- Ministry of Finance and economic
- Local authority and community
- ADB
- WB
- JICA
- World Vision
- LWF
- BETT
- UNICEF
- Contractors

Participants discussed that stakeholder involvement in safer school construction can be ensured by involving all stakeholders in the task. The challenge is how to work with many organizations at the same time. It was suggested that setting up a committee (with line ministries together with institutions, donors and funding agencies as members) chaired by MoEYS, will solve the problem of coordination. If MOEYS needs assistance from Ministry of Transportation or from other ministry, it should be asked officially. If need for road access to school, MOEYS should inform Ministry of Transportation through Ministry of Construction about the plan and ask for technical assistance. But all should be flexible to the real situation, as per the local conditions.

Group 3: What additions should be made to the school building design so that it can be used as emergency and evacuation shelter without affecting teaching?
The comments are:

- High land for site selection
- There should be enough land for school activities (play ground, foot ball field, assembly point, etc.)
- Water storage facilities should be available. Should have clean water supply system and sanitation (if possible could set up electricity run water purifier)
- Need to have enough class rooms with sufficient toilets
- Clear evacuation route for every school
- Separate toilet for men and women with hygienic management and clean water system.
- There should be 2 to 3 floors for a school building. Then during floods students can be evacuated to the 3rd floor

- School building design should have shelter for animal and have cooking facilities.
- Trees and plants should be in the compound
- Should have gate in all schools. While preparing for budget, school gate expense should be included.

A panel discussion followed the group presentations The main points discussed include:

Dr. Mathe:

- Need a trade off in school construction - Resilient buildings are very costly. Since Cambodia is mostly affected by floods, building schools in high land is a need. But unfortunately we do no have much high land. So, need to have a trade off in building schools considering average flood height (more often) compared to highest flood height (rare flash flood). Even if toilet is raised, the soak pit still gets flooded.
- For storms, roof tiles are dangerous. Roof should be made wind resistant, to protect teachers and students.
- In NCDM there should be a sub-committee which looks after school construction and education
  - Education working group can develop the school construction guidelines and plan.
  - MOEYS should make handbooks for non-traditional constructions
  - We should train local community
  - We have many technical guidelines but no national guideline
  - There has to be a trade off in the facilities we can put in a school for use as an emergency shelter.

Loy Rego Director ADPC:

- Guidelines should be more widely disseminated
- PWG can be expanded to focus on school construction
- Education Sector Working Group can ensure that the ADB guidelines become national guidelines
- For emergency shelters, schools can add on some features (adult sanitation, cooking) only.
- The school can not be alternative to the safe area

Scott Cunliffe Regional Advisor UNDP RCB :

- Regional experience is available – try to draw on some of this experience. Can be done through MOE of other countries
- Community based early warning is available in the region
- School needs water storage, drainage, high ground (site selection), which is important.
- Monitoring is important. Investment must be sustained and this is possible only from monitoring. This will ensure adherence to standards, and good utilization of funds
- Gender needs should be addressed in design

Other comments:

- Local participation is important for transparency (social audit)
- Need to have safer schools

- Schools also should be educational centre with cooking facilities and with sanitation system
- Need to learn experiences from other countries in the region, like Philippines and Indonesia, on standard school building design.
- Community based early warning system should be learnt.
- Building code is really needed in Cambodia.
- School safety committee should be strengthened and must involve local community.
- If building is used as animal shelter during disasters, then methods have to be developed to ensure sanitation and safety of children. Proper maintenance of the buildings is also important and needs attention.

B. Suggested Construction Process

Although the overall process of school construction described earlier looks good, there's one serious concern. The selection of the site for construction does not always take into consideration the technical aspects; for instance the site location is situated in the flood prone area. This results from the fact that the projects will build a school for the commune as soon as the local community identifies a free land plot for the construction, and normally lands situated in elevated area are private property. So the projects have no choice but to build the school in the flood/ disaster prone and marginal lands.

To tackle this problem, the projects should only build schools in non-flood prone areas, if such an area exisits in the commune, even if it means they have to spend more in buying private property for construction. Site selection is the most critical part in any building construction because if a school is constructed in non-flood prone area, it will last much longer and students can still go to school (by boat) during the flood period without disrupting their studies.

Moreover, a Master Plan/Zoning or land use plan and a National Building Code are required as soon as possible, so as to effectively apply the Law on Land Management, Urban Planning and Constructions. It would be the task of the MoLMUPC in consultation with the MPWT and other relevant ministries/institutions to draft the plan and code mentioned above.

During the construction or reconstruction of school buildings, engineers and architects of MoEYS should go on-site more often to check the compliance of the guidelines of MoEYS which would also have to integrate DRR concerns.

C. Suggested School Building Design and Safety Provisions

As mentioned earlier, the design looks rather good technically. However, the implementation does not always comply with the technical standards detailed in the contract. This results from the lack of capacity as well as the loose supervisory control of the projects. It requires more severe measures from the projects in terms of the design compliance and the correct use of appropriate materials in the construction. Poor quality construction will incur more maintenance costs due to low resistance to natural forces and affect the longevity of the building.

There are also a few gaps in the guidelines of MoEYS mentioned above that need to be addressed in terms of DRR concerns. Suggestions are as follows:

- This document should also provide guidelines for school buildings other than the Concrete/brick Structure, for the rural areas that cannot wait for the concrete/brick buildings and decide to build wooden/bamboo ones.
- Elevation of school sites must be emphasized in the guidelines in case of construction in flood prone areas in consultation with the target community who will be benefited from the school construction.
- Section A- 4.0 (page 59) must state clearly that the elevation of the earth filling will be free from floods. It should include the participation of labor from the community to show ownership of the community participation for long term sustainable use of the school building as well as maintenance mechanism should be developed so that the community will take good care of that school building.
- Section A-33 (page 65) must specify the place of water storage tanks, which is to be free from floods. Water filter should be available in school so that school children have access to clean drinking water. Example of such model can be found that are constructed by Oxfam in school buildings in Sangkeachur village, Chey Chok commune, Borey Chulsar district, Takeo province and in Olung village, Prek Prosob commune and district,
- Kratie province. Considering water and sanitation the toilet should be built higher than the highest average flood water level. The example of the toilet construction in Takeo province was under the flood water. And imagine if the children need to go to toilet they have to swim to the toilet that built under the flood water, which is not safe for them.
- Section D-1 (Page 69) regarding water well, must instruct to set it in a place free from floods. The water well should be elevated above the highest average flood level. For example, pumping well was constructed higher than the flood water level in Peam Ro district, Prey Veng Province.
- Provisions for incorporating access for children with disabilities should be made in the designs of the buildings.
- The designs and guidelines for school building construction should also be made available to the community so that there could be improved monitoring and social audit.

And to achieve all the mentioned suggestions, it will require each individual project to take strict actions against any contractors who breach the safety standards.

D. Suggested Capacity for School Construction

With most new schools construction located in rural areas and remote areas, attention should be given to the capacity of the local sub-contractors and local community. In this regard, local sub-contractors who show sign of repeated incapability must be expelled and black listed from the bidding process. In case there are only local communities who are going to be responsible for the construction, they should be trained prior to their assignment, on integrating DRR in construction. Capacity building, especially regarding DRR concerns, should also be provided to provincial engineers who have to monitor the construction.

1.3 RECOMMENDATIONS FOR NON-STRUCTURAL MEASURES

During the National Workshop, the participants were divided into 4 groups to discuss and make recommendations on the following questions for curriculum, teaching support material, up scaling and training of teachers.

Group 1: Now the curriculum is developed what are the next steps to be done in Ministry of Education, Youth and Sports for full integration of the DRR module into the National Curriculum?

The suggestions were:

- MOEYS should issue a letter to endorse use of the DRR curriculum in the schools
- Need to organize TOT at regional and provincial levels
- Need to use more pictures in curriculum to make child friendly
- Bomb threat/land mines, snake bites, floods, earthquakes, droughts should be incorporated into the existing curriculum
- Pictures in the module should be gender balanced.

Group 2: What material is already available both in government and non-government sector, which can be used to supplement the DRR curriculum? (Audio visual, work books, activity books, comics etc.)

- Materials available include:
  - Materials available include the booklet "Education and Bird Flu". There are also posters and game cards to supplement this publication.
  - "How to prevent HIV & STD" from MOEYS.
  - CRC book on "How to be safe from HIV and traffic accidents"
  - Oxfam publication on droughts and floods.
  - ADPC produced another booklet on "Living with floods"
  - UNICEF has developed a new curriculum on sanitation and printed 2000 copies for 19 provinces. So far 9 provinces have completed teaching the new curriculum
  - More visual aids need to be developed for teaching support-some posters have been developed by MoEYS

Group 3: What steps should be taken to introduce DRR in other classes, especially in the primary classes? What material is available for the introduction of DRR module into the Primary classes?

The comments are:

- Need to integrate in all classes.
- VCD and Posters need to be developed
- Story telling and pictures are best for children
- DRR should be taught to all grades of primary school
- Some materials are available with ActionAid. After editing MOEYS will use these materials for grade 4. 5 and 6. However, no decision is final yet

Group 4: Which national and provincial 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 recommendations are:

- DRR training needed in RTTC and PTTC, topic should be included in regular training programs
- Pedagogical Dept. with curriculum specialist from NCDM and other NGOs should be involved in developing curriculum and materials for TOT
- There should be single department rather than separate pedagogical and education dept. For example, NCDM has set up the structure that shows focal point for each project from NCDM. There should be clear structure e.g., dept of HIV/AIDS should have focal point/specialist on this subject with specific responsibilities.
- Ministry of Water Resources and Management (for floods), MoH (for any epidemic, HIV/AIDS), Ministry of Agriculture, Ministry of Transportation need to support and provide help to the Pedagogical Dept. To develop curriculum on DRR help is needed in:
  - Human Resources
  - Budget
  - Materials (e.g., VCD, Posters) and experiences
- MOEYS budget is not enough to provide for materials, so need to look for funds. Govt. should allocate funds along with NGOs and Donors.
- All activities should be interlinked.

Based on the recommendations of the workshop, the study suggests the following future actions:

- Integration of DRR in the primary school curriculum. The primary sections are the most important to deliver the message of DRR to the students. Students in the primary classes are the most vulnerable to disasters. Of significance is the fact that in Cambodia there is a high drop out rate after primary school. If DRR is not taught at the primary level then a substantial number of potential targets are missed. In addition, an important aspect is that the curriculum development cycle in Cambodia is in the process of review currently. Therefore, this is the best time to make additions of topics on DRR in the curriculum, for all classes.
- Integration of DRR in the senior secondary and technical school curriculum by the General Secondary Education Department and the Higher Education Department of MoEYS.
- Integration of DRR in the university curriculum, especially in the curriculum for courses in architecture, engineering and rural-regional development studies.
- Development of curriculum for students and teachers with disabilities, especially for those who are visually and hearing impaired, and also mentally challenged.
- Development of extra curricular activities for students which complement the DRR curriculum e.g., games (board and CD), quizzes, etc. The need for such activities has been expressed by teachers, education department officials and the NCDM.

- Development of training modules which can be used at teacher training institutes to teach the DRR curriculum to the teachers. This will also involve capacity building of the teachers training institutes and development of master trainers and resource persons who can teach other teachers. The modules are needed for newly appointed teachers as well as in service teachers. The JICA project STEPSAM 2 has a Science Teacher Education Project from 2008-2012. This project can help to train teachers on DRR at the Regional and Provincial Teachers Training Colleges (Annex F).

1.4 RECOMMENDATIONS FOR EMERGENCY PLANNING AND RESPONSE

Development of guidelines by MoEYS in consultation with the Cambodian Red Cross for emergency planning in the schools.

Development of guidelines by the Material and State Assets Department of MoEYS for assessment of vulnerability of school buildings

Development of guidelines by the Material and State Assets Department of MoEYS in consultation with the Cambodian Red Cross for design of schools so the buildings can be used as emergency shelters

- Development of guidelines by MoEYS in consultation with the Cambodian Red Cross for emergency planning in the schools. This would help complement the teaching of DRR in the schools. This will also require a training module for teachers on school emergency planning and capacity development of the teachers training institutes for this topic.
- Development of guidelines by the Material and State Assets Department of MoEYS for assessment of vulnerability of school buildings and retro-fitting of the buildings based on the results of the assessment.
- Development of guidelines by the Material and State Assets Department of MoEYS in consultation with the Cambodian Red Cross for design of schools so the buildings can be used as emergency shelters during a disaster or aftermath, which include:
  - site selection including accessibility and road safety
  - hazard resilient structural design
  - incorporation of hazard resilient features
- Specific features of a school building that could be used as emergency shelter:
  - Multi-story building with refugees living on the ground floor and students studying on the first floor
  - Separate latrines for students and refugees, kitchens for refugees
  - Stables for cattle of the refugees
  - Ensure clean water supply and sustainable energy such as solar power

All the activities mentioned above will help to integrate DRR into the education sector. The way forward would be to present these actions before the Education Sector Working Group (ESWG) (Cf. Annex F). The ESWG must be made aware of the need for integrating DRR in the on–going and pipeline projects, so that the substantial investment which is being made by these projects (Cf. list of projects in Section 4 part 5) is sustainable in the long term. Integration of DRR in the projects will ensure that the projects survive any disaster and the investment is not lost. The key action would be engagement of MOEYS with the donors through the ESWG. In brief, all on-going, pipeline, and any future donor-funded and government-funded projects should integrate DRR concerns so as to ensure the minimization of the risks related to disasters and the maximization of the cost effectiveness of the school buildings construction. This would be the most critical recommendation of this study.

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ANNEXES

Annex A: RCC MDRD Components

Phase I: 2004-2007

1. Component 1: Developing guidelines and tools for MDRD
2. Component 2: Undertaking priority implementation partnerships (PIP) in MDRD in RCC member
3. Component 3: Showcasing good practice on MDRD and monitoring progress
4. Component 4: Advocacy for building awareness and political support to MDRD
5. Component 5: Mobilizing partnerships for ongoing & sustainable implementation

Phase II: 2008-2010 & Phase III: 2011-2015

1. Program management
2. Advocacy
3. Knowledge management platform
4. Capacity development
5. Integration in planning
6. Integration in bilateral and multilateral program
7. Safe schools (Education)
8. Safe hospitals (Health)
9. Secure livelihood (Agriculture and non farm)
10. Microfinance for DRR (Financial services)
11. Safer (Infrastructure)
12. Safer housing (Shelter)

Annex B: Study Methodology

In order to build up evidence-based rationale for raising awareness on integrating disaster risk reduction concerns into education sector policy and to advocate for changing practices and incorporating disaster resilient features in school construction, it was necessary that a study on socio-economic and physical impacts of disasters on education sector has to be conducted.

Due to the mixed nature of the study, which combines both socio-economic and physical assessments of disaster impacts, EIC had proposed the following research methodology to assure the objective attainment and the validity of the study.

1- Socio-economic Impact Assessment Desk Review

A review of existing relevant documents and research studies was made to get a better understanding of the issues in the project. These research studies were conducted by different institutions such as ADPC, MoEYS, NCDM, MRC, etc. At the same time, all relevant secondary data were collected in close collaboration with ADPC, MoEYS, and NCDM.

Field Survey

Certain field surveys were conducted with assistance from MoEYS and NCDM in selected disaster prone areas. Since most schools in Cambodia are more vulnerable to floods than other kinds of disasters such as storms, earthquakes and draughts, only schools located in flood prone areas were selected for this survey.

Questionnaire design and survey process: The questionnaire was designed by EIC under close consultation with ADPC. The designed questionnaire was then distributed to the provincial education offices in the three provinces and finally forwarded to the selected vulnerable schools through the district education offices

Sampling: Sample selection was done based on the compilation of data obtained from WFP/ NCDM survey in 2003 and from SEILA program in 2006, which had proved that the selected three provinces located in first priority flood prone areas, namely Prey Veng, Takeo, and Kandal, have higher number of vulnerable schools compared to the others. The number of vulnerable schools in these three provinces is 293, representing about 53 percent of the total vulnerable schools in first priority flood prone areas.

Due to time and resources constraints, only around 30 percent of the vulnerable schools in the three provinces was randomly selected as a sample equaling 92 schools, about 80 percent of which were primary schools. These are generally known as the most vulnerable ones in Cambodia.

To assess the impacts of disasters on education sector at the national level, secondary data related to disaster on education sector of other provinces were also collected through assistance from MoEYS and NCDM.

2- Physical Impact Assessment

To assess the physical impacts of disasters on education sector, especially on school buildings, it was indispensable that technical consultation with engineers hs to be made. EIC used its existing resources specializing in infrastructure engineering to accomplish this task.

EIC had consulted with the NCDM over the records for past disasters, as well as their impacts on the education sector.

National building code were obtained from the Ministry of Public Work and Transport, while at the same time, EIC had interviewed officials from the government unit responsible for school construction, Construction Unit of MoEYS, and some contractors to check the compliance of standards and norms set by the national building code and the particular specifications and requirements of the MoEYS.

3- Case Studies

After identifying with relevant stakeholders on projects which can serve as good examples, EIC had interviewed the managers of those projects as well as the contractor and sub-contractors to share their experiences. Field visits were conducted to check the site location and the compliance to the norms and specifications.

4- Solution-oriented Recommendations

To double check the validity of data and to give effective solution-oriented recommendations, EIC had conducted some qualitative interviews with relevant stakeholders namely:

1- Ministry of Education, Youth and Sports (MoEYS);
2- National Committee for Disaster Management (NCDM);
3- Pedagogical Research department, MoEYS;
4- Education Sector Support Project, MoEYS; and
5- UNDP-Cambodia.

In addition to their own expertise, the above mentioned organizations could be the members of the project technical working group.

Annex C: Survey Questionnaire

Impact Assessments of Disaster on Education Sector

GENERAL INFORMATION

1 School name:

2 School type:

- Primary
- Lower secondary
- Upper secondary

3 Number of students in 2007/2008?

- Total:
- Female:

4 Number of school buildings and classrooms in 2007/2008?

- Building:
- Classrooms:

5 School location:

- Village name:
- Commune name:
- District name:
- Province name:

6 School principāls name:

and contact:

SOCIO-ECONOMIC IMPACT ASSESSMENT

1 Was the school affected 2000 flood?

- Yes
- No

2 How often is the school affected by floods?

- Every year
- Once every few years
- Rarely

3 Duration when the school is under floods:

- From (month):
- To (month):
- Duration (month):

4 Access to school:

	Before flood	After flood
On foot		
Vehicie		
Boat		
Other, specify		

5 Impacts of floods on the school:

- School closure during study
- School building damages
- Other impacts on the school

6 In case of school closure during academic time, for how long was the school closed?

- From (month):
- To (month):
- Duration (month):

7 In case of school closure during academic time, are there any other places for teaching?

- Yes
- No
- If YES, specify here

8 Were courses accomplished within time frame?

- Yes
- No

9 If NO, how to deal with such problem?

Specify here:

10 How many students dropped out of school each year?

	Total	Female
2002/2003		
2003/2004		
2004/2005		
2005/2006		
2006/2007		

11 How many students dropped out of school due to diffulties caused by floods?

	Total	Female
2002/2003		
2003/2004		
2004/2005		
2005/2006		
2006/2007		

PHYSICAL IMPACT ASSESSMENT

13 In case of schhol building damages, what are the kids and costs of damages? Please tick or fill in:

(Please specify the degree of damages: Sever = 1, Medium = 2, or Little = 3)

	Depth of flood from floor level (m)	Floor	Wall	Windpw	Roof	Chairs & table	Total costs, USS
2000/2001							
2001/2002							
2002/2003							
2003/2004							
2004/2005							
2005/2006							
2006/2007							

Annex D: Communes & Schools Located in Flood Prone Areas by Province

Province	Commune	Pre-school	Primary School	Lower Sec. School	Upper Sec. School	Total
Banteay Meanchey	13	12	97	11	3	123
Battambang	8	9	63	10	8	90
Kampong Cham	18	6	71	9	0	86
Kampong Chhnang	9	5	30	5	1	41
Kampong Speu	1	0	4	1	0	5
Kampong Thom	31	95	186	26	8	315
Kampot	9	9	26	4	0	39
Kandal	50	61	170	39	10	280
Kratie	17	15	108	16	2	141
Prey Veng	30	60	152	16	6	234
Pursat	13	33	71	13	4	121
Siem Reap	9	2	44	6	0	52
Stung Treng	18	25	70	11	1	107
Svay Rieng	15	67	54	7	2	130
Takeo	19	27	75	14	6	122
Total	**260**	**426**	**1,221**	**188**	**51**	**1,886**

Table C1/ Communes[1] and Schools[2] Located in Flood Prone Areas

Source: Compiled from WFP Survey (2003) and SEILA Program (2006) Note: [1] WFP Survey data in 2003[2] SEILA Program data in 2006

Province	Commune	Pre-school	Primary School	Lower Sec. School	Upper Sec. School	Total
Banteay Meanchey	4	2	32	4	0	38
Kampong Cham	6	3	22	1	0	26
Kampong Chhnang	2	3	6	2	1	12
Kampong Thom	6	23	39	4	1	67
Kampot	2	4	9	2	0	15
Kandal	14	10	48	10	3	71
Kratie	8	11	51	8	1	71
Prey Veng	16	31	83	9	4	127
Svay Rieng	3	14	13	3	0	30
Takeo	15	22	59	11	3	95
Total	**76**	**123**	**326**	**54**	**13**	**552**

Table C2/ Communes[1] and Schools[2] Located in First Priority Flood Prone Areas

Source: Compiled from WFP Survey (2003) and SEILA Program (2006) Note: [1] WFP Survey data in 2003[2] SEILA Program data in 2006

Annex E. Overview of ADB School Construction in Cambodia (2001 : 2010)

MINISTRY OF EDUCATION, YOUTH AND SPORT ADB

OVERVIEW
OF
ADB SCHOOL CONSTRUCTION PROJECTS IN CAMBODIA : 2001 - 2010

NATIONAL ADVOCACY WORKSHOP
ON MAINSTREAMING DISASTER RISK REDUCTION
IN EDUCATION SECTOR IN CAMBODIA
19-20 March 2008

ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

EMERGENCY FLOOD REHABILITATION PROJECT (EFRP)- PART D – EDUCATION
ADB LOAN NO. 1824 – CAM (SF)
2001-2003

- **Objective of Project**
  - To rehabilitate key infrastructure damaged by the 2000 floods
  - To enable the early restoration of economic and social activity, especially for the rural poor.
    - Total Loan Amount: $55 million for 5 sectors
    - Total for Part D: Education: $5.8 million (10.55% of the Total Loan)

ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

EMERGENCY FLOOD REHABILITATION PROJECT (EFRP)- PART D – EDUCATION
ADB LOAN NO. 1824 – CAM (SF)

- **ADB EFRP** : 202 Schools, 837 Classrooms - $4.32 mill
  2 Schools, 11 Classrooms – Repair - $0.03 mill.

FLOOD EMERGENCY REHABILITATION PROJECT (FERP)- SCHOOLS COMPONENT
IDA CREDIT 3472 – KH
2001-2004

- **WB FERP** : 371 Schools, 1,459 Classrooms - $7.62 mill.
  3 Schools, 33 Classrooms – Repair - $0.03 mill.

ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

EDUCATION SECTOR DEVELOPMENT PROJECT (ESDP)
ADB LOAN NO. 1865 – CAM (SF)
2002-2007

- **Objective of Project**
  to supplement the policy initiatives by supporting:
  - *increased access and equity, mainly for basic education*
  - *deconcentratrated and decentralized planning, management and monitoring*
  - *selective quality ad efficiency improvement in budget planning, accounting and auditing and TVET*

ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

SCHOOL FACILITIES - ESDP

- 1st Phase : *59 Schools, 258 Classrooms*
- 2nd Phase : *93 Schools, 390 Classrooms*
- 3rd Phase : *143 Schools, 663 Classrooms*
- 4th Phase : *85 Schools, 397 Classrooms*
- 5th Phase : *83 Schools, 321 Classrooms*
- 6th Phase : *62 Schools, 285 Classrooms*

525 Schools 2,316 Classrooms : 14.5 Million

ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

OTHER FACILITIES – ESDP

Teacher Quarters (2 Phases)	: *101*
TVET Centers (3 Phases)	: *8*
Teacher Training/Resource Centers	: *14*
Phnom Penh Resource Center	: *1*
Secondary Schools in Phnom Penh	: *6*

Total Construction Amount, including 525 schools
= US$18.40 million

ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

DETAILS OF SCHOOL FACILITIES – ESDP

PRIMARY SCHOOLS : 344 Schools : 1418 Cl.

Village without Primary : 70 Schools : 273 Cl.
Incomplete Primary : 125 Schools : 490 Cl.
Overcrowded Primary : 149 Schools : 655 Cl.

SECOND. SCHOOLS : 187 Schools : 928 Cl.

Cluster without LowSec: 126 Schools : 627 Cl.
Incomplete Lower Sec. : 8 Schools : 37 Cl.
Overcrowded LowerSec: 36 Schools : 175 Cl.
Incomplete/Over. US : 65 Schools : 187 Cl

ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

SECOND EDUCATION SECTOR DEVELOPMENT PROJECT (ESDP II)

ADB LOAN NO. 2122 – CAM (SF)

2005-2010

OVERALL PROJECT OBJECTIVE – ESDP II

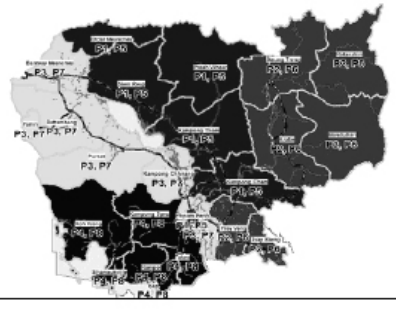
- Poverty Reduction by improving access to and the quality of basic and upper secondary education, and life-long learning opportunities for out-of-school youth through
  - ***Lower secondary education opportunities***
  - ***Upper secondary education opportunities***
  - ***Community-based skills training in poor communes***

ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

PROJECT TARGETS – Facilities – ESDP II

- SCHOOLS – LOWER SECONDARY : ***400***
- RESOURCE (MODEL) U SECON SCHOOLS : ***24***
  one in each province/municipality
- NEW UPPER SECON SCHOOLS : ***25***
  one in each district without upper secondary school
- REBURBISHMENT OF USS : ***25***

ESDP II WORK PLAN MAP



ADB SCHOOL CONSTRUCTION PROJECTS 2001 - 2007

WORK PLAN – ESDP II

- **PHASE 1** ***(Actual)*** : 5 Provinces, 50 Schools : US$1.551 million
- **PHASE 2** ***(Actual)*** : 6 Provinces, 48 Schools : US$1.621 million
- **PHASE 3** ***(Actual)*** : 6 Provinces, 70 Schools : US$2.410 million
  7 New Upper Secondary Schools : US$0.259 million
  3 Upper Secondary Schools refurbished : US$0.069 million
- **PHASE 4** ***(Actual)*** : 6 Provinces, 50 Schools : US$1.720 million
  7 Upper Secondary Schools : US$0.270 million
- **PHASE 5** ***(Proposed)*** : 7 Provinces, 71 Schools : US$3.609 million
  7 Resource (Model/Core) Schools : US$1.750 million
  3 Upper Secondary Schools : US$0.217 million
- **PHASE 6** ***(Still to be decided)*** :7 Provinces, 38 Schools : US$2.660 million
  9 Resource (Model/Core) Schools : US$2.250 million
  4 Upper Secondary Schools : US$0.280 million
- **PHASE 7** ***(Still to be decided)*** : **7 Provinces, 26 Schools** : US$1.61 million
  8 Resource (Model/Core) Schools : US$2.000 million
  2 Upper Secondary Schools : US$0.140 million

Annex F. JICA's Cooperation in Education Sector in Cambodia

13. Primary school construction: Phase 1 (2004-2005) and Phase 2(2005-2006)

Achievement in the primary school construction project in PP:

- Phase 1 (2004-2005): 5 buildings/ 111 equipped classrooms,
- Phase 2 (2005-2006): 6 buildings/ 113 equipped classrooms.

14. Technical Assistant (Education Planning Advisor, DoP)

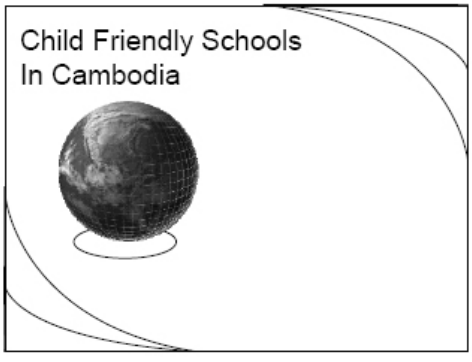
15. JOCVs and SVs
    - JOCV: Young volunteer
    - SV: Senior Volunteer

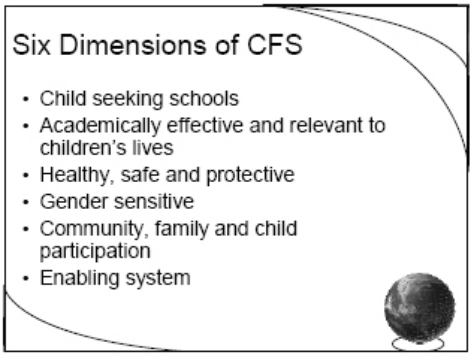
16. STEPSAM: Secondary School Teachers Training Project in Science and Mathematics (2000-2005)
    - Training to the trainers at National Institute for Education;
    - Conducting experiments on Science and Mathematics
    - How to produce and to use the teaching material

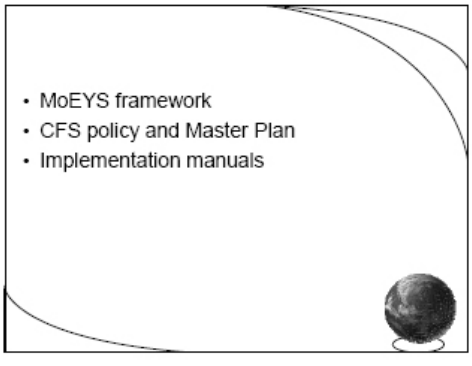
17. ISMEC: Improvement of Science and Mathematics Education in Cambodia (2005-2007)
    - Curriculum: Grade 10 to Grade 12
    - Textbook: Grade 10
    - Teacher manual: Grade 10
    - Capacity building to MoEYS

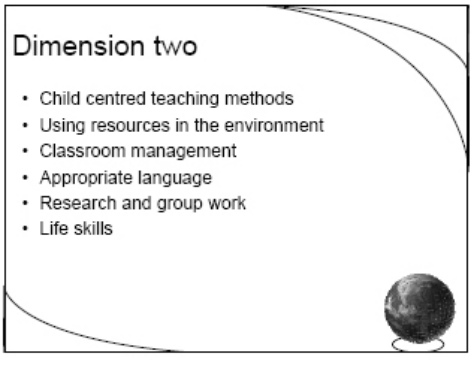
18. STEPSAM2: Science Teacher Education Project in Cambodia (Sep 2008- Oct 2012)
    - Trainers training at Provincial Teachers Training College (PTTC) and Regional Teachers Training College (RTTC)
      - Selection and training of NT
      - Planning and preparation of TTC trainers training
      - TOT for science trainers at 6 RTTC and 18 PTTC
      - Materials development
      - INSET for Science Teachers in pilot province (BTB and PV)

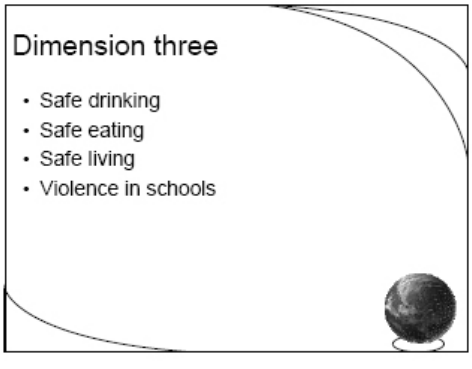
Annex G. Child Friendly Schools in Cambodia - UNICEF

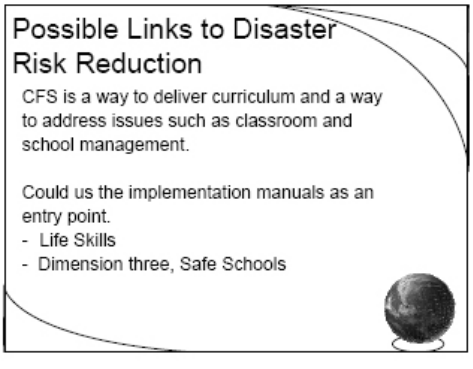






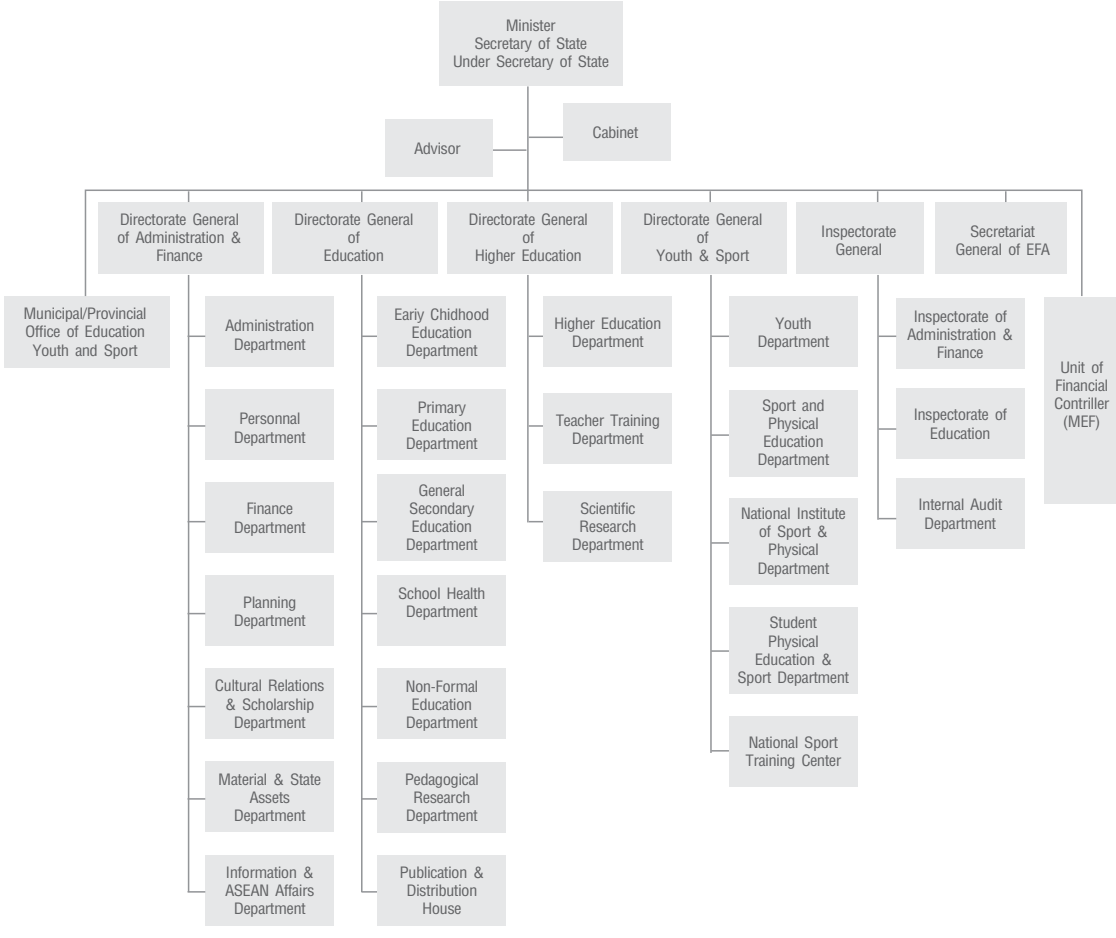






Annex H: Organizational Chart of MoEYS

ORGANIZATIONAL CHART OF THE MINISTRY OF EDUCATION, YOUTH AND SPORT



Source: MoEYS's website

Annex I: Education Sector Working Group (ESWG)

Name	Title
Ministry of Education, Youth and Sports	
1. H.E. Kol Pheng	Senior Minister
2. H.E. Im Sethy	Secretary of State
3. H.E. Mak Vann	Secretary of State
4. H.E. Pit Chamnan	Secretary of State
5. H.E. Bun Sok	Secretary of State
6. H.E. Nath Bunroeun	Under-Secretary of State
7. H.E. Hak Seang Ly	Under-Secretary of State
8. H.E. Chea Se	Under-Secretary of State
9. H.E. Keu Nay Leang	Director General of Education
10. H.E. Chea Oeung	Director General of Admin and Finance
11. H.E. Say Gnen	Inspectorate General
12. Ms. Gnim Vann Chankan	Deputy Inspectorate General
13. Mr. Ou Eng	Deputy Director General of Education
14. Mr. In The	Deputy DG of Admin and Finance
15. Mr. Mak Ngoy	Deputy General Director Directorate General of Higher Education
16. Mr. Leang Seng Hak	Director of Teacher Training Department
17. Mr. Pen Saroeun	Director of Health School Department
18. Ms. Yim Chansrey	Director of ECE
19. Mr. Lay Borin	Director of State Asset Department
20. Mr. Ly Sathyk	Director of Finance Department
21. Mr. Sam Sereyrath	Director of Planning Department
22. Mr. Pen Saroeun	Director of School Health Department
23. Mr. Chorn Chheang Ly	Director of Primary Education Department
24. Ms. Yim Chansrey	Acting Director of Early Childhood Education Department
Ministry of Economic and Finance	
1. H.E. Kong Vibol	Secretary of State
2. H.E. Dr. Hang Chuon Naron	Secretary General Supreme National Economic Council
Royal University of Phnom Penh	
1. Mr. Lav Chhiv Eav	Rector
2. Dr. Neth Barom	Vice-Rector

Development Partners Joint Mission Members

ADB

1. Mr. Arjun Goswami	Country Director Cambodia Resident Mission
2. Ms. Sukhdeep Brar	Senior Education Specialist ADB, Manila
3. Mr. Sophea Ma	Social Sector Officer Cambodia Resident Missions
4. Ms. Raikhan Sabirova	

EC

1. Mr. Christian Provoost	Attaché, Education, Health
2. Ms. Simone Seper	Program Officer Education, Health, Social Development

UNICEF

1. Mr. Hiroyuki Hattori	Project Officer, Education Section UNICEF Cambodia Country Office
2. Ms. Aye Aoki	Project Officer-Education UNICEF East Asia and Pacific Regional Office

ESWG/UNESCO

1. Mr. Teruo Jinnai	Chair of ESWG and Head-of-Office UNESCO Representative in Cambodia
2. Ana Telleria	ESWG Secretariat

WFP (Rome)

Ute Meir	Senior expert of school feeding programmes

Education Sector Working Group

JICA

Kanazawa Daizuke	MOEYS Advisor

WFP

Thomas Keuster	Representative of WFP in Cambodia

UNFPA

Hou Vimol	RHIYA Coordinator

USAID

Lyne Losert	Head of Education Section

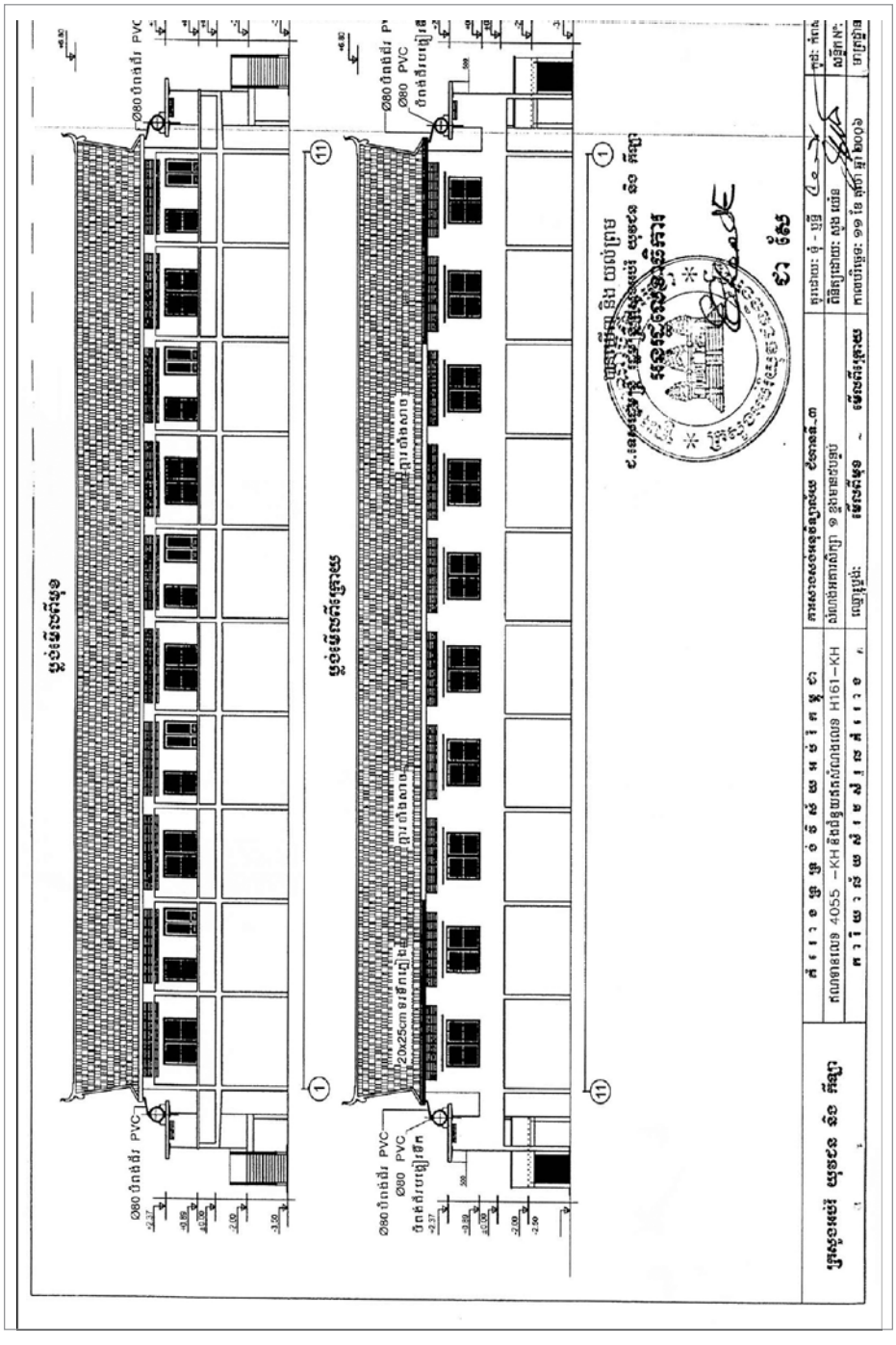
Save the Children Norway

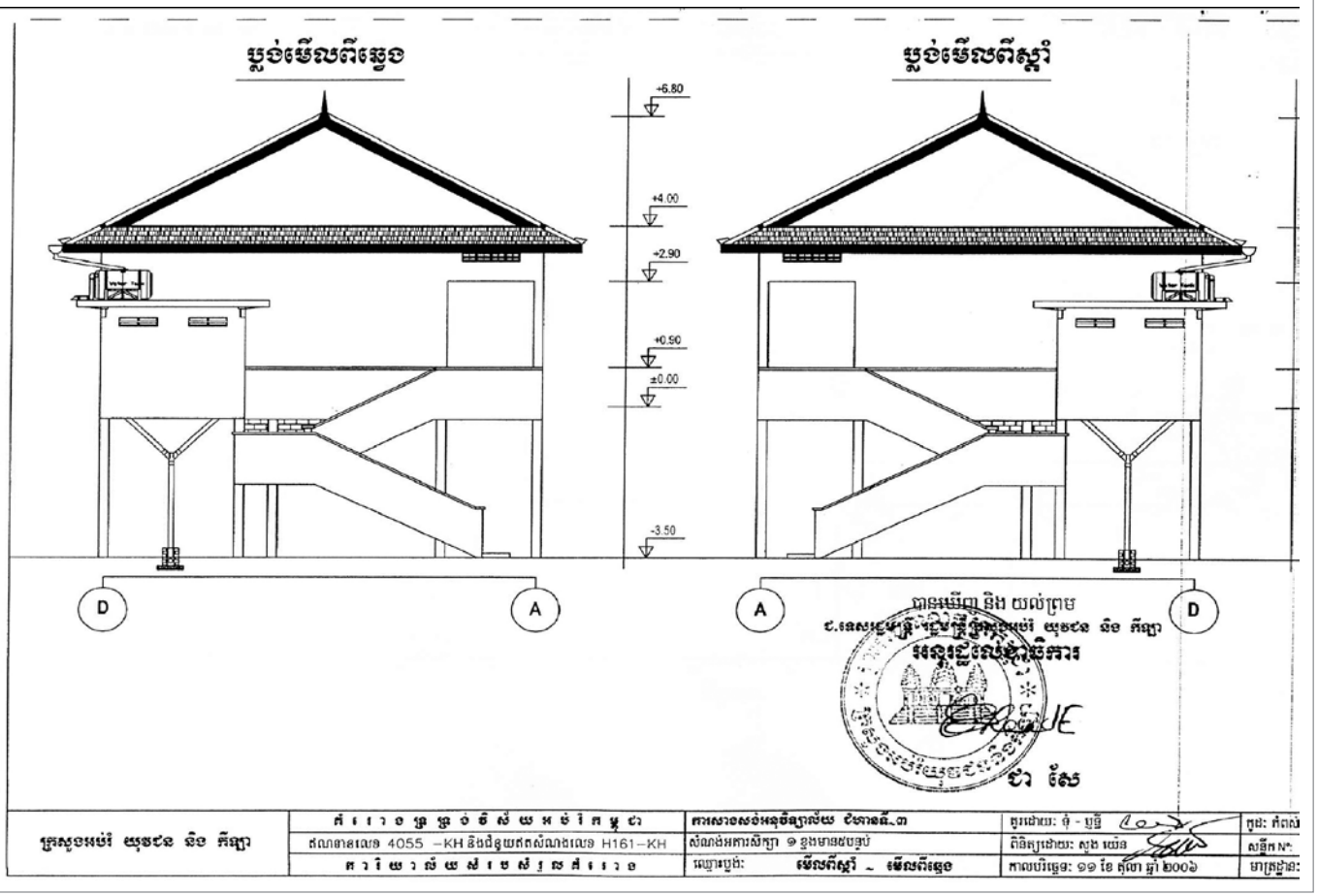
Kan Kal	Program Director

Disable Action Council

1. James Clarice	DAC Advisor
2. Vorn Samphors	Program Coordinator

Annex J: Typical Plan for 3.5-Meter Elevated Schools




ប្លង់មើលពីឆ្វេង
ប្លង់មើលពីស្តាំ
+6.80
+4.00
+2.90
+0.50
±0.00
-3.50
D
A
A
D
បានឃើញ និង យល់ព្រម
ជា សែ

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.*

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.*