adpc

actionaid Bangladesh

WORKING PAPER

Culture of Safety in Schools

Mandatory or by Choice

Culture of Safety in Schools

Mandatory or a choice

Forward

"Disaster Risk Reduction begins at school" campaign was celebrated during 2006-07 when the world witnessed children as victims of unprecedented disasters such as Bam (Iran) earthquake, Pakistan earthquake and Cyclone SIDR in Bangladesh. Sichuan earthquake in 2008 in China proved that children would be the most vulnerable group in any form of disasters. On the other hand, children are the strongest medium to create awareness and sensitize adults which can save lives from disaster risk. Tilly Smilth was able to save hundreds of lives during the tsunami in 2004 because of her geographic lessons before coming to Thailand for a vacation. Realizing the potential among children and vulnerabilities to multi-hazards as well, countries in Asia and Pacific have taken various initiatives to build capacities among children through school safety and preparedness.

Ahmadabad agenda (2007), Bangkok agenda (2007) and Islamabad declaration came in 2008 emphasizing mainstreaming education and disaster risk reduction with the overall goal of empowering children for disaster risk reduction. The declarations were made to advocate national/local governments to develop school safety policy as part of their national development plan which should focus on preparedness and mitigation. National governments are urged to form partnership with local authorities to create national school safety program and fund to implement action plans for structural and non-structural initiatives. Local governments should partner with private institutions and corporations, seeking their support and commitment for the implementation and finance of the plans.

School safety and preparedness should become mandatory for each school which will allow students, teachers and management committee to bring Culture of Safety in schools. At the national level, disaster management and education sector can play greater role in ensuring mainstreaming disaster risk reduction orientation into educational programs and projects. Development partners and donors along with policy makers can emphasize the importance of school safety through allocating budget for preparedness and mitigation.

ADPC is currently working on education and disaster risk reduction in Southeast Asia. The effort is to integrate DRR modules into school curriculum, promoting hazard resilient construction of new schools and introducing features into schools for their use as emergency shelters. Realizing the importance of mainstreaming DRR into education sector as identified by Regional Consultative Committee (RCC) - 26 member countries as a signatory, the recent initiative was to Support the implementation of Hyogo Framework of Action (HFA) through mainstreaming disaster risk reduction into development planning.

This research work is an attempt to define culture of safety in schools and develop framework for that to highlight the linkage between child's right and disaster risk reduction. It also brings in to the investigation to understand the global initiatives on school safety and way forward for Bangladesh. The research work also develops the indicators of culture of safety in terms of safety audit, safer construction and education in emergencies. Finally, this publication is the result of moving towards to realize HFA and how culture of safety in school in Bangladesh can contribute in the implementation of priorities of action.

Dr. Bhichit Rattakul
Executive Director

Preface

Each time a disaster occurs, masses of children are excluded from school and many never return. Past experiences and the available evidences show that education sector is among the hardest hit along with other sectors in the event of disasters in Bangladesh. Starting from Cyclones in 1970, 1991, 2007 and floods in 1998, schools were interrupted due to structural collapse and proximity to the hazards prone location. In the flood plain area majority of schools were closed for more than three months during 1998 and 2007 floods. An estimated 5,927 educational institutions were fully or partially damaged by Cyclone Sidr, resulting in a total value of damage and losses of BDT 4.7 billion. Cases like fire accidents, threats to road injury or accidents and stampede are the human made hazards which make schools more vulnerable. Schools located in the urban and rural areas do have different set of vulnerabilities as the nature of hazards and potential threats are different. There is one common thread between urban and rural schools which is- lack of culture of safety in schools- to have minimum standards/measures to protect students and teachers from any natural or human made hazard, learning materials and property. Culture of safety in schools capture issues like child's right, education and DRR policies, institutions, governance, resource allocation, disaster preparedness and family inclusion within the framework of internal and external environment of the school to reduce the impact of any possible threats to children. The framework of culture of safety in school moves around child's right to uninterrupted continuous education, child's right for safe environment and disaster risk reduction.

About the research work

School safety and preparedness is still in the form of choice not as a mandatory requirement for schools in Bangladesh. DRR and education programs must reflect the coherence in terms of reducing the disaster impacts in education sector. Countries like Belize, Iran, Sri Lanka have gone far ahead in institutional commitment. After the Bam (Iran) earthquake, central government passed the School Safety Act of 2006 in the parliament. Belize also has gone mile ahead in bringing the school safety policy into place to protect children from hurricanes. In Sri Lanka, the government has developed a national guideline towards making disaster safe schools. Cambodia, Lao PDR and the Philippines have brought the 'priority implementation partnerships' to mainstream disaster risk reduction into education sector. Ministry of Education in Turkey has made evacuation drills mandatory in all the schools.

The realization of this research work came after the field visit to Action Aid Bangladesh's working area in Chittagong and ADPC's work under the Comprehensive Disaster Management Program (CDMP) and under DIPECHO with Islamic Relief and Plan Bangladesh. ADPC's training and advocacy component under CDMP was focused on School Safety on Earthquakes where Dhaka, Sylhet and Chittagong cities were intervened to create awareness among schools and education authorities. Discussions with teachers, students, school management committees, and education authorities were made to understand how schools manage students in terms of protecting their lives during school hours. It was found that schools do practice symbolically in terms of safety measures, but there is lack of understanding by the school authorities about the potential threat to the children. In the absence of government regulation on safety and audit measures, school management committee (SMC) does take very little initiatives to ensure the safety of the children. Realizing the impact of disasters (natural and human made) and absence of safety and audit measures in schools, this research intends to investigate and advocate, how a culture of safety can be practiced or adopted to enable a safer environment (internal and external) for future of Bangladesh, i.e. children, instead of making safety and preparedness, a choice.

Acronyms

PSQL	Primary School Quality Level indicator
EFA	Education For All
MDGs	Millennium Development Goals
SLIP	School Level Improvement Plan
PEDP	Primary Education Development Program
MoPME	Ministry of Primary and Mass Education
DPE	Directorate of Primary Education
DMB	Disaster Management Bureau
DPEO	District Primary Education Office
UpEO	UpaZila Education Office
DDMC	District Disaster Management Committee
UNO	Union Nirbhai Officer
MoFDM	Ministry of Food and Disaster Management
UNISDR	United Nation International Strategy for Disaster Reduction
DRR	Disaster Risk Reduction
NGOs	Non-government Organizations
CBOs	Community based Organizations
LGED	Local Government Engineering Department
RNGPS	Registered Non-Government Private School
SWAP	Sector Wide Approach Program
HFA	Hyogo Framework For Action
SMC	School Management Committee

Table of contents

List of Tables

List of Figures

Executive Summary

Disaster trends have increased and its impact is all time high on vulnerable communities. Natural disasters are not new to Bangladesh and country has revolutionized its disaster preparedness by promoting community resilience and volunteerism. As a result the impacts of cyclone SIDR compared to cyclone 1991 were very less on human lives though the property damage was still high. Past experiences and based on the available evidences, it shows that education sector was hardest hit along with other sectors in the event of disasters. Apart from natural disasters, human induced hazards have become equally dangerous for schools due to their location and congestion. The alarming trend of disaster impacts on education sector requires building up the environment to minimize the loss and damages that occurs frequently in and around the schools in Bangladesh. It is important to understand that there is a relevant linkage between the concept of culture of safety and the impact of disasters in education sector. At present several initiatives have begun to realize the disaster impact in and around the schools by building teacher's capacities, through school safety and preparedness planning, raising awareness and mock drill. But all these measure are taken by choice not as a requirement or mandatory for every school. The national policy on disaster management has emphasized that every ministry to have a general guideline to incorporate disaster risk reduction agenda for the sectors. It also says that the development plans should address defining and redefining risk environment through hazard analysis, vulnerability assessment, risk evaluation and risk treatments and managing the risk environment by developing programs and strategies that reduces the risk. Policy and legislation is one of the key factors in reducing the risk on children. The research work expects to investigate how school safety can be prioritized in policy framework both in education and disaster management sector.

Realizing the impacts of concurrent disasters in Bangladesh on education sector, the national plan of action for children (2005-09) does recognize the urgency to build capacity of children's organization to participate in the development of policies and programs which affects them through raising awareness on children's right to participate. There are remarkable initiatives taken by the Government of Bangladesh to minimize the risk pertaining to school and children. Physical strengthening of school buildings in the coastal and flood prone areas which is being used by the school and community as a shelter is one such initiative towards mitigating the disaster impact in education sector. There is need to have a common guideline for both the sectors to address education and impacts of disasters. School safety guidelines can be composed of safer construction, facilities and outdoor consideration as well. A school safety audit framework can be introduced to measure the strengths and weaknesses of the physical infrastructure. School safety preparedness should be mandatory in all schools in Bangladesh. School drills are important opportunities for student learning, beyond evacuation and other protective behaviours themselves. Indicators for culture of safety in schools can become part of Primary School Quality Level (PSQL) where facilities, learning and capacity development of teachers and management committee are being discussed.

1. Disaster impacts on Schools: A case of Bangladesh

Disaster trends have increased and its impacts are all time high on the vulnerable communities. Ad hoc development in all sectors including education is making the community not only disastrous to live but also weakening their coping capacities to withstand natural or human-induced disasters. Development and disasters are two sides of the same coin which would destroy the other unless both are tackled in unison. In such situation, Governments are under great pressure and face huge challenge to continue providing basic services such education during and aftermath of the disaster. There is no doubt that disaster will always interrupt the continued education process and future development, depending upon the time to recover and get back to the pre-disaster status.

Natural disasters are not new to Bangladesh and the country has revolutionized the disaster preparedness by promoting community resilience and volunteerism. That was the reason why the impacts of cyclone SIDR in comparison to cyclone in 1991 was very less on human lives though the damage was very high. An estimated 5,927 educational institutions were fully or partially damaged by Cyclone SIDR, resulting in a total value of damage and losses of BDT 4.7 billion1. Past experiences and the available evidences show that education sector was hardest hit along with other sectors in the event of disaster. Starting from Cyclone of 1970, 1991, 2007 and floods of 1998, schools were interrupted due to structural collapse. In the flood plain area majority of schools were closed for more than three months. Schools in rural and urban areas of Bangladesh face different set of hazards ranging from natural to human induced. In terms of natural hazards, floods and cyclone are recurring phenomena which have a devastating impact on schools in flood plain and coastal areas. Earthquake is a potential threat for Bangladesh and there would be a litmus test for the country if intensity such as in Haiti, or Sichuan or Bam comes. More than 400 students of Chhotomerung Ashrafia Dakhil Madrasa under Dighinala upazila are attending their classes, risking life as cracks have developed in several parts of the Madrasa building due to earthquake and has not been repaired for last two years[2].

Apart from natural hazards, human induced hazards have become equally dangerous for the schools due to their location and congestion. Many schools in city area are in constant threat of fire hazards, road accident and injury. About 5.4 lakh students and teachers of 533 government and private schools in the city are at high risk of fire accidents as most of these institutions do not have fire-fighting systems. Students of these schools are not aware of fire safety since the school management do not impart any training on tackling emergency situations. None has an emergency fire plan to evacuate children in an orderly manner in case of a fire. The structure of many school buildings, like that of Dhanmondi Government Boys' High School, is not suitable for students to escape during a fire incident[3].This is one kind of example from Dhaka city and there are many numbers of such scenario that can be discussed.

The annual number of injury related child deaths has gone up to 30,000 and the number of permanent disabilities caused by injuries is more than 13,000 every year (Bangladesh Health and Injury Survey 2005). These figures may or may not be indicative only for children who do not attend school. However,

1 Damage and Need Assessment 2008, pp-33
[2] The Daily Star, 29 August 2010 –website, 28 May 2010
[3] The Daily Star, 4th December 2004, website, 28 May 2010

children spend more or less six to seven hours in schools and the chances of facing road accidents or injury becomes 30 per cent.

Countries like Iran, Belize, Sri Lanka, Turkey, Philippines and Lao PDR have gone beyond the institutional commitment and efforts are on to realize school safety not only as a policy but also as legislation. Bangladesh is considered to be a zone of multiple vulnerabilities where threat from disasters varies from range of hazards such as floods, cyclones, earthquakes and other human-induced hazards such as fire, road accident and injury and schools have to be ready and prepare enough to deal with the complexities of hazards and their possible consequences.

Bangladesh has become a role model for the world on cyclone preparedness and a cadre of skilled volunteers (more than 40,000) has taken the lead role as a frontier. Schools of Bangladesh where millions of children study, who may not have equal physical ability as CPP volunteers but are the strongest medium to bring about change and save their own lives and others too from any possible hazards or disasters. The commitment of Government of Bangladesh to incorporate disaster into education sector is in progress. Schools cum shelter have become the concrete image at the community level coping with floods or cyclone. Bangladesh has yet to reach a milestone by bringing school safety concerns into policy framework and legislation.

2. Culture of Safety in Schools in Bangladesh

The alarming trend of disaster impacts on education sector requires building the environment to minimize the loss and damages that occur frequently in and around the schools of Bangladesh. Education sector in any country plays a vital role since it contributes greatly in shaping the future of the country by educating the children. Lack of proper precautions and investments to ensure continued education amidst of disasters would result in uneducated youths thus creating unemployment and poverty. Therefore, the governments should take measures to safeguard schools and ensure education for children without delay. Everyday children spend 35-40 per cent of the time in school. Therefore, it is important to investigate whether children within eight to ten hours in and around the school are safe or not, even if there is little possibility of any disaster to occur in due time. Does the school has a culture of safety in practice to protect thousands of lives of children due to human and natural disasters?

'Culture of Safety' has been defined in the public health field as "the utopian environment where medical errors do not occur because everyone is safety-conscious enough to avoid all mistakes" (Iowa Department of Public Health, n.d.)[4]. Since 1980s there has been a large amount of research conducted on safety culture, however the concept still remains largely "ill defined" (Guldenmund, 2000)[5]. The published literature varies in defining the concept where some arguments are in favour of the concept and some are not. Safety culture is a term often used to describe the way in which safety is managed in the workplace, and often reflects "the attitudes, beliefs, perceptions and values that employees share in relation to safety"[6].

4 http://www.idph.state.ia.us/patient_safety/glossary.asp.

5 Guldenmund, 2000

6 Cox and Cox, 1991

Despite the ambiguity in defining safety culture, there is no uncertainty over the relevance or significance of the concept[7]. Mearns et al., (2003) stated that "safety culture is an important concept that forms the environment within which individual safety attitudes develop and persist and safety behaviours are promoted".

Referring the above mentioned definitions; culture of safety can be defined as a means to reduce the impact of disaster or any possible threat to school and children through behavioural and attitudinal changes. Culture of safety can also be defined as the habit or practice that one individual, or group of people or community adopt to protect themselves from any harm or danger whether it is natural hazards or human made hazards.

It is important to understand that the concept of culture of safety has a relevance to the impact of disasters in education sector. As mentioned above, though there is no consensus in defining the concept of culture of safety, there is no denial of the fact that the culture of safety ensures a safe environment to individual, neighbourhood, community, and society and the nation altogether. In this connection, school works as a catalyst in enabling the environment of culture of safety by bringing community and institution together to anticipate the future risk.

The question now is how to ensure a Culture *of safety in practice to influence the attitude and behaviour of children, teachers and management staff of school*. Merely school disaster management plan and preparedness, awareness activities will not be able to serve the purpose to ensure the risk free lives for the children unless a culture of safety and its practice becomes mandatory for every school whether government or private, primary or high secondary.

If the potential threat either by natural hazards or human made is inevitable then the bigger question is how to bring a culture of safety in schools in Bangladesh. If the impact of disasters (natural or human made) is so high in schools then a culture of safety should be defined and inbuilt into the education policy, programs and projects itself.

At present several initiatives have begun to practice disaster safety measures in and around the schools by building the capacity of teachers through school safety and preparedness planning, raising awareness and mock drill. But all these measures are still practiced as choice and not as a requirement or mandatory for every school. Schools in Bangladesh in general have little awareness or understanding on school safety. Safety of the school children is yet to be a mandate in many parts of developing countries including Bangladesh.

3. Rationale of the research work

As per the education policy guideline of Bangladesh, there is a linkage between poverty reduction and economic development through human resource development by promoting access to quality education. Government of Bangladesh is bringing structural reforms to maintain the commitment to the education sector in order to achieve Education For All (EFA) and Millennium Development Goals (MDGs). The national policy on disaster management has emphasized that every ministry must have a general guideline to incorporate disaster risk reduction agenda for their relevant sectors. It also says

7 Yule, 2003

that the development plans should address defining and redefining risk environment through hazard analysis, vulnerability assessment, risk evaluation and risk treatments and managing the risk environment by developing programs and strategies that reduces the risk. For example, a school level improvement plan (SLIP) has been introduced under Primary Education Development Program (PEDP II) with the aim of increasing local participation in educational planning and ensuring overall improvement of school facilities, learning environment and learning outcome of the students through the participation of stakeholders in the process of decentralization of planning activities at school level. SLIP can also be seen within the framework of disaster risk reduction which ultimately would uphold education as a tool not only for poverty reduction and economic development but at the same time creating safer environment in and around schools. Both education and disaster management policy requires to fuse together to develop programs and projects which is a missing link at this moment, to benefit education and ultimately students who are the future of the nation.

Even schools which are used as shelter during disasters or post disaster times lack school safety plans which should be the prerequisite to have any shelter in place. In flood plain area and coastal cities where many of the schools are closed for more than a month or two and in the event of a disaster, there is lack of consensus within the schools itself on safety measures that should be in place beforehand. These two examples show that so far school safety is a choice and not mandatory. Hence, the aim of the research work is to investigate how school safety can be prioritized in policy framework both in education and disaster management sectors.

4. Objective of the research

The objective of the research is to understand the school safety measures which can be used to reduce the impact of natural or human-made hazards by developing a conceptual framework of *Culture of Safety* in schools.

5. Research Methodology

The research methodology has primarily focused on collection of secondary level data from various sources. Below mention is the methodology that this research work has adopted:

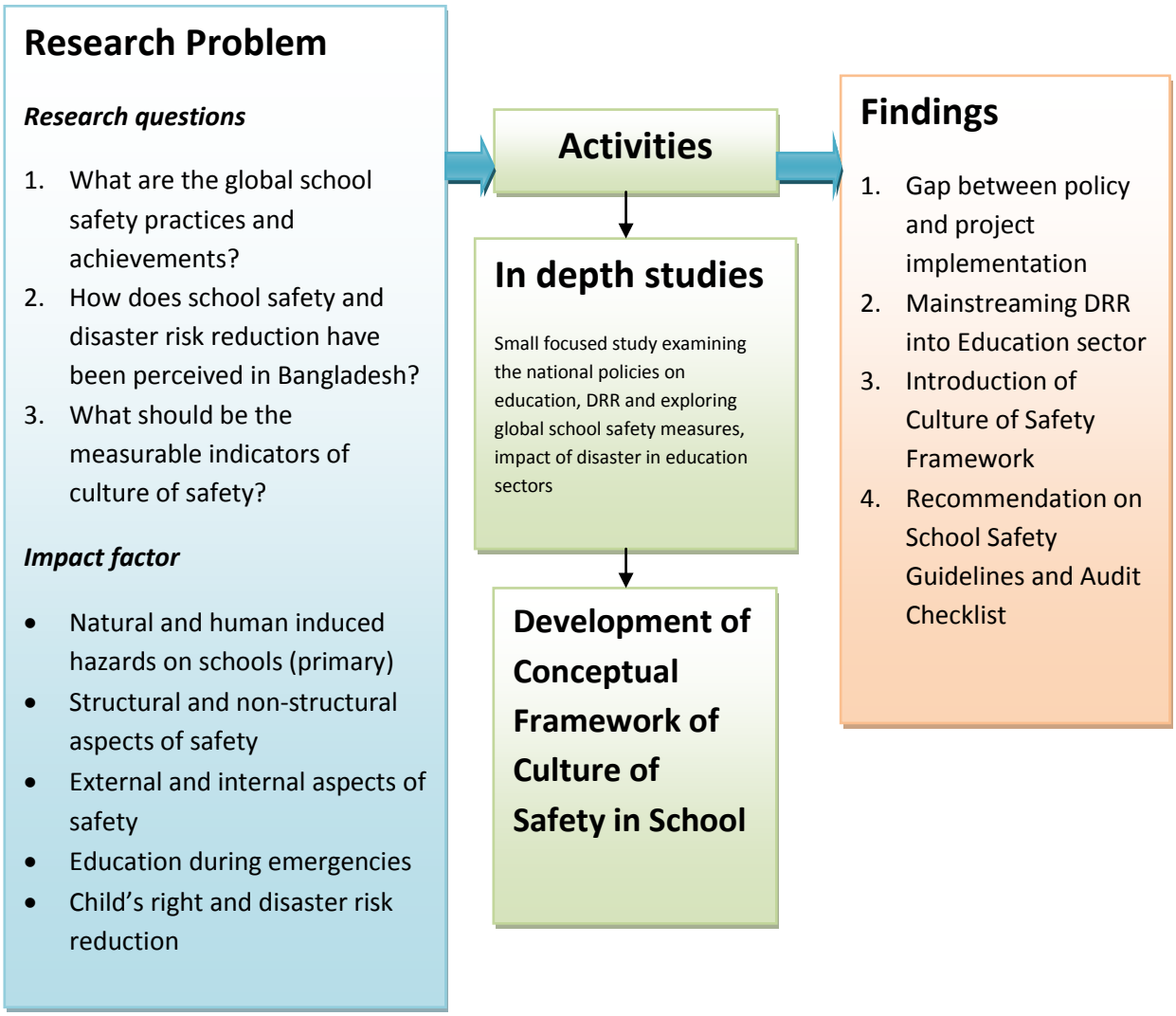


Figure 1: Research Design

6. Expected outcomes and limitations

The research intends to investigate the current safety practices in schools in Bangladesh. The major outcome of this research is to develop indicators for culture of safety for schools in Bangladesh against natural and human-made hazards. At the same time there are limitations of the research work which are as follows:

- The research work is focused on government primary schools only
- The research work investigates the current school safety practices on natural hazards and subsequently secondary hazards.
- The research work is extensively dependent on secondary database.

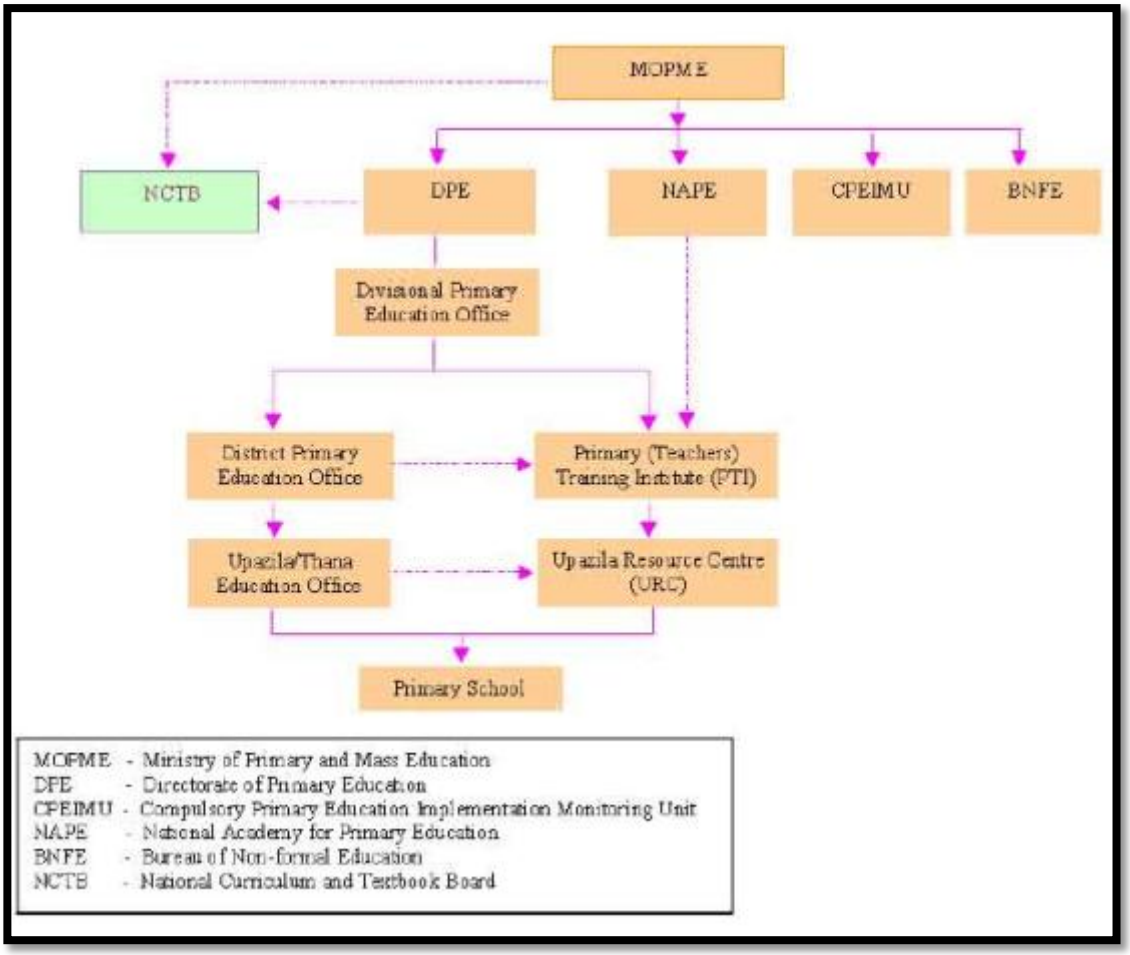
7. Literature review

National policies formulation and implementation

The management and policy making of the education system falls under two ministries in Bangladesh. The Ministry of Primary and Mass Education (MoPME) is responsible for primary education and mass literacy, and the Ministry of Education (MoE) is responsible for secondary, vocational and tertiary education. The education structure consists of a formal sub-system and a non-formal sub-system. Both the sub-systems also have parallel religious streams. The MOPME is responsible for basic education, comprising formal free and compulsory primary and literacy and non-formal education. The MOE is responsible for secondary and higher education and also looks after the Madrasah (Islamic) and other formal religious streams of education. More than 700 NGOs are active in non-formal education, with some of them organizing and managing formal primary schools as well. The private sector manages the English medium schools.

Organizational structure of Ministry of Primary and Mass Education (MoPME)

Figure 2: Organizational Structure MoPME



Source: www.mopme.gov.bd

Table 1: Projects of Primary Education (2008-2009)	
1	Construction of Govt. Primary School under IDB Assistance(2nd Phase) (July '03 to June 2009)
2	Primary Education Development Programme -2 (July '03 to June 2010)
3	Reaching Out of School Children Project (Jul.'04 to June 2010)
4	Government Primary Schools Reconstruction and Renovation Project (2nd Phase) (Jul. '06 to June 2011)
5	Registered Non-Govt. Primary School Development Project(3rd Phase) (Jul. '06 to June 2011)
6	2007 flood affected and river eroded GPS reconstruction project (Jan. '08 to Dec 2010)
7	Primary Education Stipend project (2nd Phase) (July '08 to June 2013)
8	EC Assisted School Feeding Program (Jan '09 to June2013)

In MoPME, Directorate of Primary Education (DPE) is the operational body same as the Disaster Management Bureau (DMB) in Ministry of Food and Disaster Management.

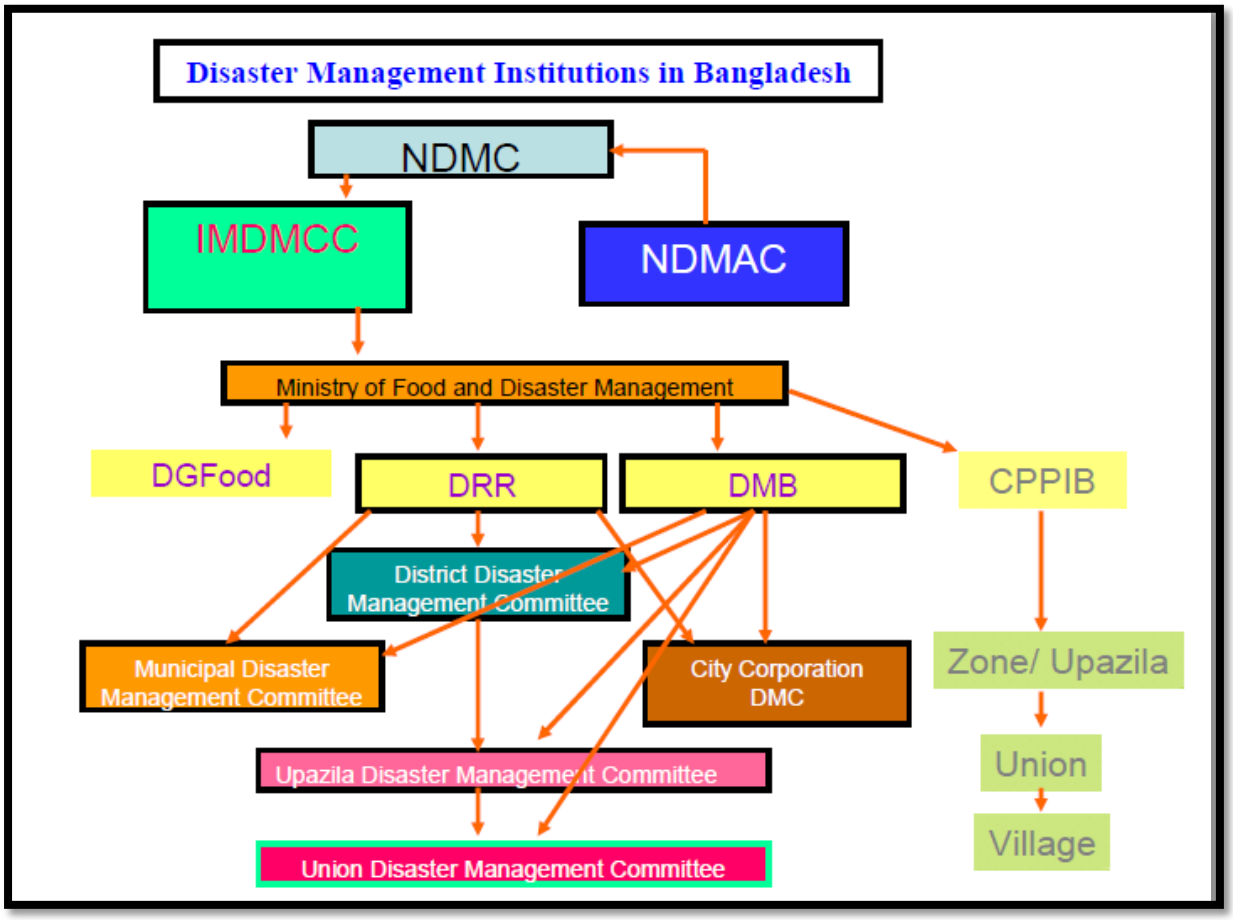


Figure 3: Disaster Management Institutions Bangladesh

Both the education and disaster management sectors have separate institutional set up from policy to implementation levels. At the national level DPE and DMB work as the focal points for the respective ministries. At the district level, district primary education officer (DPEO) and district disaster management committee (DDMC) and below the district level upzila education officer (UpEO) and union nirbhai officer (UNO) work separately and implement the projects and programs. Considering the

national disaster management policy of Bangladesh which mandates that each ministry should have a disaster risk reduction component in their sectoral plans, however, there is a need to orient the programs and projects implemented by the education sector within the framework of disaster risk reduction. In order to understand the missing link between the MoPME and Ministry of Food and Disaster Management (MoFDM), Primary Education Development Program (PEDP II) was reviewed to see how the program implemented by the education ministry consider the existing aspects of potential threat from recurring natural and human induced disasters such as floods, cyclone and fire. The PEDP program covers range of issues to ensure the access, quality, equity, relevance and effectiveness to education but there is a scope to consider the impact of disasters too. Ultimately in the event of disaster, access, quality, equity, relevance and effectiveness will disrupt depending upon the magnitude of disasters. The disaster management rhetoric in Bangladesh is not very new and this is high time to mainstream through the MoPME. The below matrix shows how the Program implemented by the

MoPME can be oriented and tuned in as disaster risk reduction aspects as well to bridge the missing link:

PEDP II program	Components of PEDP	Purpose	DRR linkage
The overall goal of PEDP II is to reduce poverty through universal primary education and sustainable socio-economic development and equity in Bangladesh society as envisaged in the Millennium Development Goals (MDGs). For primary education sector, this means to provide quality primary education to all eligible children in Bangladesh	**Component 1:** Quality primary education through organizational development and capacity building	The purpose of component 1 is to build capacity in the administration both centrally and the Upazila level. Capacity building will instigate a shift in focus to quality improvement and an organization with increased accountability and ability to route more resources to the schools	Upazila is important and vital administrative unit in Bangladesh. One of the outcomes of the component 1 is to build the capacity of Upazila Education Office to have a better planning to improve enrolment and internal efficiency. Schools located in flood plain and coastal areas struggled to accommodate the annual routine due to disruption by floods or cyclone. Inclusion of possible impact of hazards into the planning of UEOs may add value to improve enrolment and internal efficiency of UEOs.
	Component 2: Improved quality in schools and classrooms	The purpose of component 2 is to improve the teaching and learning environment so that all schools meet the PSQL criteria, and so ensure better quality of learning.	As this component is focused on building capacity of teachers, head teachers and school staff, they can also be trained on disaster risk reduction and facilitating school level activities on reducing the impacts of disasters.
	Component 3: Quality improvement through infrastructure development	The purpose of component 3 is to provide sustainable infrastructure, facilities and equipment to encourage and facilitate improve and equitable access for all children, leading to improved student achievement. Component 3 focuses on the physical infrastructure of the primary education sector, with new classrooms and associated facilities needed to accommodate planned increases in competent teachers and pupils.	The construction of primary schools can be incorporated based on existing hazards such as earthquake, floods and cyclone. The past events show that the school buildings were severely damaged due to floods, cyclones and minor earthquake tremor.
	Component 4: Improving and supporting equitable access to quality schooling	The purpose of component 4 is to create a supportive policy-and institutional environment in primary education so that the system is better prepared to address the needs of children who have never attended formal primary school or who have dropped out before completing primary school cycle due to poverty, disability or any other reason. The component should address both demand and supply side constraints.	

Table 2: PEDP II and DRR linkage

School Safety Act in Iran

The school safety act in Iran came after the major earthquake struck in 2005, where more than 10,000 students died because of building collapse. More than 1000 teachers died and around 80 per cent of the school buildings were completely destroyed. To understand the gravity of the problem which was not the earthquake but the lack of safety culture, the Government of Iran took major initiatives to minimize the impact of disaster in the following three key areas:

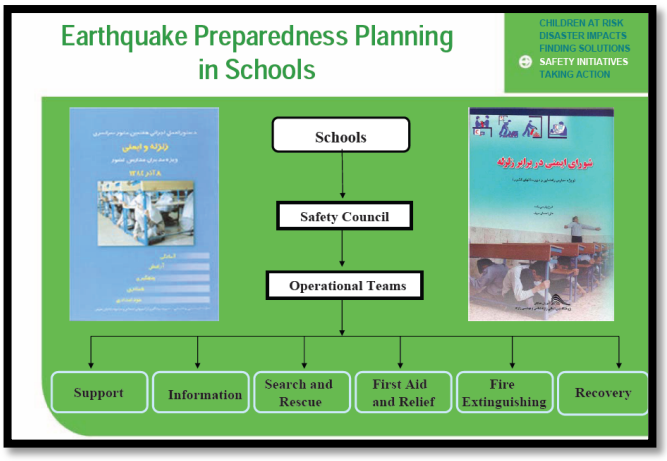


Figure 4: Earthquake Preparedness Planning in Schools

- School earthquake safety initiative
- School Safety Act
- Earthquake Safety Education in Schools

"Earthquake and Safety" Drills

Development process of the School Earthquake Safety Drill

	Year	School Level	No of schools	Overall No of students	No of boys	No of girls	Location
First trial Drill	1996	Primary school	5	1000	600	400	Tehran
Second trial Drill	1997	High school	3	-	-		Tehran
Tehran Training drill	1998	High school	1,059	527,237	266,890	260,480	Tehran
First National Drill	1999	High school	15,499	4,580,688	2,324,907	2,255,781	National
Second National Drill	2000	Secondary & High school	45,000	11,000,000	5,776,000	5,224,000	National
Third National Drill	2001	Secondary & High school	48,000	11,800,000	6,176,000	5,624,000	National
Fourth National Drill	2002	Secondary & High school	50,000	12,000,000	6,500,000	5,500,000	National
Fifth National Drill	2003	All levels	110,000	16,027,000	8,297,000	7,730,000	National
Special Post Bam Earthquake	Feb. 2004	All levels	110,000	16,000,000	8,300,000	7,700,000	National
Sixth National Drill	2004	All levels	120,000	15,700,000	8,100,000	7,600,000	National
Seventh National Drill	2005	All levels	140,815	15,264,349	7,872,610	7,391,739	National

Source: IIEES

Figure 5: Earthquake Safety Drills in Iran

In 2006, the Iranian Parliament passed the School Safety Act for reconstruction by strengthening the vulnerable classrooms. There are two aspects for this initiative which can be seen in terms of structural

and non-structural. National programs were introduced to ensure that schools are built safely as well as establish special standard and guideline for Safe Schools. At school level, preparedness planning was operationalized and made mandatory by the Government of Iran. The major achievements can be seen as shown in table 1.

National Guidelines for School Disaster Safety in Sri Lanka

Sri Lankan government took a decisive step towards disaster management and considered education sector as a vehicle immediately after Tsunami struck in 2004. Disaster Management Act came into existence with the Road Map suggesting all sectors to include disaster risk reduction into the plan and programs. Schools are being engaged to mobilize students, teachers and staff and relevant agencies and officials to develop the culture of safety. Curriculum development, to enhance pedagogy-teacher's training, awareness raising on disaster risk reduction have now become mandatory for the education sector to work in partnership closely with Disaster Management Ministry. Table 3 shown below explains the coordination mechanism under which education and disaster management ministries work together.

Table 3: Linkage between education and DRR sectors in Sri Lanka

<table>
<tr><th></th><th>Actors in education sector</th><th>Coordination</th><th>Actors in the field of disaster management</th></tr>
<tr><td>National level</td><td>Ministry of Education
Development and introduction of guidelines on education policy</td><td rowspan="4">  </td><td>Ministry of Disaster Management and Human Rights
Development and introduction of guidelines on disaster preparedness and management</td></tr>
<tr><td></td><td>National Institute of Education
Curriculum Development
Pre-service and in-service teacher training
Development of didactic material</td><td rowspan="3">Disaster Management Center
Analysis of Disaster Risk
Coordination of Disaster Prevention, early warning and disaster management
Support for and implementation of preventive activities</td></tr>
<tr><td></td><td>Center for Educational leadership and development
In service training in leadership for principals and education managers</td></tr>
<tr><td></td><td>National College of Education and Teachers Training Institutes
Teacher training</td></tr>
<tr><td>Provincial level</td><td>Provincial educational authorities</td><td rowspan="2">  </td><td rowspan="2">District offices of Disaster Management Center
Awareness Raising
Disaster Management</td></tr>
<tr><td>School cluster/District level</td><td>Coordinating school cluster authorities
Teachers training centre for in-service training
In service teachers training in methodological knowledge and skills</td></tr>
</table>

In Schools	**School Principals** ➢ School Development	
	In service teacher trainers ➢ Special in service training of colleagues	

Source: Teaching Disaster Risk Management in Sri Lanka school, pp-12

School Safety around the world

School safety in Americas have gone mile ahead and much emphasis have been given to bring different bilateral and multilateral agencies into one common platform to mitigate disaster risks for education sector. Framework such as Central American and Dominican Republic for Education and Disaster Risk Reduction, a Latin American regional thematic educational platform with the support of UNISDR and involvement of academic universities have worked as watchdog to increase pressure on governments and international/local agencies to integrate disaster risk reduction into education sector.

In Asia and the Pacific, systematic policy or institutional commitment has been achieved. Iran, Australia, New Zealand, Nepal, Syria, Korea, Indonesia, Philippines and Lao, are the examples. However, those countries also report the absence of policy and guidelines on how to integrate disaster risk reduction into curriculum, education materials and training.

In Africa, while Madagascar and Malawi report substantial achievements in mainstreaming DRR into education, most other countries report only minor progress. In all, 12 countries state that disaster risk reduction has not been included in educational curriculum. In Angola and Burundi, UNICEF has collaborated with the Ministries of Education in arranging workshops and promoting the integration of disaster risk reduction into education. In Madagascar, the Ministry of Education and the UN have jointly developed school materials on disaster risk reduction and manuals that are used in all schools throughout the country. Mozambique has started pilot projects in primary schools, in training teachers and children in how to live with disasters. In Burkina Faso 'environmental education' for primary school level has been adopted and disaster risk reduction is partly integrated into higher education. Most of the countries that have not integrated disaster risk reduction into the school curriculum yet, list the lack of educational materials especially in vernacular languages, as a major obstacle.

Achievements on School Safety in regions

Regions			
The Americas	**Asia and the Pacific**	**Europe**	**West Asia and North Africa**
18 countries raised awareness among school communities and developed school protection plans (Argentina, Bolivia, Brazil, Chile, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, USA, Venezuela).	17 countries organized activities related to the theme of the campaign Bangladesh, Brunei Darussalam, People's Republic of China, Fiji, India, Indonesia, Japan, Lao PDR, Nepal, Niue, Papua New Guinea, the Philippines, Singapore, Tajikistan, Thailand, Tuvalu, VietNam).	A number of countries marked the International Day for Disaster Reduction	In Iran, all primary, secondary and high schools (over 130,000 schools) took part in its '8th National Drill' as part of its 'Annual School Earthquake & Safety Initiative'. Over 14 million school students participated
Costa Rica and Peru integrated DRR into their school curricula	National state programmes on DRR targeting school communities are under way in countries such as Iran, India, Indonesia, Nepal, the Philippines and Turkey.	DRR initiatives were undertaken in countries such as Austria, France, Hungary and Slovenia. In Armenia, a training project helped turn 375 school students, teachers and school principals into qualified DRR trainers	
2 regional DIPECHO projects with UNICEF, in collaboration with the UN/ISDR secretariat, helped strengthen local capacities of Education Ministries and Civil Protection Departments, including in Guatemala, Nicaragua, El Salvador, Costa Rica, Honduras and Panama.	In Nepal, DRR-trained school students have become "risk education ambassadors" to other schools	DRR initiatives targeting school communities are under way in countries such as Slovakia, Romania, Bulgaria, Spain, France and the Czech Republic	
	In India, a single programme helped some 100,000 students and 2,500 teachers in 200 schools develop school disaster management plans		

Table 4: Achievements on School Safety around the regions

Table 4 provides interesting details about the initiatives take up by various stakeholders in different regions. Most of the initiatives around the world on school safety are still at the very initial phase of building consensus and creating awareness with the involvement governments, academia, international organizations, local authorities, practitioners, schools and community.

Hyogo Framework of Action

The integration of DRR into school curricula and public awareness has been high on the agenda of multi-, regional, bilateral and national governmental and non-governmental organizations, particularly in the aftermath of the Indian Ocean Tsunami and reiterated in the Delhi Declaration. While an outperforming group of 25 countries (including Australia, Hong Kong China, Islamic Republic of Iran and New Zealand) report comprehensive or substantial achievements, Bangladesh, Republic of Korea and Nepal have reached institutional commitment. The remaining countries have not yet made significant progress. However, Sri Lanka and Nepal as well as Tajikistan in Central Asia have introduced DRR into school curricula of selected grades during the reporting period[8].

The interim regional synthesis report on the implementation of Hyogo Framework for Action suggests that, to influence perception and behaviour with regards to school safety DRR education at school and pre school level could be important strategy. It further says that many of the initiative in the area of DRR concentrated as project activities. However, there is a need to have systematic approach in dealing education and DRR sectors to provide technical assistance to design DRR curricula, training materials, structural resilience and non-structural safety of school building.

8. Initiatives on School Safety in Bangladesh

In Bangladesh several international and national level non-government organizations have taken initiatives on school safety. An exhaustive list of such initiatives has shown below:

Organization	Initiatives
Action-Aid Bangladesh	Safer school Safer Community
Concern Universal	Establishment of School badges, development of training manual on School safety
Islamic Relief Worldwide	Development of teachers manual, TOT for teachers and staff, development of School Safety and Preparedness Plan and simulation
Plan Bangladesh	Development of teachers manual, TOT for teachers and staff, development of School Safety and Preparedness Plan and simulation
Save the Children UK	Co-lead in Education in emergencies
UNICEF	1. UNICEF, the Centre for Injury Prevention and Research, Bangladesh, The Alliance for Safe Children and the Government of Bangladesh are currently monitoring the School Safety programme in schools like Brommogacha, with a view to incorporating injury-related subjects in the national social studies curriculum. 2. Co-lead in Education in emergencies 3. School theatre to promote hygiene practice after cyclone SIDR
Comprehensive Disaster Management Program (CDMP)	Development of Earthquake School Safety Manual

Table 5: Initiatives on School Safety in Bangladesh

8 **Regional Synthesis Report on Implementation of the HFA in Asia and Pacific 2007 – 2008/ 09**

9. Conceptual Framework Analysis of Culture of Safety in Schools

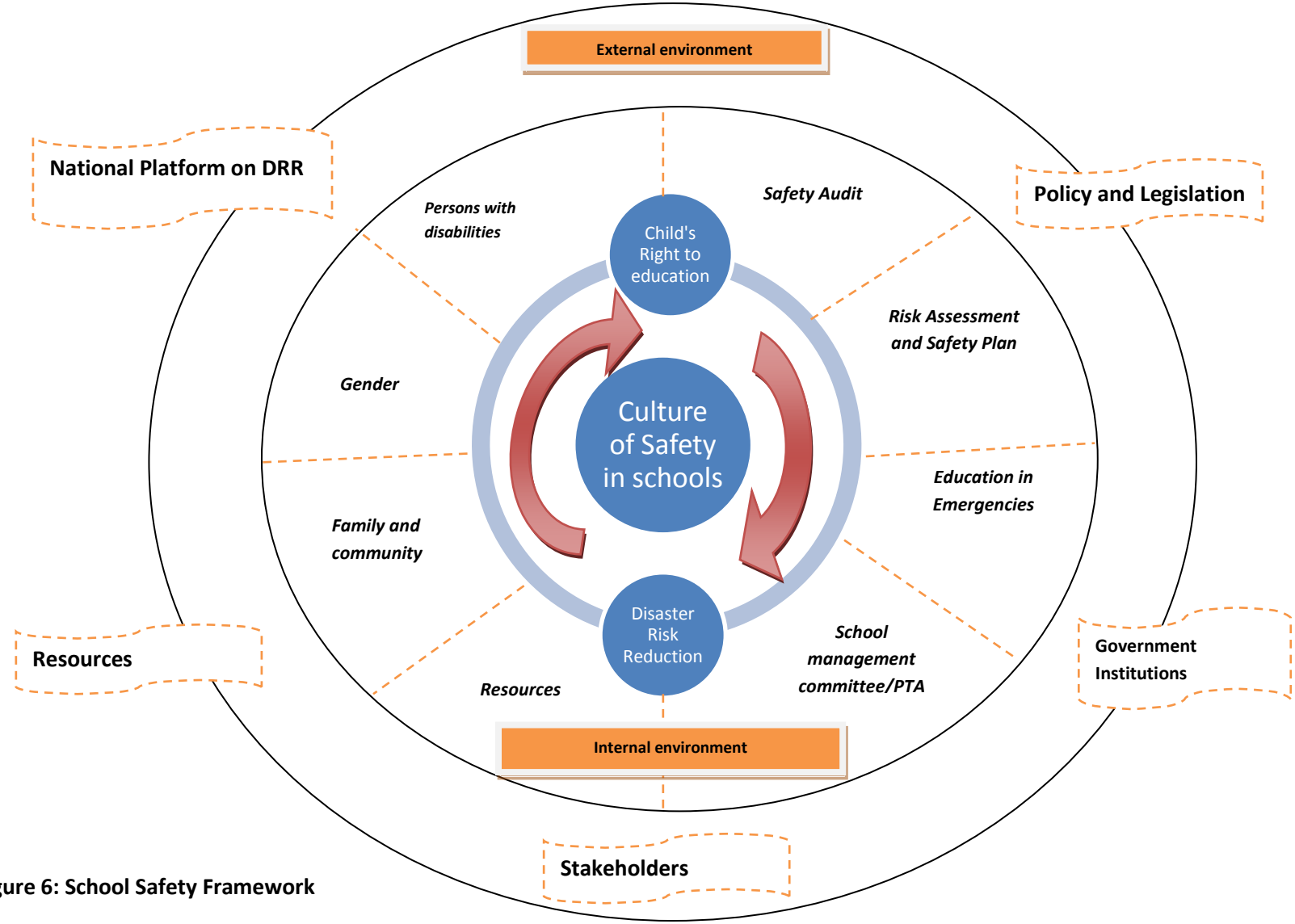


Figure 6: School Safety Framework

The framework of culture of safety in school moves around child's right to uninterrupted continuous education, child's right for safe environment and disaster risk reduction. School also has been seen influenced by internal and external factors when it comes to safety of the children. In this section efforts will be made to analyze the internal and external environment of school keeping children's right to education and disaster risk reduction as a yardstick.

External environment

National plan on children and disaster risk reduction

Policy and legislation is one of the key factors in reducing the risk on children. Realizing the impact of concurrent disasters in Bangladesh on education sector, the national plan of action for children (2005-09) does recognize the urgency to build capacity of children's organizations to participate in the development of policies and programs which affects them through raising awareness on children's right to participate. It includes building the capacity of NGOs and CBOs who work with children under the guidelines of Ministry of Disaster Management and relief. On the other hand, the national plan for disaster management (2008-2015) also approves to include disaster risk reduction perspectives into primary, secondary and tertiary levels educations though developing and implementing school safety plan including national school safety plan and school building level emergency response plans. Comparing both National Plan of Action for Children and National Disaster Management Plan, there is a link which describes the vision of the Government of Bangladesh to reduce the disaster risk by promoting children's right to education. This also provides rationale to this research work to explore the comprehensive framework for school safety which is more than school safety plan and preparedness.

Global initiatives on school safety have gone far ahead. A comparison can be made with the Ahmadabad Agenda, Islamabad Declaration and Bangkok Action Agenda to see where Bangladesh stands on schools safety.

Table 6: Global Commitment in education sector

Ahmadabad Agenda 2007	Bangkok Agenda 2007	Islamabad Declaration 2008
1. Disaster risk reduction education in schools, 2. Disaster resistant school infrastructure, safe school and community environment and 3. Advocacy and government policy on school safety[9]	1. Integrating disaster risk reduction into school education, 2. Strengthening disaster risk reduction education for community resilience, 3. Making school safer, 4. Empowering children for disaster risk reduction[10]	1. National governments develop a school safety policy as part of their national development plan that is proactive and focuses on preparedness and mitigation. 2. National government in partnership with local authorities create National School Safety Program and Fund to implement action plans for structural and non-structural initiatives 3. National government as the regulatory body for private schools ensure private sector raise their standards to be safe schools within the next five years 4. Local government develop school safety action plans within the framework of the national school safety programs that are formulated in consultation with communities and address their identified priorities 5. Local governments partner with private institutions and corporations, seeking their support and commitment for the implementation and finance of the plans.[11]

9 International Conference on School Safety 18th - 20th January, 2007 Ahmadabad, India

10 ASIA PACIFIC REGIONAL WORKSHOP ON SCHOOL EDUCATION AND DISASTER RISK REDUCTION 8-10 October 2007, Bangkok, Thailand

There are remarkable initiatives taken by the Government of Bangladesh to minimize the risk pertaining to schools and children. Physical strengthening of school buildings in the coastal and flood prone areas which is being used by the school and community at large as a shelter; is one such initiative towards mitigating the disaster impact in education sector. Under Comprehensive Disaster Management Program (CDMP) schools were focused to create an environment of safety through plans and simulations. As the National Plan on Disaster Management proposes the national level school safety program, this requires to consider and link with the development programs in education sector so that both policies and programs at national level from disaster management and education merge together and trickle down to the school level ensuring both children's right to education and disaster risk reduction.

Institutions

In Bangladesh both government and non-government institutions cater the educational needs of the poor. However primary education has been assumed by the Government of Bangladesh's responsibility under the provision of universal compulsory primary education recognized by the Constitution of Bangladesh and the Compulsory Primary Education Act 1990. At the district level both education and disaster institutions are in place. District primary and secondary education offices and district disaster management committee chaired by Deputy Commissioner. Facilities Department and Local Government and Engineering Department (LGED) are responsible for the construction and infrastructure development of the schools. These institutions can play very crucial role in building the external environment around the school by ensuring safer construction and bare minimum infrastructure as per hazard and geographical areas. At this moment, there is very little coordination among directorate of primary and secondary education offices at the district level, district disaster management committee, facilities department and LGED to merge the two parallel issues of children's right to education and disaster risk reduction. The damage of school infrastructure and properties is the concrete evidence to the above argument where disasters are continuously hitting hard in both flood plain and coastal areas, besides the day to day potential threats due to human hazards to schools in the urban areas. Authorities at the local level need to merge their vision and mandate to ensure children's safety through disaster risk reduction.

Stakeholders

In the category of external environment, donors, INGOs/NGOs and CBOs play very important role on child's right to education and disaster risk reduction. In Bangladesh as per the school survey report 2007, 25 percent of the primary schools out of 81,434 are managed by non-government organizations as registered non-government private school (RNGPS). Primary schools around 37,672 are governed by government of Bangladesh. This quantify the role of RNGPS and government in ensuring child's right to education where disaster risk reduction is equally important for both government and NGPS as well to promote culture of safety in schools in Bangladesh.

---

11 INTERNATIONAL CONFERENCE ON SCHOOL SAFETY Islamabad May 14 – 16, 2008

Resources

Resources are keys to ensure the implementation of the child's right to education and disaster risk reduction. Under the Compulsory Primary Education Act of 1990, first Primary Education Development Program (PEDP I) came into effect with a set of 27 projects in education sector under the Ministry of Primary and Mass Education (MoPME). PEDP I adopted a sector wide approach (SWAP) and gained recognition by various development and donor agencies as well. Against this backdrop, PEDP II is being currently implemented and government is taking a lead role in program coordination under the guidance of MoPME. This PEDP II has components which focus on quality of primary education improved through organizational development and capacity building; quality improvement through infrastructure development; improved access to education especially for the poorest and socially excluded; and effective implementation, management and monitoring. The initiative taken by the Government of Bangladesh for primary education would ensure education for all in line with MDGs goal. The inclusion of disaster risk reduction component would be able to reduce the impact in education by several potential threats of disasters.

National Platform on DRR

With the involvement of several stakeholders in disaster risk reduction, national platform on DRR serves as coordination forum to seek political and legal commitment, to ensure the multi-stakeholder collaboration and coordination for the sustainability of DRR. The national platform on DRR in Bangladesh can be viewed to engage various sectors engagement with their diverse perspectives and action build on existing systems and mechanism.

Internal Environment

Safety audit

School safety is the responsibility of many stakeholders including governments, school management, teachers, student, parents and the community. The safety level of a school can be identified by conducting school safety audit. Safety audit can become an integral part of the school management to ensure safety among children, teachers and management staff.

As discussed earlier, the disaster impacts on education sector clearly urges the authorities to consider the hazard and the disaster risk factor so that the school buildings can be resilient to any disastrous event. At the country level flood inundation maps, cyclone prone areas and earthquake zones have already been developed. The importance of risk exposure should come in place before the construction of school building. While comparing the impact of disasters on primary schools, it indicates that there is a need to have different sets of construction designs suiting to the hazard prone areas in the country.

Table 7: Disaster and number of schools affected in Bangladesh

Disaster	Number of Primary schools Buildings affected		Total
	Fully	Partially	
Floods 1998	1,718	12,000	13,718
Cyclone 1991			9,287
Flood 2004	853	17,000	17,853
Flood 2007	205	8,668	8,873
SIDR 2007	3,705	784	4,489
Aila 2009	2,534	354	2,888

Source: 1) Karim, Nehal (2005). Cyclonic Storms in the Coastal areas of Bangladesh: Socio-economic impact. 2) APIT, 2009. Minimizing Education Infrastructure Losses Due to Disaster

There are many aspects of location and safer construction which requires the education institutions to ensure construction of disaster resilient schools throughout the country which include the following:

Table 8: Location and safer construction

Location and safer construction
Site
Building
Architectural design aspect
Furnishing and equipments
Outdoor facilities
Design parameter
Planning and implementation

Source: School Construction Guideline, Lao PDR 2009

It is important to understand how education institutions' infrastructures have been put in place: whether they considered location and safer construction or not.

Risk assessment and safety plan

At school level, risk assessment and safety plan is the second step towards ensuring safety environment within and outside school. School safety audit is the diagnosis of the existing risk within and outside the school. Audit outcome serves the purpose of assessment and development of safety plan become the treatment of the hazard and risk in the internal and external environment of the school.

Education in emergencies

As a part of the UN Humanitarian Reform, UNICEF and Save the Children were designated as global cluster co-leaders for education in emergencies. In line with global agreement UNICEF and Save the Children in Bangladesh have agreed to co-lead the education cluster. The risk assessment and safety plan can be integrated into education in emergencies to ensure that schools are well prepared to respond during emergencies and continue education as well.

School management committee/Parent teachers association

School Management Committee (SMC) is formed as per the government directives with certain well defined functions and parents teacher association play a supporting role in building a favourable teaching and learning environment in schools. The SMC's directives can provide more space to the teachers and students to be part of the committee to represent the school in decision making process on child's right and disaster risk reduction.

Resources

School resource can be seen in four aspects such as; human, material, and information and financial[12].

a. **Human Resources**: For the purpose of this research, human resources do not mean the number of teachers available in a school. Knowledge about disaster risk reduction and managing the school in the event of any natural and human made disaster is important. At present there is little attention to build the capacity of school teachers on disaster risk reduction though they are responsible to teach students about natural hazards and disasters.

b. **Material Resources**: Material resources are very important in emergency situations. It is not mandatory that every school should have standard quality equipments but it is mandatory that every school should have at least the basic resources which are found in their surrounding environment, using which they can prepare necessary equipments during an emergency. For example, if a school cannot afford to have medical stretchers, they can use bamboo and bed sheets/rugs to make temporary stretchers. During the field visits, it was observed that many schools awaits the external organizations to provide them with the necessary materials rather than actively search for locally available resources by themselves. Many non-governmental organizations have taken very important initiatives to provide material resources and trained school teachers and students on the usage of equipments related to first aid, search and rescue and fire safety. However, a question arises whether schools are interested to invest time and budget to mobilize bare minimum equipment to deal with disaster situation or not? It is better to indentify the requirements of material based on the existing hazards, available local materials and then how to access the materials. Under various projects and programs, non-governmental organizations donate first aid, stretchers, fire extinguishers and other necessary equipments. But these donations are in limited schools and areas.

c. **Information resources**: Location of school decides the accessibility of information resources in Bangladesh. Possession of relevant technical, procedural and other information and ease of access to it.
d. **Financial resource**: budgeting for the above.

12 Stay Safe: Twigg, J. 2007

Family and community

Schools need to work closely with families to enable children to achieve their full potential. The family environment can reinforce health and safety messages at school. At the same time, children are potential vehicle for introducing ideas about good practices of health and safety into the family. This is another area that conventional risk and emergency planning guidelines are likely to overlook. The suggestive framework on culture of safety in schools therefore is communication and engagement with family and safety issues (in the school and at home).

Gender

Both girls and boys are equally vulnerable to any form of hazard/disaster. Therefore, risk assessment and safety plans needs to focus on both boys and girls in involving them equally to understand their risk within school and outside. Training school boys and girls on first aid, fire safety, search and rescue should be done by motivating both the groups to participate and share the responsibility to built up safer environment in school.

Persons with disabilities

Disasters do not discriminate. They affect minorities and majorities; people without and people with disabilities; young and old; men and women. The persons with disabilities are left at the periphery when it comes to disaster planning and mitigation activities. However, it has been observed in many disaster situations that they need specific support to complement their work due to the challenges they face in moving, hearing, seeing, communicating or learning. Moreover, disasters impact persons with existing disabilities and injuries can create a new generation of persons with disabilities. Therefore, the needs of people with disabilities have to be incorporated in all the policies and programmes throughout the disaster management cycle. This is very important during evacuation. For example, while evacuating a person with physical impairment, it is mandatory to evacuate him/her with his/her supporting equipment such as wheel chair or crutches.

10. Proposed culture of safety indicators in Bangladesh

Based on the developed conceptual framework of culture of safety in schools, the research proposes the following indicators. These indicators can be used as a school safety report card which means by testing these indicators school will be able to see the status of their safety measures. The proposed safety indicators can also be included into various programs and projects in education sector. For example, the PEDP II target schools can be also tested in terms of access, quality, equity, relevance and effectiveness through the school safety report card. Schools can also add or omit indicators based on the local context or existing hazards. In terms of assigning score to the school safety report card, school can decide by themselves. **The proposed indicator for culture of safety in schools can also become part of Primary School Quality Level Indicator (PSQL) which will ensure that the disaster risk reduction aspects and its impact has been incorporated into the policy and programs .**

Table 9- School Safety Report Card-How Safe is Your School?

Inspection Date	**Investigator Name**	**School Name**		
School Safety Indicator		**Yes**	**No**	**Score/rating**
Were the school buildings designed to meet the building code standards?				
Did (does) the building code provide guidance on hazard resilient design?				
Was the soil tested before the school was built?				
Were the builders trained to apply hazard resilient techniques?				
Was the school construction supervised by qualified engineers?				
The building has been checked by local fire department for fire safety				
Earthquake and Cyclone: we have fastened tall and heavy furniture. We have put latches on cabinets, hung pictures securely on closed hooks to prevent any possible injury				
There are several crack in the building and the reason is not known yet whether due to poor material or impact of earthquakes				
Have all natural hazards posing a threat to schools been identified? (Have all natural hazard risks to the school been identified?)				
How often are these risks reassessed?				
Do students, teachers, staff and school administration know what to do before, during and after a hazard event?				
Has a safe location been identified if the school must be evacuated?				
Is the evacuation route to the identified evacuation location safe?				
Do natural hazard events regularly create disruptions in the school calendar?				

Table 9- School Safety Report Card-How Safe is Your School?			
Inspection Date	**Investigator Name**	**School Name**	
School Safety Indicator	**Yes**	**No**	**Score/rating**
Is there a back-up plan to ensure that school operations continue?			
Does a disaster management committee exist in the school or the local community?			
Are school furnishing and equipment designed and installed to minimize potential harm they might cause to school occupants?			
Are the school population and local community aware of how they can reduce their disaster vulnerability?			
Are they actively taking measures to learn their vulnerabilities?			
Does the school manage to develop surviving life skills among children?			
Has the school managed to have first aid, fire safety and search equipments?			
Does the school manage to conduct the safety drill on routine basis?			
During a hazard event, does the school serve as a shelter?			
Has it been designed to do so?			
Does the education continue during emergency?			
If needed we have planned to provide emergency shelter for our community			
We have planned for education continuity for our students including alternate location to continue classes, alternate schedule, and method of instruction as needed			
Are mechanisms in place to ensure school maintenance is financed and executed?			
Are the school population and the local community aware of the risk? – this could go near the vulnerability question above			
If the location of school is close to the main street or highway or road, did school manage to advocate for safety zone for children?			
Does the school manage to bring community, local elite and elected representative together to address the hazard related issues?			
Does the school manage to deliver the disaster related issues through curriculum?			
Does the school reach out through students to other non-school going children and community in terms of awareness?			
Has the school identified persons with disabilities and support required during evacuation of PWD?			
Does the school manage to allocate resources for disaster risk reduction?			

Score/rating- 1, 2 and 3 (1-very good, 2- not good, 3- needs improvement)

11. Recommendations

There is no doubt that the education sector plays a huge role in in addressing various issues of poverty reduction and sustainable economic development and achieving Education for All (EFA) is one among them. Bangladesh has moved up on development ladder and education sector has been proven as a blessing. At the same time, natural disasters are also on the rise and with the climate change scenario, the frequency of disasters will also increase manifold. There have been several intense efforts to mainstream disaster risk reduction into various sectoral ministries which have been impacted tremendously by various disasters such as education. It is high time to see the linkage between the policy and programs of education and disaster risk reduction sector and fine tune the programs and projects accordingly. Furthermore, schools not only serves the community as a centre for learning and development, but also in crisis times it becomes the only resort for people to save their lives in the form of shelter. This learning and life saving centre requires unified approach from both the ministries (education and disaster management) to develop their resources in carrying out its multiple roles. Bangladesh serves as model country for rest of the world on cyclone preparedness and there is a scope that it can also become unique in saving majority of the population (47 per cent of the total population are children) by bringing School Safety into policy and legislation framework. Based on the investigation, this research would like to make the following recommendations to the Ministry of Primary and Mass Education (MoPME) and Ministry of Food and Disaster Management (MoFDM):

A. **School Construction Guideline**: The research shows that both education and disaster management sectors have approached the schools differently. There is a need to have a common guideline for both the sectors to address education and impacts of disasters. School safety guidelines can be composed of safer construction, facilities and outdoor consideration as well. Construction of primary schools which can also serve the purpose of a shelter requires taking geographical distinctiveness of the country which includes floods, cyclone, earthquake, river erosion; fire etc. Construction design has to be different in different locations of the country. The construction guidelines should cover all future school constructions by the Ministry of Primary and Mass Education (MoPME) from the national to local level. The guideline should set the minimum standard that has to be met by anyone engaged in school construction in Bangladesh. Donor and development partners may use their own standards and guideline in addition to and not in replacement of national school construction guideline. The guidelines should cover the entire construction process from site planning, design and maintenance.
B. **Assessing School Safety**: School safety is the responsibility of many stakeholders- governments, school management, teachers, students, parents and the community. The disaster preparedness level of a school can be identified by conducting a school safety audit. An audit can provide the status of safety of a school and identify the areas that need improvement. Safety of school buildings can be assessed by first carrying out a rapid visual survey of the buildings. If the survey indicates that further structural analysis is needed, the same will have to be carried out by a qualified and competent structural engineer. If structural strengthening or retrofitting is recommended, then the same can be taken up by the school management. The structural assessment of the existing situation of primary schools needs to be assessed in terms of resiliency towards existing hazards. Schools located in coastal or flood plain areas require complete investigation to get an overview of the present situation which will

ultimately help implying corrective measures. A school safety audit framework can be introduced to measure the strength and weakness of physical infrastructure.

C. **School safety preparedness should be mandatory:** This is one of the important elements of culture of safety in schools and it should be mandatory in all schools in Bangladesh. It will help schools in assessing the hazard, vulnerability and risk in and around the school. Natural hazards will always be the biggest threat wherever the school will be located and at the same time, human induced hazards are always ignored or overlooked by school. By introducing school safety preparedness, the schools will be able to foresee the possible consequences of potential threat and can mobilize students, teachers and community to reduce the risk. At this moment several non-government organizations have facilitated the school safety and preparedness plan which requires to be integrated with Union Education Officer (UEOs) and LGED so that the financing of preparedness can be ensured institutionally. This will also address the issue of children's access to education following a disaster. School interruption makes milestones such as access to education extremely challenging to reach and standards difficult to achieve and enforce. Disasters prematurely end the education for many students for several interrelated reasons such as school does not quickly resume and economic disruption to families forces students to help at home or join the workforce.
D. **Simulation and mock drills should be mandatory:** one of the important ways that schools develop response capacity skills and raise awareness of the need for assessment, planning and risk reduction is by conducting regular emergency drills. Drills offer the opportunity to identify training needs, establish new reflexes and teach through action and repetition. School drills are an important opportunity for student learning, beyond evacuation and other protective behaviours themselves.
E. **Inclusion of Culture of Safety indicators in PSQL:** The propose indicators for culture of safety in schools can become part of the Primary School Quality Level where facilities, learning and capacity development of teachers and management committee are being discussed. These culture of safety indicators can also become a School Safety Report Card to assess how safe is the school and assessment can be done at the school level by the management, teachers and students together.

12. Way Forward

This research would like to seek attention from policy makers, development partners, education and disaster management ministries, international non-government organizations, and DRR practitioners to adopt and promote the concept of culture of safety in schools. The entire aspects of Culture of Safety in Schools in Bangladesh can be seen in two segments to move forward; first- integrating DRR into school curricula and second- safer school construction. Though disaster risk reduction issues have been incorporated into the curricula but at the same time, there is a need to give more emphasis on pedagogy. This requires providing relevant teaching aid to teachers.

Integrating DRR into School Curricula	Safer School Construction
At present, DRR is included only into TEXT version in different grades. But there is need to move forward to provide teaching aid to teachers so that they can facilitate the formal curricula.	Every new schools built in the country is safe from natural hazards
The National Teachers Training Institute can take the lead role into providing regular training to the newly recruited teachers.	Risk assessments are undertaken of existing school structures and actions are taken to retrofit the schools which are situated in high risk areas.
Ministry of Primary and Mass Education (MoPME) can allocate budget for teachers training, material development into their annual budget.	Systems are in place for ensuring risk reduction measures are incorporated in regular maintenance of school buildings by LGED and Department of Engineering and Education.
The National Pedagogical department can take the lead role to work in close partnership with Disaster Management Bureau (DMB).	System in place for training technical staff of MoPME responsible for school construction on hazard resilient design and construction
Partnership with development partners involved in education sector agenda of the country in taking up integration for specific grades.	New Guidelines should Developed by the Ministry of Primary and Mass Education on integrating DRR into education.
Integration would have budgetary implications- Essential to have political will, buy in from high level officials from Ministry of Education- involve Department of Planning.	Working closely with the Department of School Construction in partnership with development partners involved in funding school construction
Plan in advance of the curriculum revision cycle	Guidelines should follows the modalities of school construction being practiced in the country (e.g. community built schools, contractor based construction) and provides guidance on integrating DRR.
Education sector portfolio involves both Government and the private sector, hence develop partnership between various stakeholders	
Link pilot initiatives to larger education sector programs	
Dialogue with the National Education Sector Working Groups (UN Agencies, bilateral and multi lateral agencies) involved in education sector agenda of the country	

13. Bibliography

Ahmadabad Action Agenda for School Safety 18th - 20th January, 2007 Ahmadabad, India

APIT, 2009. Minimizing Education Infrastructure Losses Due to Disaster

Asia Pacific Regional Workshop on School Education and Disaster Risk Reduction 8-10 October 2007, Bangkok, Thailand.

Choudhury, Jamilur R. Cyclone shelter and its multipurpose use, Bangladesh University of Engineering and Technology.

CoX, S. & CoX, T. (1991) The structure of employee attitudes to safety - a European example Work and Stress, 5, 93 - 106.

Damage, Loss and Need Assessment for Disaster Recovery and Reconstruction, World Bang, 2008, Bangladesh.

Guidance note on safer school construction: Global Facility for Disaster Reduction and Recovery, 2009.

Guldenmund, F.W.(2000) The nature of safety culture: a review of theory and research Safety Science, 34, 215 - 257.

International Conference on School Safety Islamabad, Pakistan, May 14-16, 2008.

Karim, Nehal. Cyclonic storm in the coastal areas of Bangladesh: A socio economic impact, University of Dhaka, Bangladesh

National Plan for Disaster Management 2008-2015 (Final Draft for final approval), Government of Bangladesh, May 2008.

Patel, Marla (2008). Disaster Prevention for Schools: Guidance for education sector decision makers, consultation version, Geneva.

Regional Synthesis Report on Implementation of the HFA in Asia and Pacific 2007 – 2008/ 09, United Nations International Strategy for Disaster Reduction (UNISDR), Bangkok.

Saadi, Shashanka(2006). Safer school means safer community, Action Aid Bangladesh

School construction guideline, Division of design and construction, department of finance, Ministry of Education Lao PDR, December 2009.

School Disaster Risk Reduction- think globally act locally, COGSS and Risk Red and IESS.

The Daily Star, 29 August 2010

The Daily Star, 4th December 2004

Towards a disaster safe school: National guideline for school disaster safety, Ministry of Education and National Institute of Education, Sri Lanka

Twigg, J. (2007) Stay Safe: A conceptual framework for school safety

Vickery, D.J (1982). School buildings and natural disasters, UNESCO.

www.mopme.gov.bd

www.idph.state.ia.us/patient_safety/glossary.asp.

Yule, S. (2003) Safety culture and safety climate: a review of the literature Industrial Psychology Research centre 1 - 26.