Education in Emergency:
Exploring Options for Continued Education during Disasters in Bangladesh
Education in Emergency: Exploring options for continued education during disasters in Bangladesh
Foreword

Bangladesh is a disaster prone country. Every year it experiences several types of disastrous events. Cyclones and floods are the major natural hazards in Bangladesh along with river bank erosion, drought, flash flood, seasonal storm, land slide, water logging, salinity and tornado. Bangladesh is also at risk from earthquake and Tsunami and climate change along with new dimension in urban risks due to its fast growing urbanization and density in urban centers.

Education sector in Bangladesh is highly vulnerable to these disasters. Education service delivery often gets severely hampered due to the impacts of these disasters. Unfortunately, there is huge knowledge gap regarding education service delivery in Bangladesh and implications of disasters on it.

I am pleased to learn that the Education Cluster had taken a measure to conduct a study under the name of “Education in Emergency: Exploring options for continued education during disasters in Bangladesh”. I believe this study will contribute to minimize the knowledge gap to an extent.

Through this message, I would like to offer my sincere thanks to all responsible persons of the Education Cluster as well as other concerned parties for their contribution to the study.
It is a pleasure for us to submit the study report to Education Cluster in Bangladesh. As a team, we enjoyed working in this study that and we believe it has potentials to influence the education policy and practices in Bangladesh. Many people have contributed to the study. We deeply acknowledge their input and support. First of all we would like to thank the participants for giving their time to the study team despite their busy schedules. We appreciate the efforts of the students, teachers, school management committee members, education officers, Local Government officials and civil society members. Secondly, the report has been prepared with active technical, financial and intellectual support from Save the Children, Plan, UNICEF and the entire Education Cluster. We are immensely grateful to our technical review panel members - Prof. Dr. Md. Azizur Rahman, Director (Res. & Doc.), NAEM; Mohd. Abdul Qayyum, National Project Director, CDMP; Md. Isa Faragi, Deputy Director, DDM; Md. Shahjahan, Controller, BMED; Hamida Banu Begum, Former Senior Specialist, NCTB; and Muhammad Mushfiqul Wara, Programme Development and M&E Manager, CDD. They were actively involved in all phases of the study and provided us feedback and input. We would also like to acknowledge staff of local NGOs who provided very high quality support and hospitality and shared their knowledge and experience. Finally, the members of the study team of NIRAPAD. They have spent their time, more than what was actually planned for, to make a report useful to Education Cluster. Very special thanks to Mr. Zahid Hussain and Ms. Momtaz Shirin for their continuous effort to conduct this study.

Kazi Shahidur Rahman
Chief Executive Officer
NIRAPAD
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<tr>
<th>Abbreviation</th>
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<tr>
<td>BBS</td>
<td>Bangladesh Bureau of Statistics</td>
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<td>BEED</td>
<td>Bangladesh Education Engineering Department</td>
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<td>BIDS</td>
<td>Bangladesh Institute of Development Studies</td>
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<td>BKITCE</td>
<td>Bangladesh-Korea ICT Training Center for Education</td>
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<td>BMD</td>
<td>Bangladesh Meteorological Department</td>
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<td>BANBEIS</td>
<td>Bangladesh Bureau of Education Information and Statistics</td>
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<td>BEED</td>
<td>Bangladesh Education Engineering Department</td>
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<td>BDRCS</td>
<td>Bangladesh Red Crescent Society</td>
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<td>BOU</td>
<td>Bangladesh Open University</td>
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<td>CCA</td>
<td>Climate Change Adaptation</td>
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<td>CDMP</td>
<td>Comprehensive Disaster Management Program</td>
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<td>CELS</td>
<td>Child Education and Literacy Survey</td>
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<td>CFS</td>
<td>Child Friendly Space</td>
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<td>DDM</td>
<td>Department of Disaster Management</td>
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<td>DG</td>
<td>Director General</td>
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<td>DPE</td>
<td>Directorate of Primary Education</td>
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<td>DMIC</td>
<td>Disaster Management Information Centre</td>
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<td>DRM</td>
<td>Disaster Risk Management</td>
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<td>DRR</td>
<td>Disaster Risk Reduction</td>
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<td>DRRO</td>
<td>District Relief and Rehabilitation Officer</td>
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<td>DSHSE</td>
<td>Directorate of Secondary and Higher Secondary Education</td>
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<td>DTE</td>
<td>Directorate of Technical Education</td>
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<td>EFA</td>
<td>Education for All</td>
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<td>EiE</td>
<td>Education in Emergency</td>
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<td>ERF</td>
<td>Early Recovery Facility</td>
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<td>GCE</td>
<td>General Certificate of Education</td>
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<td>GIS</td>
<td>Geographic Information System</td>
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<td>GoB</td>
<td>Government of Bangladesh</td>
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<td>GPS</td>
<td>Government Primary School</td>
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<td>HCTT</td>
<td>Humanitarian Coordination Task Team</td>
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<td>ICT</td>
<td>Information and Communications Technology</td>
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<td>IFRCS</td>
<td>International Federation of Red Cross and Red Crescent Societies</td>
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Executive Summary

Disaster is arguably one of the most important factors preventing many Bangladeshi children from enjoying their right to education. While the country made significant progress in establishing effective policies, institutions and practices in disaster risk management, it remains too fragile with its primary education. Limited knowledge about the DRR in education is one of the primary reasons for not being able to attract adequate attentions required. This study is undertaken to fulfill the gaps in knowledge.

The first chapter of this report provides an introduction to the report by outlining the Background; Purpose and Methodology; and Scope and Limitations. This study on education in emergency used case study method as a research strategy to explore options for minimizing disaster risks on education in Bangladesh.

The second chapter gives an overview of the education system and hazards in Bangladesh. The chapter articulates the legislations and policies; structure; and management system for primary and secondary education in Bangladesh.

Bangladesh education system is primarily managed by the Ministry of Education (MoE) and the Ministry of Primary and Mass Education (MoPME). The MoE oversees the formulation, planning, monitoring, evaluation and execution of programmes for secondary and higher education streams while the MoPME is responsible for policy formulation, planning, evaluation and execution of plans and initiating legislative measures related to primary and non-formal education as well as mass education.

This chapter also reflects the current statistics on Bangladesh education sector. It reflects there are 78,685 primary institutions, 19,070 school level institutions, 3,475 college level institutions, 9,330 madrasah institutions, 282 professional institutions, and 2,981 technical-vocational education institutions. The report reflects that in 2011, over 30 million children were enrolled within the formal education system; and the net enrolment average dropout rates for primary school students (grade 1-5) were 94.89% and 45.1% respectively (2010).

This chapter provides a clear perception on the hazards that commonly occur or have potential risk of occurring in Bangladesh, such as cyclone and storm surge, flood, flash flood, earthquake, landslide, riverbank erosion, salinity intrusion and water logging.

Chapter three describes the impact of disaster on education- more specifically the impact of disasters on policy implementation; provisions of facilities; service delivery; and participation in learning.

Disaster events such as cyclones and floods can create great challenges for implementation of the national education policies as responsibility for ensuring primary education in the
Education in Emergency: Exploring options for continued education during disasters in Bangladesh

affected area often becomes overwhelming for the government during such events. Schools in the affected areas usually fail to bring in 5+ children in the schools or conducting teaching in a pleasant environment.

Disasters also cause damage to school infrastructure such as office building and classrooms; water supply and sanitation facilities; furniture and teaching materials; recreational items; playground; learning materials. The education service delivery can be hampered by the impact of disasters. Disasters can cause educational activities to suspend due to lack of classrooms or absence of the teachers; quality of the leaning sessions to deteriorate; decline in access to safe water and latrine and toilet facilities. Disasters also reduce children’s access to and participation in the educational activities.

The fourth chapter portrays vulnerability issues for education and resilient education. Poverty, marginalization and vulnerability to disasters are interrelated. They, collectively, as well as, individually, adversely affect people’s life expectancy, education, and income.

Relationships between poverty and exclusion from education in Bangladesh are widely acknowledged. Children from poorer families are less likely to go to school or perform well and more likely to drop out of school. There are about 5 million out of school children in 2012. They are out of school, either because they did not enrol in school or dropped out very early, mostly due to poverty.

Education service delivery mechanism is strongly biased against the marginalized groups and localities; and quality of education is awarded on the basis of gender, social class, ethnicity and degree of remoteness. Density of educational institutes in the hilly areas or underdeveloped districts is low. For example, Bandarban district, on average, has one primary school to cover 12.14 sq. km area, compare to the national average of one school in 1.9 sq. km (District Information).

In the cities, slum children suffer from shortages of accessible schools, especially at secondary level. For instance, slums in Dhaka have one primary school near the entrance of a slum for every 121 primary school-aged slum children and one secondary school for every 678 secondary school-aged slum children; whereas the national averages of enrolled students per institution are 215 for primary and 394 for secondary (World Bank 2012).

Disasters have severe and harmful impacts on children’s education. Natural hazards, such as cyclones, floods, flash floods and riverbank erosion, damage schools infrastructure and disrupts educational activities and displace children and their families. Children suffer from deprivations – e.g. reduction in their access to food, shelter, sanitation, medical care, protection and education.

This chapter also depicts that the emergency education has become an important element of the humanitarian assistance. During disaster, education can be seen to support some of the central goals of humanitarian assistance, fulfilling critical functions beyond learning.

Also, mainstreaming disaster risk reduction in the national education system is important. It firstly seeks minimizing disruptions in the educational activities during disaster, secondly, ensuring that educational institutes and activity schedule do not increase children’s risk to
disaster and, thirdly, help children as well their community gain better understanding of disaster and disaster risk reduction knowledge about disaster and disaster risk reduction and learn survival skill.

The chapter reflects that achieving disaster resilient education requires firstly, a combination of supports that ensure children overcome their emotional distresses, minimize physical pains, and protection against abuse, violence and exploitation.

**Chapter five** mainly points out towards the options for education risk management. It says that the children essentially require having physically, socially and emotionally safe environment for continuing their education which involves standardized provisions for school facilities; hazard specific water and sanitation facilities; child protection; changing room for children; and transportation facilities. An effective teaching method is another important aspect for continuing education that requires alternative method for lesson delivery; child friendly space; and temporary residential facilities for children. Also, teacher and education material and implementation and coordination are important issues for continuation of education.

This chapter also explains the policy implications to support and ensure continued education during disaster that requires developing common framework and specified guideline for EiE intervention; establishing outreach service for pre-primary and primary age group children; establishing link between livelihood and education sector interventions; making provisions for speedy reconstruction of school infrastructure and facilities; and strengthening policies and guidelines to help children with disability access education during disaster.

The chapter five reads the advocacy issues for education in emergency as well. The issues are to- define clearly the provision for continued education during disaster through a policy framework in the education sector; define clearly the roles of school teacher and SMC for conducting educational activities during disasters; plan for teachers’ DRR and EiE capacity building in the government training program; and define region and hazard specific appropriate infrastructure for schools in different hazard prone areas through MoE and MoPME Building Code;

In **chapter six** draws the conclusion of the report addressing severe and long term loss of education of children due to the impact of disasters.

It also reflects that schools not that are damaged by disaster are used as shelters, which further increases loss of education hours. In addition to that it reflects that the technologies and support provisions to help children make up for their educational losses are still missing. As a result the children themselves have to work hard to make up for the loss time.

The chapter suggests that it is fundamental that the national education policy provides guidance for continuing education during disaster. Institutions in both education and disaster management redefine their roles and enhance their capacities to help children access education perform satisfactorily despite the disaster.
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1. Introduction

1.1. Background

Bangladesh bordered on the west, north and east by India, on the south-east by Myanmar, and on the south by the Bay of Bengal. The majority of the country is low-lying and floodplains occupy around 80% of the country. Also, three very large river systems run through the country; moreover, geographically, it is located at the juncture of several active tectonic plate boundaries. It makes the country susceptible to cyclone, flood, flash flood, salinity intrusion, riverbank erosion and earthquake.

With 153.6 million people living in an area of 145,570 sq. km. (BBS, Population Census 2011) Bangladesh is one of the most densely populated countries in the world. Despite considerable economic and social change it still ranks low on a number of economic and development indicators which compounded with its geography and climate continue to make the country vulnerable to the impacts of natural hazards and climate change.

In spite of being categorized as one of the world’s most disaster prone and climate vulnerable countries, and particularly susceptible to recurring floods and cyclones, success stories have started to emerge. Namely the investments made by the Bangladesh Meteorological Department (BMD) in early warning systems that have allowed for a much greater coverage of surface and upper air observation equipment and the better coordination between departments, districts, NGOs and local communities when a cyclone or flood is likely to affect a particular region. In 1991, over 190,000 people were killed as a result of a cyclone but in 2007...
when a similar cyclone tore through the country just 4,234 were killed; thus demonstrating that Bangladesh has begun to develop a much more robust and sustainable path from which to prepare and respond to future climate and disaster related impacts.

Bangladesh is committed to universal primary education and conforms fully to the “Education for All (EFA)” objectives, the Millennium Development Goals (MDG). The article 17 of the Bangladesh Constitution provides that all children between the ages of six and eighteen years receive secondary education free of charge.

The country has made remarkable progress over the last twenty years in the enrolment of boys and girls into primary and secondary stages of education, reducing the dropout rates and making considerable headway on closing the gender gap. As the figures outlined by BANBEIS indicate, over 50% of girls are enrolled across both public and private institutions at the primary and secondary levels.
However, as the Child Equity Atlas Report indicates there are still a number of inequities that exist within the country. Firstly, early marriages still figures quite prominently across Bangladesh and have detrimental impacts on completion rates for girls of their secondary education. “Overall, unmarried young women achieve higher levels of education as compared to married young women. While about one in three unmarried young women are able to complete secondary and higher education, only one in seven married women are completing the same level of learning.” Secondly, large numbers of children still participate in labor force. Whilst the numbers have dropped dramatically over the years, children working in cities remain high, particularly in Dhaka where 1 in 6 children work. Thirdly, structural inequities exist regarding misuse of budget allocations, a lack of pro-poor policies, biases in the decision making process and weaknesses in accountability of institutions resulting in resource allocations favoring the non-poor, and socio-economic constraints contribute to continuing inequities across the educational system; fourthly, varied geographical locations have negative impacts on the completion rates of children attaining a full academic career; and finally, due to the lack of institutional experience and capacity, opportunities for children with special needs, children from ethnic minority communities and children vulnerable to disasters have not been created to the expected level.

The 2010 Child Education and Literacy Survey (CELS) published in 2012 found that out of the 3-14 years’ children, 118,575 children with special needs were enrolled in various types of schools. This produced an estimate that 59.4% children (boys 58.4% and girls 60.8%) were enrolled, out of a total of 197,159 children with disability of 3-14 years nationally. This compares favorably with an Annual School Census 2011 figure of 129,755 in GPS and RNGPS combined. Among special needs children enrolled in schools, CELS found that the rate for rural children (60.7%) was higher than for urban children (54.3%). Among the seven divisions Rajshahi had the highest proportion enrolled (63.4%) and Sylhet the lowest (51.9%).

1.2. Purpose

The purpose of the study is to explore options for minimizing disaster risks on education in Bangladesh while specific objectives of the study are-

- To identify impacts of common hazards on education;
- To identify options for continued education during disasters; and
- To identify issues for education cluster advocacy strategy.
1.3. Methodology

This study on education in emergency used case study method as a research strategy. The study will be an empirical inquiry that investigates a phenomenon within its real-life context. The subject of the inquiry will focus on specific hazards and their impacts on education in selected geographic locations. It will apply an analytical frame - within which the study will be conducted. The study includes the following steps.

1.3.1. Study Framework

The study looked into the disaster and climate change impact and uncertainty on education sector by reviewing relevant literature including Education Cluster documents, GoB education and disaster related policies and procedure. Field level case analysis of different hazards also provided the opportunity to assess the impacts of disaster on policy implementation; provision of facilities; service delivery; and participation in learning in education sectors. Based on the analysis some recommendations on safe and learning opportunities; effective teaching methods; teacher and education material; and implementation and coordination were generated.
1.3.2. Literature Review

Literature review constitutes analysis of accumulated information in the literature. It is suggested that data analysis should be completed for data collection. It had been the primary source of information for the study.

The literature for the data analysis had been collected from several sources which are as follows:

- Formally published books and published articles related to education and disaster risk.
- Unpublished papers, research reports, policy reports, government documents and policy papers, newsletter, paper clippings and other records related to education and disaster risk.
- Education Cluster different documents and reports of global level for setting the tone of continued education.

Government concerned ministries and their documents, literature, Bangladesh Institute of Development Studies (BIDS), NGOs working in this field and other research institutions and organizations had been contacted for locating literature. Relevant departments of the government were contacted too. The Education Cluster in Bangladesh had also helped the consultant.

1.3.3. Case School Selection

Study uses purposive sampling methods applying a set of criteria for case (school) selection. The selection criteria include disaster risk of the geographic region by hazard types and the district in the region and its upazila by the degree of impact of the most recent incidence of the hazard. Then, the most severely affected schools in the upazila are selected. Specific hazards are selected through consultation with the Education Cluster members in Bangladesh. The selected hazards are a) cyclone and storm surge, b) salinity, c) water logging, d) flash flood, e) landslide, f) riverbank erosion and g) earthquake. It did not consider flood, because, the Education Cluster already have done extensive studies on floods in Bangladesh. In reference to each of these selected hazards, the top at-risk districts and upazilas were selected. Applying severe education disruption in last disaster as the criteria, in each selected upazila’s one primary school, one secondary school and one madrasah has been selected.
1.3.4. Data Collection and Validation

Both primary and secondary data have been collected for the study. For secondary data collection, a literature review on each selected hazard had been done. Different issues of disruption and uncertainties created by disasters, including influence of climate change on disaster, have been identified and analyzed during the literature review. The literature review also provided an opportunity to develop primary data collection tools and methods for the conducting the study. For primary data collection, consultations have been conducted separately with the boys, girls, teachers and the School Management Committees (SMCs) in each selected school or madrasah for exploring their experiences in last disaster.

The consultation findings had been validated with the upazila level stakeholders through upazila level workshops. These workshops provided an opportunity to validate the information by both government and non-government stakeholders. Some key informant interviews with the district stakeholders had also been conducted. All the consultation helped create an opportunity to generate recommendations for the study.

1.3.5. Data Analysis and Study Report

The qualitative information provided basis for the in-depth understanding of the issues raised in the objective of the study. The field investigators and the associates took extensive notes during each of the interviews, discussions and consultations. For analyzing case data and constructing case studies the following three steps were followed: Step 1- Assembling the raw data; Step 2- Constructing case record based on study framework issues and Step 3- Writing a narrative case report for each of the different hazards.

Considering the objectives of the study, all endeavors had been made to capture the emic (insider’s) perspective of the study population and not on etic (outsider’s) views, which reflects perspectives of the researcher. So, the presentation of the report emphasized on what the education stakeholders can offer regarding Disaster Risk Reduction (DRR) and continued education. The report had been written as an analytical one supported by facts, various quotes and verbatim.

The analyzed information fed into the report provided a set of recommendations for continued education by focusing on three pillars; safe learning facilities, school disaster management and risk reduction and resilience education.
1.4. Scope and Limitations

The scope of the study allowed the team to look at some common hazards and their impacts on education service delivery at the local level. It provided opportunity to explore whether or how natural hazards cause uncertainties and disruptions to educational activities and hinder children’s access to education. Specifically, it is concerned about children’s education, therefore, concentrated on the primary and secondary levels only. As for the process, it included literature review – only the available secondary documents relating common hazards and their impacts on education; and consultation with the local level education service providers and children currently attending schools.

The study relied heavily on case study for exploration. It looked at only 21 institutions in 7 upazilas. Number of cases for study is small to understand variations in the dimension of individual hazard’s impacts in the varied geographic context of Bangladesh. Also, specific hazards were selected purposively. Field investigation looked at only seven natural hazards i.e. cyclone and storm surge, salinity, water logging, flash flood, landslide, riverbank erosion and earthquake. However, the study included information relating flood solely through relying on previous study report by the Education Cluster.

It should be noted that there were no incidence of severe earthquake in the country in recent times. Very little information about impact of earthquake on education is available in the literature. The investigation was conducted in potentially most vulnerable area instead of actually affected area. As community and children did not have any experience of earthquake, consultations contributed very little in the analysis.

Also, the field investigation was constrained because of the political unrest during the end of year 2013, as well, the public exams conducted in January and February 2014.
2. Education System and Hazards in Bangladesh

2.1. Education System in Bangladesh

2.1.1. Legislation and Policy

Bangladesh fully conforms to the Education for All (EFA) objectives, the Millennium Development Goals (MDG). It is also committed to universal primary education. The article 17 of the Bangladesh Constitution specifies that the State shall adopt effective measures for the purpose of: a) establishing a uniform, mass-oriented and universal system of education and extending free and compulsory education to all children to such a stage as may be determined by; b) relating education to all children to such a stage as may be determined by law; and c) removing illiteracy within such time as may be determined by law. The EFA goals adopted in the World Conference on Education for All (WCEFA) in March 1990 were quite in line with Bangladesh aspirations and the Universal Primary Education (UPE) program and a Mass Education Program (MEP) that it had introduced earlier in 1981. Following the WCEFA it enacted the Compulsory Primary Education Act, 1990; and initiated Primary Education Development Program (PEDP) that focused on improving enrolment, completion, quality inputs and monitoring. Subsequently, it implemented PEDP II - a six-year program beginning in the year 2000 that coordinated and integrated subsector program within the DPE with a focus on quality improvement, institutional capacity building, and systemic reform; and launched PEDP III that continues the quality improvement, institutional and systemic reforms introduced under PEDP-II focusing on improving learning outcomes in the classroom. Recently the country had enacted an education policy in 2010 to maintaining its commitment to the education sector in order to achieve Education for All (EFA) and the Millennium Development Goals (MDGs).

2.1.2. Structure of the Education System in Bangladesh

The education structure of Bangladesh consists of a formal sub-system and a non-formal sub-system. Formal education is defined as “the institutionalized, hierarchically structured,
chronologically graded education system starting from primary to post-primary levels of education” (BANBEIS, 1999).

Formal system has three stream Formal system is divided into three levels: i) one pre-primary (4-5 years age range ) and primary (6-10 years) grade I to V (according to the current National Education Policy, to be extended to grade VII, ii) secondary grade VI to XII (11-17 years) and iii) tertiary Bachelor’s Degree and Master’s Degree (17+ years).

As for the Curricula and delivery, the formal system applies three streams - firstly, general education, inclusive of pure and applied science, arts, business and social science and offers both English and Bangla versions; secondly, madrasah education that focuses on the ideals and doctrines of Islam as well have similar core courses as in the general education; and thirdly, technical-vocational and professional education that starts at secondary level and includes agriculture, engineering, medical, textile, leather technology and ICT.

Also, there are Sanskrit and Pali tols that offer religious education Sanatans and Buddhists, respectively; Christian religious education is offered in bible schools, seminaries and theological colleges managed by Church bodies of different denominations.

The non-formal system - defined as “any organized educational activity outside the established formal system that is intended for specific objectives and to serve an identifiable clientele” (BANBEIS, 1999), also has three streams. Firstly, adult education that aims to offer illiterate people above the age of 15 year minimum skills in reading, writing and numeracy. Secondly non-formal education which is a complementary stream to the formal primary education that provides some basic education to those children who cannot be in the schools till 100% enrolment is ensured at the primary level or dropout of primary education. Thirdly, there are Qawmi Madrasahs that concentrate on Islamic theology and that apply subject-based system rather than a grade-based system. They represent a private system of madrasah education; and have very little connection with the national education system.

Education services at pre-primary and primary for general education are provided through government primary school (the government manage and covers all costs), registered non-government primary school (the government provides teachers’ salaries only), non-government primary school and pre-primary school, PTI attached experimental school, high school attached primary schools, and private kindergartens. Secondary schools are government schools; registered non-government schools where teachers’ salaries are paid by the government, but all other costs are the responsibility of the school committee, and
private sector that operate on commercial basis. Technical and vocational institutions are managed by the government or by private sector. Madrasah education is provided through Alia Madrasahs which receive financial assistance from the government.

For tertiary level education there are 73 universities in Bangladesh. Out of these, 21 universities are in the public sector, while the other 52 are in the private sector. Out of 21 public sector universities, 19 universities provide regular classroom instruction facilities and services. Bangladesh Open University (BOU) conducts non-campus distance education programmes especially in the field of teacher education and offers Bachelor of Education (B.Ed.) and Master of Education (M.Ed.) degrees. BOU conducts 18 formal courses and 19 non-formal courses. Bangladesh National University mainly functions as an affiliating university for degree and post-graduate degree level education at different colleges and institutions in different field of studies. But in case of fine arts this university also offers Pre-Degree BFA Course (which is equivalent to HSC). After successful completion of the specified courses, it conducts final examinations and awards degree, diplomas and certificates to the successful candidates. The degrees are B.A., B.S.S., B.Sc., B.Com. (Pass and Honours) BFA (Pass), M.A., M.Sc., M.S.S, M.Com. and MFA. Moreover, this university also offers L.L.B., and other degrees. Bangladesh National University offers part-time training to university teachers. The University Grants Commission (UGC) is responsible for co-ordinating activities of the universities and distributing government grants to them.

There is only one medical university namely, "Bangabandhu Sheikh Mujib Medical University", like other public universities, offers courses on a different system where FCPS Degree is offered in the disciplines of medical education; diploma courses are offered in 12 disciplines. MD degree in 15 subjects and MS courses on 8 subjects are also offered.

A vast number of schools in Bangladesh are English Medium schools. English Medium schools are mainly private schools where all the courses are taught in English except one Bengali Language subject at ordinary level (O Level). These schools in Bangladesh follow the General Certificate of Education (GCE) syllabus where students are prepared for taking their Ordinary Level (O Level) and Advanced Level (A Level) examinations. The General Certificate of Education system is one of the most internationally recognized qualifications, based from the United Kingdom. The Ordinary and Advanced Level examinations are English equivalent to the Secondary School Certificate (SSC) and Higher Secondary School Certificate (HSC) examinations respectively. Most students sit for these exams from the
registered schools in Bangladesh who follow the GCE syllabus. Those who do not attend a school that follows the GCE syllabus may also sit for their Ordinary and Advanced Level examinations from British Council. These examinations are conducted under the supervision of British Council in Bangladesh. The GCE examination conducted by the British Council takes place twice a year. Currently there are two boards operating from Bangladesh for Ordinary and Advanced Level Examinations, which are Edexcel and University of Cambridge International Examinations.

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<td>24+</td>
<td>XIX</td>
<td></td>
<td>Master (Pass)</td>
</tr>
<tr>
<td>23+</td>
<td>XVIII</td>
<td></td>
<td>Bachelor (Hons)</td>
</tr>
<tr>
<td>22+</td>
<td>XVII</td>
<td>Secondary</td>
<td>MBBS, Bachelor (Engr, Agri, Edu, Nursing)</td>
</tr>
<tr>
<td>21+</td>
<td>XVI</td>
<td></td>
<td>Diploma (Engr, Agri, nursing)</td>
</tr>
<tr>
<td>20+</td>
<td>XV</td>
<td></td>
<td>Pre-Degree, BFA</td>
</tr>
<tr>
<td>19+</td>
<td>XIV</td>
<td></td>
<td>Certificate Courses, TRADE, ARTISAN COURSE e.g. CERAMICS</td>
</tr>
<tr>
<td>18+</td>
<td>XIII</td>
<td></td>
<td>Alim</td>
</tr>
<tr>
<td>17+</td>
<td>XII</td>
<td></td>
<td>Dakhil</td>
</tr>
<tr>
<td>16+</td>
<td>XI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15+</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14+</td>
<td>IX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13+</td>
<td>VIII</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12+</td>
<td>VII</td>
<td>Primary</td>
<td></td>
</tr>
<tr>
<td>11+</td>
<td>VI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10+</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9+</td>
<td>IV</td>
<td></td>
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<tr>
<td>8+</td>
<td>III</td>
<td></td>
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<tr>
<td>7+</td>
<td>II</td>
<td></td>
<td></td>
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<tr>
<td>6+</td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5+</td>
<td></td>
<td>pre</td>
<td></td>
</tr>
<tr>
<td>4+</td>
<td></td>
<td>Pre-primary</td>
<td></td>
</tr>
<tr>
<td>3+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from Bangladesh Bureau of Educational Information and Statistics

2.1.3. Management of Primary and Secondary Education

**Management Bodies**

The Bangladesh educational system is primarily managed by the following institutions: the Ministry of Education (MoE); the Ministry of Primary and Mass Education (MoPME), the Directorate of Primary Education (DPE); the Directorate of Secondary and Higher Education; the Directorate of Technical Education; the Directorate of Inspection and Audit; the National Curriculum and Textbook Board; the Boards of Intermediate and Secondary Education; the Madrasah Education Board; the Technical Education Board; the National Academy for Primary Education (NAPE); the National Academy for Educational
Management; the Bangladesh Bureau of Educational Information and Statistics; the Bangladesh Education Engineering Department (BEED); and the University Grants Commission.

The MoE oversees the formulation, planning, monitoring, evaluation and execution of programs for secondary and higher education streams, including the technical madrasah streams of education and is the principle policy-making body.

The MoPME is responsible for policy formulation, planning, evaluation and execution of plans and initiating legislative measures related to primary and non-formal education as well as mass education. Mass education in Bangladesh refers to non-formal education for out-of-school children, youth, and adults in basic literacy, simple numeracy and life skills (UNESCO, 2011).

The NAPE is responsible for conducting training and research in the field of primary education.

The National Curriculum and Textbook Board (NCTB) is an independently run organization under the MoE and is responsible for the management and development of the curriculum as well as the production and distribution of textbooks for primary, secondary and high secondary levels.

- The collection, dissemination, documentation and publishing of educational information.
- Conducting National Education Survey (NES), Sample Education Survey (SES) of Post-Primary Education (PPE).
- Performing different research on education.
- Providing educational information to the stakeholders, researcher of national and international, or the national and international organizations.
- To maintain a library enriched with national and international journals, periodicals, encyclopedia and research papers.
- Establishment and maintenance of a database on educational institutes and its teachers, and GIS school mapping.
- Training center with the help of Bangladesh-Korea ICT Training Center for Education (BKITCE), it helps to develop human resources by giving training on ICT.
Number of Schools, Students and Teachers

According to the Bureau of Education Information and Statistics (BANBEIS), there are 113,823 primary and post-primary education institutions across Bangladesh. Within this category there are: 78,685 primary institutions, 19,070 school level institutions, 3,475 college level institutions, 9,330 madrasah institutions, 282 professional institutions, and 2,981 technical-vocational education institutions. It means on average there are one primary school in every 1.9 sq. km; one secondary school in every 7.7 sq. km; and one government registered madrasah in every 15.8 sq. km.

There are a total of 849,304 teachers of which just over 41% teach at the primary level across both private and public institutions. 49.2% of the teachers at the primary level are women. In 2011, just over 30 million children were enrolled within the formal education system. While the majority attends public institutions at the primary school level, with 9,904,254 attending public schools and 7,053,640 attending private schools; there is a substantial shift at the school education level (grade VI-X) where just 228,242 attend public institutions and 7,281,976 attend private institutions.

<table>
<thead>
<tr>
<th>Type of Education</th>
<th>No. of Institution</th>
<th>No. of Teacher</th>
<th>No. of Student</th>
<th>Teacher-Student Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Education (Grade I-V)</td>
<td>78,685</td>
<td>395,281</td>
<td>16,957,894</td>
<td>1:43</td>
</tr>
<tr>
<td>School Education (Grade VI-X)</td>
<td>19,070</td>
<td>223,555</td>
<td>7,510,218</td>
<td>1:34</td>
</tr>
<tr>
<td>College Education (Grade XI-XII)</td>
<td>3,475</td>
<td>95,620</td>
<td>2,915,851</td>
<td>1:30</td>
</tr>
<tr>
<td>Madrasah Education</td>
<td>9,330</td>
<td>107,177</td>
<td>2,197,877</td>
<td>1:21</td>
</tr>
<tr>
<td>Professional</td>
<td>282</td>
<td>4,752</td>
<td>70,998</td>
<td>1:15</td>
</tr>
<tr>
<td>Technical-vocational</td>
<td>2,981</td>
<td>22,919</td>
<td>506,556</td>
<td>1:27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>113,823</strong></td>
<td><strong>849,304</strong></td>
<td><strong>30,159,394</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: BANBEIS, 2011

Efforts to increase the number of girls attending schools across Bangladesh by the government is clearly reflected in the statistics collated by BANBEIS with just over 50% of girls attending school at the primary and post-primary levels, however, their attendance to universities still falls short at just a 29.98% attendance rate. Surprisingly this number drops to 10.26% across the madrasahs.

According to BANBEIS, the net enrolment rate for primary school students (grade 1-5) was 94.89% (a total of 15,751,788 children) and the average dropout rate was 45.1% (2010). In 2010, a total of 83,023 children with special needs were enrolled in school, of which 47,029 were boys and 35,994 girls.

School Year

In Bangladesh the academic school year runs from January to December. On average, the school year consists of 37 (six-day) weeks (UNESCO, 2011). Schools operate from Saturday-Thursday and are given Friday off as a religious day of observance for the Muslim population. The available research has not yet been able to accurately capture the actual days of operation of schools. But it is estimated that almost 20% of the school year is allocated to administrative activities (receiving and distributing materials, registration of incoming students, etc.) and during the 3 month monsoon season schools are often closed for a substantial portion of that time (UNESCO, 2011). A study by the Creative Associates International (2004) estimated that best case schools routinely lost 45 days of its scheduled school days whilst worst case schools lost up to 130 days, over 50% of their scheduled days due to administrative burdens and disasters. Lastly, there are a number of national holidays throughout the year such as Eid Ul Fitr, Eid Ul Azha, Durga Puja, and Christmas that punctuate the academic school year.

2.2. Common Hazards in Bangladesh

2.2.1. Cyclone and Storm Surge

Bangladesh is vulnerable especially to cyclones due to its location along the Bay of Bengal, its sea-level geography, its high population density and lack of coastal protection systems (WHO, 2011). Cyclones typically hit the coastal regions of Bangladesh during the pre-monsoon (April-May) and post-monsoon (October-November) seasons. “About 40% of the total global storm surges are recorded in Bangladesh and the deadliest cyclones in the past 50 years, in terms of deaths and casualties, are those that have struck Bangladesh.” (WHO, 2011). The number and severity of cyclones over the last 50 years however, has dropped dramatically with a recorded 4,234 deaths during the most recent cyclone in 2007 as compared to over half a million deaths in 1970, a 100-fold reduction. This is in large part due to the concerted effort by the government to modernize their early warning systems and disaster preparedness plans and raise awareness both at the national and local levels. Cyclones take an enormous toll in lives and personal property. Strong winds damage or destroy vehicles, buildings, bridges, personal property and other outside objects, turning loose debris into deadly flying projectiles. The wet environment in the aftermath of a tropical cyclone, combined with the destruction of sanitation facilities and a warm tropical climate, can induce epidemics of disease which claim lives long after the storm passes. It also
creates a great deal of difficulties for the education service delivery causing severe damage to the infrastructure, teaching and learning materials and the basic facilities as well as disrupting the learning environment, communication services. It also creates trauma and emotional distress for the children that affect the education service delivery.

2.2.2. Floods

Flooding is a yearly occurrence in Bangladesh and was widely yearned-for in the past for the creation of fertile lands for rice crops. However, floods are now violent, random, and more frequent and have had deleterious impacts on people’s lives and livelihoods. Floods primarily occur during the monsoon season between June-July and September-October and affect a considerably large volume of landmass across the country. As two-thirds of the country is just 5 meters above sea level and consists mostly of flood plains this is unsurprising (Renton, 2013). In addition to the visible impacts on livelihoods, the education sector is also affected. Damages to infrastructure and roads create a challenging operating environment for children, teachers and families. Furthermore, school materials are often lost and those schools that are not affected tend to be transformed into shelters for the affected community. And lastly, security is often a factor as the environment to reach the schools is rendered unsafe.
Floods are annual phenomena with the most severe occurring during the months of July and August. Regular river floods affect 20% of the country increasing up to 68% in extreme years. The floods of 1988, 1998 and 2004 were particularly catastrophic, resulting in large-scale destruction and loss of lives. In 2004, floods inundated about 38% of the country (WARPO, 2005). About 747 people lost their lives. About 2500 kilometers of embankment were damaged. About 74 primary school buildings were washed away. This flood caused economic loss of about US$ 2200 million.


### Impacts of Flood on Education

<table>
<thead>
<tr>
<th>Impacts on policy and procedure</th>
<th>Impacts on facilities and materials</th>
<th>Impacts on services and delivery</th>
<th>Impacts on access and participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of schools as shelter; School repair and reconstruction;</td>
<td>Damage to classroom, water supply system, sanitation facilities, furniture and equipment/teaching learning materials;</td>
<td>Classroom activities and learning sessions are suspended; Water supply and sanitation service become non-functioning; Recreational activities are unobtainable;</td>
<td>Attendance rates diminish due to • Displacement, • Emotional and physical distress, • Loss of learning materials, • Unavailability of sanitation service, • Inundated/damaged roads, • Low attendance of teacher Dropout rate increases due to • Migration, • Displacement, • Participation in child labour,</td>
</tr>
</tbody>
</table>

2.2.3. **Flash Floods**

Flash floods happen when heavy and excessive rainfall occurs within a small area. It has typically been difficult to give advance warning before the onset of a flash flood due to the very short timeframe within which it occurs. “Typically, flash floods occur in areas where the upstream basin topography is relatively steep and the concentration time of the basin is relatively short. In Bangladesh flash floods generally occurs in the north-east, south-east and Chittagong region” (Bangladesh Water Development Board). In the north-east region of Bangladesh- alternatively known as the “Haor” region, flash floods tend to occur between the middle of April to the end of April, however, communities have noticed that this too has shifted over the last couple of years and is starting much earlier within the month. Although flash flood is commonly referred have adverse impact on the communication system as it directly affects the roads and other transport systems, it also affects the education delivery system by damaging the infrastructure, e.g. class rooms, latrines, tube-well, playgrounds, teaching and learning materials and creating disruption to the communication services. Flash flood usually affects the access road and cause significant reduction in the accessibility. It also has an adverse impact on the learning environment as the basic amenities like safe water, latrine facilities and options for recreational activities are seriously hampered by flash floods.
About 662,726 metric ton crops have been swamped only in Sunamganj district, which is 3.5% of national boro production (2.3% of total national rice production) and cost estimated BDT 11 billion (11,266,335,880). 61% (117,475 hectares) cropland inundated. Total affected farmers 143,008 (out of 207,310) only in Sunamganj district.

Source: In-depth Assessment Report: Early Flash Flood in Haor Area, 2010, Oxfam

<table>
<thead>
<tr>
<th>Impacts of Flash Flood on Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacts on policy and procedure</td>
</tr>
<tr>
<td>School repair and reconstruction;</td>
</tr>
<tr>
<td>Timely completion of curriculum and exam schedule;</td>
</tr>
</tbody>
</table>

2.2.4. Earthquakes

Bangladesh is geographically located on a seismically active region and highly vulnerable to earthquakes. Its northern and eastern regions in particular are known for experiencing earthquakes that surpass 5 on the Richter Scale; and cities such as Dhaka, Chittagong and Sylhet are particularly vulnerable as a result of rapid urbanization, poor planning, high population density, and innumerable high rises and buildings that are yet to meet National Building Codes (IRIN, ICIMOD). Earthquakes are anticipated to have potentials to bring upon disasters of significant magnitude. It is likely that earthquake occurrence in the urban areas of Bangladesh will result in unimaginable human casualty and infrastructural damage. Naturally, along with other services the education system will also collapse. Retro-fitting of existing hospital buildings has already begun across the major three cities under a WHO programme but other buildings such as schools and major infrastructure have not yet been upgraded and are likely to be completely destroyed in the event of a major earthquake.

For the worst case scenario about 270,604 buildings will be at least moderately damaged and 238,164 buildings will be damaged beyond repair in Dhaka City Corporation area. It is estimated 748 potable water facilities, 7 gas compressor stations, and 54,815 electrical power facilities will be at least moderately damaged in Dhaka. For the utility network, there will be around 1,016 leak and break of potable water pipeline and 684 leak and break of natural gas pipeline in Dhaka. On the day of the earthquake with the worst case scenario, only 7,441 hospital beds (12%) will be available. In the worst case scenario, estimated total building-related economic loss would be 15,603 million of dollars in Dhaka City. While for the lifeline, the loss is 364 million of dollars in Dhaka.

Source: Earthquake Risk Assessment of Dhaka, Chittagong and Sylhet City Corporation Areas, 2009, CDMP
Due to heavy rainfall during 10 -11 June 2007, landslides and collapsed walls caused widespread damages in six areas of Chittagong city and in different upazilas of the district. More than 120 people have been reported dead due to Chittagong landslide.

**Source:** http://www.ddm.gov.bd/landslide.php

### 2.2.5. Landslide

Intense and prolonged rainfall, flash floods, monsoon, land degradation and human interference are all factors in triggering landslides. These tend to occur in the north-east and south-east regions of the country, but in particular the Chittagong region has been highly susceptible to landslides. As a result of landslides, we typically see damage to infrastructure, assets and livelihoods and casualties. Landslides can happen all year round but spike from April to September (South Asia Disaster Report, 2007). It can also affect the education sector moderately by destroying school buildings and other relevant infrastructures such as access roads, playgrounds, tube-wells and latrine facilities.

#### Impacts of Landslide on Education

<table>
<thead>
<tr>
<th>Impacts on policy and procedure</th>
<th>Impacts on facilities and materials</th>
<th>Impacts on services and delivery</th>
<th>Impacts on access and participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>School repair and reconstruction;</td>
<td>Loss of classroom, water supply system, sanitation facilities, furniture and equipment;</td>
<td>Classroom activities and learning sessions are suspended; Water supply and sanitation service become non-functioning;</td>
<td>Attendance rates diminish due to • Displacement; • Death and injury; • Emotional and physical distress; • Loss of learning materials; • Unavailability of sanitation service; • Damaged roads; Dropout rate increases due to • Migration; • Death and injury; • No education service; • Participation in child labour;</td>
</tr>
</tbody>
</table>

*Based on the worst case scenario projected in *Earthquake Risk Assessment of Dhaka, Chittagong and Sylhet City Corporation Areas, 2009, CDMP*
2.2.6. Riverbank Erosion

Simply put, riverbank erosion essentially refers to the breaking down of riverbanks or carrying away of riverbeds as a result of heavy rainfall. The major rivers within Bangladesh are the Ganges, Brahmaputra, Meghna, Padma and Jamuna, and they often experience flooding which can in turn lead to hundreds of kilometers of erosion along their banks. This can occur all year round but typically happens across the monsoon period. The impact of riverbank erosion on education can be highly localised but can result in complete collapse in the catchment areas of the affected schools. The potential to destroy school buildings and other relevant infrastructures such as access roads, playgrounds, tube-wells and latrine facilities. It also results in loss of asset and dwelling areas of the local families that send their children to schools.

<table>
<thead>
<tr>
<th>Impacts on Riverbank Erosion on Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacts on policy and procedure</td>
</tr>
</tbody>
</table>
| School repair and reconstruction; | Loss of classroom, water supply system and sanitation facilities, | Classroom activities and learning sessions are suspended; Water supply and sanitation service become non-functioning; | Attendance rates diminish due to:
| | | | • Displacement,
| | | | • Shifting of the school,
| | | | • Unavailability of water and sanitation services,
| | | | • Damaged roads,
| | | | Dropout rate increases due to:
| | | | • Migration,
| | | | • Displacement
| | | | • Distance of the school,
| | | | • Participation in child labour,

2.2.7. Salinity Intrusion

Salinity intrusion has become an increasing problem across the coastal areas of Bangladesh. The coastal zones are under constant threat of saline intrusion and are having a serious impact on quality of crop production and reduction of agricultural yields. Techniques such as the selection of salinity tolerant crops have already been introduced as an adaptive measure but with trends indicating that saline intrusion will continue over the coming years it is important that further adaptive measures be taken into account. Salinity mainly affects the water and sanitation facilities in the schools and creates moderate crisis for availing safe water. It also has long-term impact on the infrastructures and facilities—school buildings, furniture, teaching and learning materials etc.
According to salinity survey findings, about 1.02 million hectare (about 70%) of the cultivated lands are affected by varying degrees of soil salinity. About 0.282, 0.297, 0.191, 0.450 and 0.087 million hectares of lands are affected by very slight, slight, moderate, strong and very strong salinity respectively.

*Source: Report on Salinity Problems and Crop Production in Coastal Regions of Bangladesh, Department of Soil Science, Bangladesh Agricultural University, Mymensingh, Bangladesh*

### Impacts of Salinity Intrusion on Education

<table>
<thead>
<tr>
<th>Impacts on policy and procedure</th>
<th>Impacts on facilities and materials</th>
<th>Impacts on services and delivery</th>
<th>Impacts on access and participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timely completion of curriculum and exam schedule; School repair and reconstruction;</td>
<td>Decay of furniture and equipment; Damage to school building, Water supply system and sanitation facilities;</td>
<td>Water supply and sanitation service become non-functioning; Recreational activities are unobtainable;</td>
<td>Attendance rates diminish due to: • Unavailability of water and sanitation services, • Participation in child labour,</td>
</tr>
</tbody>
</table>

#### 2.2.8. Water Logging

Water logging occurs as a result of the accumulation of waters from heavy rains that have not yet receded or properly been drained. In some cases, this chronic form of flooding can take place over many years, interrupting agricultural yields and schooling. This is particularly in acute in the south-western regions of Bangladesh where schools are closed on a yearly basis. In a report by the UN Child’s Fund (UNICEF) “nearly a quarter of the schools in Tala upazila, the most flood and water logging vulnerable area of Satkhira district, have been affected by water logging so far” in 2013. When this happens there tends to be a 50% decrease in attendance to schools. Activities of introducing disaster risk reduction into schools and building disaster resilient schools have slowly begun in recent years and will offer children with the set of capacities and safe space they require to continue their education despite the onset of these pervasive hazards.

### Impacts of Water Logging on Education

<table>
<thead>
<tr>
<th>Impacts on policy and procedure</th>
<th>Impacts on facilities and materials</th>
<th>Impacts on services and delivery</th>
<th>Impacts on access and participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timely completion of curriculum and exam schedule; School repair and reconstruction;</td>
<td>Damage to classroom, water supply system, sanitation facilities, furniture and equipment;</td>
<td>Water supply and sanitation service become non-functioning; Recreational activities are unobtainable; Limit scope of class room conduction</td>
<td>Attendance rates diminish due to: • Displacement, • Loss of learning materials, • Unavailability of sanitation service, • Inundated roads, Dropout rate increases due to: • Migration, • Displacement, • Participation in child labour,</td>
</tr>
</tbody>
</table>
3. Impact of Disasters on Education

3.1. Policy Implementation

The Constitution makes it mandatory for the State to ensure basic education for all. Education is perceived to be pro-people, easily available, uniform, universal, well planned, science oriented and of high standard according to the constitutional directives. To discharge its duty, the State is solely responsible for the management of primary education, in particular. The education policy works as a basis for education system to deliver the service.

The national education policy aims for a one-year pre-primary schooling for 5+ children and conducting teaching “in a pleasant environment characterized by love and care in appreciation of children’s spontaneous vigor, spirit and their natural inquisitive faculties and curiosity.” The policy pursue for equal opportunities “to ensure access of all sections of children to primary education irrespective of ethnicity, socio-economic conditions, physical or mental challenges and geographical differences.” Also, the policy seeks to address “the existing discriminations among schools in regard to facilities, infrastructure constraints, lack of adequate number of teachers and the weaknesses in training.” A major focus of the policy is equal opportunities “for all kinds of disabled and underprivileged children.” Furthermore, the policy seeks “a terminal examination with identical set of questions” on the completion of Class V; and a public examination – known as Junior School Certificate Examination – on the completion of Class VIII.

Disastrous hazards, in particular, cyclones and floods, destroy infrastructure and displace people. Children's normal life becomes disrupted. They may suffer from fear, anxiety and trauma. Children often become unable to take part in educational activities because they are emotionally distressed or their families have temporarily migrated or school buildings have collapsed. During such events implementation of the national education policy becomes very challenging. For example –

- Responsibility for ensuring primary education in the affected area becomes overwhelming for the government; to restore and continue educational activities the government often has to involve humanitarian agencies.
Schools in the disaster affected areas fail to bring in 5+ children in the schools or conducting teaching in a pleasant environment; it is largely due to damage of school infrastructure, breach of access road or displacement of the affected families.

Ensuring primary education for all children in the affected becomes challenging because many families temporarily migrate other places or children from many affected families participate in income earning activities.

Disastrous hazards cause damage to school infrastructure and it increases the existing discriminations among schools in regard to facilities.

Schools in disaster affected areas, because of damaged classrooms and facilities, fail to ensure children with disability access to education.

Children from disaster affected areas may not be able to complete curriculum with the academic year; therefore, conducting public examinations on the completion of Class V and Class VIII becomes problematic.

After an earthquake continuation of any educational activities would be highly unlikely and challenging as it may cause severe damages to the infrastructures as well as creates disruption to the service especially in the urban areas. It is anticipated that after a severe earthquake there would be other priority issues- such as rescue and saving lives that need to be dealt rather than continuation of education. Concerns for education would be restoration of disrupted education activities that includes reconstruction of infrastructure, deployment of teachers and curriculum and service delivery system.

### 3.2. Provisions of Facilities

School facilities are important tools in the teaching and learning process. These facilities are essential for delivering educational services. Facilities enable teacher conduct learning sessions well and help children learn effectively. There different types of schools facilities; for example, instructional facilities, recreational facilities and water and sanitation facilities. Instructional facilities are specifically meant for direct teaching and learning. It includes classrooms, classroom seats, laboratories, libraries, experimental equipment, chalkboard and audio-visual learning equipment. These facilities are priority among other school facilities because they bear...
directly on the teaching and learning process. Recreational facilities include spaces, playgrounds, and equipment for sports, games and general recreation. It helps developing specific skills and social and mental environment for good learning. Water and sanitation facilities include tube-wells, water supply points and toilets. These are essential for the convenience of children and teachers.

Although the impacts of different natural hazards vary, disasters damage school infrastructure and furniture and teaching and learning materials. Since the cyclone of 1970, an estimated average of 900 education institutions are completely damaged each year by cyclone, flood and river erosion (Alam K., 2010). During the period of 1971 to 2007, a number of 17036 schools were fully and 105341 schools were partially damaged by flood while 16,025 schools were damaged fully and 34,225 schools were partially damaged due to cyclones during the period of 1971 to 2007\(^2\). Damage and destruction in education sector during disaster include –

- Damage of office building and classrooms of the schools;
- Damage of water supply and sanitation facilities in the schools;

\(^2\) Strengthening Preparedness and Response Capacity in Flood and Cyclone Prone Areas in Bangladesh, Save the Children, Plan international and UNICEF, 2010
• Damage or loss furniture (e.g. chair, table and bench) and teaching materials (e.g. chalkboards, charts, computers and overhead projectors);
• Damage or loss of recreational items (e.g. footballs, cricket bats, nets and carom boards);
• Inundation of playground in the schools;
• Loss of children’s learning materials (e.g. text books, notebooks, pens and pencils).

3.3. Service Delivery

Education services are commonly defined by reference to four categories: Primary Education Services; Secondary Education Services; Higher (Tertiary) Education Services; and Adult Education. These categories are based on the traditional structure of the sector; however, changes are taking place in the area of Higher Education. The national education policy elaborated it further; it include pre-primary and vocational education before and after the primary level, respectively; also a parallel Madrasah Education. Although the State is the main provider of primary education in Bangladesh, communities, NGOs and private sector agencies are actively involved in providing education services. They deliver it through schools, madrasahs and other institutions. Qualities of the services vary depending on the location and the nature of the agencies managing the institutes. Nevertheless, disasters nearly always adversely affect the quality of the services.

As noted earlier, disasters cause damage to infrastructure, loss of teaching and learning materials and emotional distress of the children and teachers. It hampers educational activities and other services in the schools too. According to Alam K. (2010) roughly, 50-60% teaching materials were destroyed by the disasters in 2007 and 2009 and at least 19% schools in both flood and cyclone areas combined experienced more than 4 weeks of school closure in 2007. Some of the impacts of disasters on education service delivery can be listed as -

In 2013, Nawapara High School in Tetolia union under Tala upazila has been affected by water logging. During the period of water logging education activities were conducted with modified routine- class 6, 7, 8 attended school three days a week while class 9 and 10 attended other 3 days. Also, number of classes per day was reduced to 4 instead of 6 due to inadequate WASH facilities and damaged latrines. During the class hours the students had to sit on the high benches as the class room floors were inundated. With exception of 1 female teacher, all other teachers were able to come and conduct educational activities throughout the water logging.

Source: Group Discussion with SMC Members and Teachers, Nawapara High School, Tala, Satkhira, February 2014.
- Educational activities may be suspended due to lack of classrooms or absence of the teachers;
- Quality of the learning sessions may deteriorate because of the teaching and learning materials or emotional distress of the children and teachers;
- Children and teachers may not have access to safe water while they are in the schools;
- Latrines and toilets of the schools may not function because of the structural damage;
- Children may not be able to take part in recreational activities because of the loss of play items or inundation of the playground.
- In case of earthquake, the education service delivery system may collapse, because of the huge infrastructural damage and human casualty as well, the resulting shock and trauma.

3.4. Participation in Learning

Government, registered non-government, community, private, and non-formal schools, as well as madrasahs, comprise the schooling options at the primary level as well as at other levels. There have been significant improvements in enrolment in primary schools during the last two decades although there are concerns about the rates of retention. Generally, children access to education and participation learning activities, to large extent, depend on cost of education relative to the families’ incomes, distance between the schools and children’s place of dwelling, concerns for child protection, degree of the families’ dependency on child labor and quality of teaching and educational activities in the schools. Disasters, generally, intensify the elements that adversely affect children’s access to education.

In 2013, Anantapur Government Primary School in Fatehpur union under Biswamhbarpur upazila has been affected by flash flood. School access road was completely inundated flood water with strong current. During this period there was severe crisis for safe transportation (boats) to school for both teachers and students. Students either had to swim against the strong current or to wait long time for attending school. Also there had been number of boat capsize incidents occurred during the flash flood. On average more than half of the students and about two out of four teachers were not able to come to school during that period.

Source: Group Discussion with Girls Student, Anantapur Govt. Primary School, Biswamhbarpur, Sunamganj, February 2014.
In particular, disasters reduce children’s access to and participation in the educational activities through:

- Suspended learning sessions or poorly conducted classroom activities;
- Losses of education materials that discourage children to go to their schools;
- Injuries and emotional distresses that bar children from taking part in educational activities;
- Damaged infrastructure that compromises children’s safety and protection;
- Lack of water supply and non-functioning sanitation facility causing inconvenience for the children – girls in particular, while stay in their schools;
- Damaged roads impeding children’s access to their schools;
- Displacement or temporary migration of their families that increase distance between children’s homes and their schools;
- Involvement in income earning activities that allow the children very little time for educational activities.
4. Vulnerability Issues and Resilient Education

4.1. Vulnerability Issues for Education

Poverty, marginalization and vulnerability to disasters are interrelated. They, collectively, as well as, individually, adversely affect people’s life expectancy, education, and income.

**Poverty** - Relationships between poverty and exclusion from education in Bangladesh are widely acknowledged. This exclusion takes effect in different ways. Poor families are less able to bear the direct costs of education as well the opportunity costs. Children from poorer families are less likely to go to school or perform well and more likely to dropout of school. There are about 5 million out of school children in 2012. They are out of school, either because they did not enroll in school or dropped out very early, mostly due to poverty. Children coming from the poorest 20 percent of families are 12 percent more likely to be out of school compared to the richest 20 percent (World Bank, 2013). Essentially, poverty leads to demand-side failure. Large numbers of children from poor households are engaged in different types of work and struggling for survival. It inhibits children accessing education, especially in the secondary level (Planning Commission, GoB 2012).

The national planners are well aware of this issue. To minimize impacts of poverty on education they have included significant elements in the Education For All programs. For example, they have planned for free supply of text books all children going to primary schools; food-for-education which later became cash-for-education poor families enroll and retain their children in primary schools and supply of text books at subsidized rates for secondary school children. Various investigations and reports noted that these strategies helped improving children’s enrolment and retention in schools. For example, the Millennium Development Goals Progress Report 2011 claims that the focus and substantive initiatives helped raising net enrolment in primary education to 94.89 percent in 2010 from 60.50 percent in 1990.

**Marginalization** – A product of power structure – is obstacle to gender, class and caste equity. It creates supply constraints for school accessibility. Education service delivery mechanism is strongly biased against the marginalized groups and localities; and quality of
education is awarded on the basis of gender, social class, ethnicity and degree of remoteness. Density of educational institutes in the hilly areas or underdeveloped districts is low. For example, Bandarban district, on average, has one primary school to cover 12.14 sq.km area, compare to the national average of one school in 1.9 sq. km (District Information). It means, compared to their counterparts in better off districts, children in Bandarban districts have to travel longer distance to go to their schools. Schools in the rural areas are neglected. In particular, school infrastructures in Charland areas are fragile and inadequate. Also, most schools in rural areas have teacher shortage; besides, the teachers do not have proper training. Moreover, absenteeism among the appointed teachers is high in the remote rural areas. In the cities, slum children suffer from shortages of accessible schools, especially at secondary level. For instance, slums in Dhaka have one primary school near the entrance of a slum for every 121 primary school-aged slum children and one secondary school for every 678 secondary school-aged slum children; whereas the national averages of enrolled students per institution are 215 for primary and 394 for secondary (World Bank, 2012).

Moreover, regional differences exist in students' learning outcomes. Dhaka and Chittagong perform better than the national average, while performance in Rajshahi and Sylhet lags significantly behind. Also, there is a rural urban gap in quality and passing issues in education. In 2001, pass rate in Dhaka metropolitan was 93.35 percent while pass rate in Mymensingh, Netrokona and Kishoreganj was less than 78 percent (Habib W.B., 2011). Gender discrimination against girls prevails in the society. Many families believe that girls do not need education; they prefer marrying their girls at very young age. In many families, girls stay at home to work and take care of younger siblings. In addition, there are constraints arising from insecurity and sexual harassment of adolescent girls.

Again, the relevant national policies and plans made significant efforts to address these issues. For example, they offered financial incentive or stipends to all girls attending secondary school. It indeed succeeded in improving girls’ enrolment in primary and secondary levels. World Bank (2013) noted that the country has achieved gender equity in both primary and secondary education; as the net enrolment rates in secondary education between 2000 and 2010 increase from 44 to 55 percent for girls and from 32 to 45 percent for boys, girls outnumber boys in secondary education.
Disaster - Impacts of disasters manifest through loss of life, asset and environment, disruption of services, livelihoods and social functions and physical, emotional and social distresses of the affected people. Disasters have severe and harmful impacts on children’s education. Natural hazards, such as cyclones, floods, flash floods and riverbank erosion, damage schools infrastructure and disrupts educational activities and displace children and their families. Children suffer from deprivations – e.g. reductions in their access to food, shelter, sanitation, medical care, protection and education. They become physically and emotionally distressed. Children also suffer from loss of learning materials and reduction in their access to schools. They lose precious education hours; and often it results in lower academic performance, higher dropout and denial of basic right of education. Disaster vulnerability of the schools arises from, as Alam, K. (2007) noted:

- Firstly, the physical location of the schools and their fragile construction that is inadequate to withstand disaster;
- Secondly, use of schools as disaster shelter, especially, in flood prone areas, makes those schools incur additional loss of school time;
- Thirdly, adversely affected local economy and the resulting need of the households to engage children in income-related activities;
- Fourthly, serious lack in institutional preparedness from school to national level in protecting education from disasters;
Fifthly, orientation of disaster preparedness activities to approach schools as a means for risk reduction rather acknowledging and addressing the risks posed by disasters to education;
Sixthly, not having meaningful horizontal linkage between disaster management and education and limited attention to Disaster Risk Management (DRM) in terms of policy and practice;
Seventhly, lack of clarity about DRM actions for education and respective roles the education and disaster management.

Institutions both in education and disaster management have sound understanding how disasters impact on infrastructure and assets. They have well developed and effective strategies for restoration and reconstruction. It mainly requires financial and material resource. Generally, institutional donors share the burden to supply financial resources. The institutions also have knowledge how education could be used for risk reduction and promoting culture of safety. They have included subjects and topics in the curricula. Children learn their lessons, and become able to help their communities reducing disaster risk. However, understanding about children’s educational losses is weak. Although repair and reconstruction are undertaken, its priority ranks low in the response interventions. Moreover, schools not damaged by disaster are used as shelters for affected people. It increases loss of education hours. Technologies and support provisions to help children make up for their educational losses are not available. Disaster affected children themselves have to work hard to make up for the loss time; they carry the burden solely.

### 4.2. Requirements for Disaster Resilient Education

Traditionally, humanitarian assistance concentrates on the survival of the affected people and recovery of their livelihood option. Food, water, shelter and heath have always remained as the core elements of humanitarian aid. However, there has been growing interest and recognition to consider the overall welfare of human beings; and emergency education has become an important element of humanitarian assistance. Emergency education is the provision of basic education during disaster and through the recovery
process. It seeks to meet children’s specific and immediate needs as well, restoring opportunity for positive long-term changes in their lives.

During disaster “education can be seen to support some of the central goals of humanitarian assistance, fulfilling critical functions beyond learning.”\(^3\) Child Friendly Space can be organized in the schools to help children overcome their emotional stress. Keeping children in CFS can help protecting children against physical harm as well against abuse, violence and exploitation. Schools and temporary learning spaces can be used as platforms to deliver critical humanitarian interventions to children or their families - in particular, children can get health care, immunization or mid-day meals.\(^4\) Also, mainstreaming disaster risk reduction in the national education system is important. It firstly seeks minimizing disruptions in the educational activities during disaster, secondly, ensuring that educational institutes and activity schedule do not increase children’s risk to disaster and, thirdly, help children as well as their community gain better understanding of disaster and disaster risk reduction knowledge and learn survival skill.

To achieve disaster resilient education, it requires, firstly, a combination of supports that ensure children overcome their emotional distresses, minimize physical pains, and protection against abuse, violence and exploitation. Children need recreational activities or psychosocial support to help children recover from shock, fear and anxiety. Children and their families should receive food, water, shelter and medical care to minimize their suffering from hunger, thirst, insanitation, injuries and illness. Also, there should have social interventions to discourage child labor or child-marriage and prevent child abuse or trafficking. Secondly, there is a need for alternative approaches and methods to run the educational activities. Classrooms may be damaged or children might have lost their learning


\(^4\) ibid
materials. Teacher may have to arrange open air learning session and apply different and unorthodox methodology to conduct the learning session. Thirdly, the educational institutes should have provisions for recovering the losses – for example, repair of school buildings and furniture and fresh supplies of equipment and teaching aids for teachers and learning materials (e.g. text books, exercise books, pens or pencils) for children.

To ensure these, teachers must have knowledge and skills about psycho-social care, Child Friendly Space and child protection. They also need to have skills to organize recreational activities and conduct learning sessions applying various methods that enable children to cope with the constraints of not having the text books. The educational institutions should have policies, plans and procedures provide guidance to the school management committees and teachers to organize teaching and learning events despite the disasters.

Furthermore, the disaster affected educational institutions will need financial or material resources to recover from damage and losses. The schools need to rebuild their facilities – e.g. classrooms, office rooms, water supplies and toilets. They have to repair or freshly procure benches, chairs, tables and other furniture. Schools also have to get chalk boards,
charts and other teaching aids. These supports may come through the education sector budget or through integrated emergency response interventions.

<table>
<thead>
<tr>
<th>Currently Available Provisions for Education in Emergency</th>
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<tr>
<td><strong>Access and Learning Environment</strong></td>
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<tr>
<td>- Furniture to school to replace losses of furniture</td>
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<tr>
<td>- School repairing materials to make classroom functional</td>
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<tr>
<td>- WASH facilities to school to ensure children’s access to water and sanitation during school time</td>
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<tr>
<td>- Recreational facilities for school to ensure children’s access to recreational activities</td>
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<tr>
<td><strong>Support for Teaching and Learning</strong></td>
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<tr>
<td>- Learning materials to children</td>
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<tr>
<td>- To ensure availability of learning materials</td>
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<tr>
<td>- Teaching tools and materials to teacher</td>
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<tr>
<td>- To ensure availability of teaching materials for continued education</td>
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<td>- Teacher’s training to help teacher improve capacities for continued education during disaster</td>
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<tr>
<td><strong>Teachers and Education Personnel</strong></td>
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<td>- Additional volunteer teacher to minimize gaps in the teacher’s availability for continued learning activities</td>
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<td><strong>Coordination and Information Management</strong></td>
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<td>- EiE Management Information System (MIS) for planning response intervention during disaster to ensure availability of information</td>
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<td>- 3W Mapping services for response intervention during disaster to ensure quick access to support</td>
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<tr>
<td>- Preparedness and Response Plan to enhance the capacity of education cluster to undertake EiE preparedness and response actions timely and effectively</td>
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<td>- Cluster Meeting to improve coordination of EiE interventions</td>
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<td>- Standard Operating Procedure (SOP) to ensure accountability and coordination of EiE interventions</td>
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<td>- Joint Needs Assessment to provide a shared understanding of the impact and priorities of EiE</td>
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<tr>
<td><strong>Disaster Risk Management</strong></td>
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<tr>
<td>- Lifesaving materials to school to minimize loss of human casualties among children and teachers</td>
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<td>- First aid box to school to administer emergency medical care to school children and teacher</td>
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<tr>
<td>- Awareness of children for reducing damage and loss to help children protect themselves better during emergency</td>
</tr>
<tr>
<td>- Awareness of teachers for reducing damage and loss to help teacher protect children better during emergency</td>
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*Source: Analysis of 3W Map of Education Cluster in Bangladesh, 2014*
5. Towards Disaster Resilient Education

5.1. Options for Education Risk Management

5.1.1. Safe Learning Opportunities

To continue their education, it is essential that children have an environment which is physically, socially and emotionally safe. In this regard, the followings should be considered during disaster.

**Standardized provisions for school facilities** – Following an incidence of disastrous hazard, schools may require repair or reconstruction of infrastructure and furniture, or alternative arrangements for classrooms and supplies of teaching and learning materials. This should be done as quickly as possible. However, the provisions should be safe, and designed and fabricated in a way that the facilities or materials do not expose children to any risk of physical harms. To ensure this safety measure, it is useful to develop or adapt school construction standards and safety standards to apply for both temporary and permanent facilities for all education institutes including madrasahs as well as for all types of educational materials used by these institutes.

**Hazard specific water and sanitation facilities** – Disasters events often damage school’s water supply and sanitation facilities. Children spend long hours in their schools; and they must have access to safe water and descent sanitation facilities. Damaged or disrupted water supply or sanitation seriously impedes children’s access to schools. For continuing education during disaster, it is important to consider the likely disaster scenario of the locations and build or reinforce school’s water supply and sanitation facilities on the basis of that keeping climate change induced uncertainty in mind.

**Child protection** – Disasters may displace many families and destroy their livelihoods. Children from these families become more exposed to abuse, violence and exploitation; and because of that, they stop going to their schools. To help disaster affected children continue their education, it is crucial to strengthen child protection mechanism in the schools and in the communities.
Changing room for children – In water logging or flood affected areas, many children may get their clothes wet while they come to the schools. In particular, it increases girls’ exposure to abuse; and they need a room or area designated to change their clothes in privacy. To encourage children, especially, girls, school should have changing room on a gender basis.

Transportation facilities – Damaged roads, school access roads, in particular, prevent children, also, the teachers, to come to their schools. Damaged roads should be repaired but it takes time. Therefore, it is essential establish alternative arrangements to bring children and teachers to the schools.

5.1.2. Effective Teaching Methods

As noted earlier, disaster may damage houses; and many families may have to take shelter elsewhere. Children from displaced families may suffer emotional distresses and physical pains (e.g. hunger, thirst, insanitation, injuries and illness). It prevents children to come to their schools. Also, damaged classroom and sanitation facilities and loss of teaching and learning materials hinder teachers to continue routine education activities. To minimize educational losses, it is important that the school authorities and teachers find various alternatives to address affected children’s emotional distress and involve them in educational activities.

Alternative method for lesson delivery – Conducting routine educational activities applying traditional methods may not be possible during disaster. Nevertheless, teachers can use various alternative methods for lesson delivery. For example, outreach school – organize learning sessions near affected children’s temporary dwelling areas; open air teaching session – under a tree or a shade; combined class – children from different grades participate in the same session and older children help younger children; and peer group learning – children help each other. Education Cluster, in collaboration with the department of education could develop different methods and protocols for using them in different scenarios.

Child Friendly Space – during disaster Child Friendly Space may become necessary to protect children against abuse, violence and exploitation. Teachers can collaborate with Child Friendly Space and continue educational activities through it.
Temporary residential facilities for children – Loss of education hour is especially burdensome for children in the final grades at primary, junior secondary and secondary levels. They could not complete their curriculum or take enough preparation but have to appear before respective public exams and compete with their counterparts from the areas not affected by disaster. Many of these children either dropout or fail in their exams. Temporary residential facilities would be great help for disaster affected children. Such arrangements help these children to find a place to live and study and prepare for the final exams.

5.1.3. Teacher and Education Material

While reconstruction of school facilities continue schools should use temporary facilities and apply alternative methods to conduct educational activities. Conducting educational activities applying alternative methods, during disaster, largely depend on the knowledge, skill and motivation the teachers. It is essential that teachers are motivated and they have the necessary skills and knowledge. The followings are some key activities.

Teachers’ training on Education in Emergency – Teachers in disaster prone areas should have sound understanding about Education in Emergency. Also, to conduct educational activities during disaster, they must have knowledge and skills to apply various alternative methods (e.g. outreach school, open air teaching, class with children from different grades and peer group learning) and the tools required for these different methods. Also, teachers should be able to understand disaster affected children’s protection and emotional needs. Therefore, teachers should have opportunities to gain knowledge and skills about these through training and similar activities.

Volunteer teacher – During disaster children need more attention and care, also, many of the teachers could be adversely affected and become unable to do their work. Therefore, schools need employ people as temporary teacher at a very short notice. To ensure supply of temporary teacher during disaster, Education Cluster, in collaboration with the department of education and the local communities, can arrange to mobilize volunteer teachers. These volunteer teachers should have knowledge and skills about Education in Emergency, application of traditional and alternative methods of teaching and child protection, which they could get through various training events.
**Address the needs of disaster affected teachers and educational personnel** – In the disaster affected areas, teachers and other educational personnel and their families may suffer from asset loss and disruptions. It significantly reduces their abilities to concentrate on conducting educational activities. It is highly desirable that teachers and education personnel receive assistance to overcome their losses and anxieties and participate fully in delivering educational service.

**Hazard resilient education materials** – Conducting educational activities require various equipment and tools. For example, it requires furniture (e.g. chair, table and bench) and teaching materials (e.g. chalkboard and charts). Education materials should be designed to support alternative methods of lesson delivery – for example, especially designed chalkboard for outreach schools or open air teaching session. In addition, materials used for making educational items should be hazard specific. For example, furniture for schools in saline prone and water logging areas should be made of plastic rather than metal or wood.

**Allocation for prompt material supply** - Develop contingency plans and allocate resource to quickly supply furniture (e.g. chair, table and bench) and teaching materials (e.g. chalkboards, charts, computers and overhead projectors), children’s learning materials (e.g. text books, notebooks, pens and pencils) and recreational items (e.g. footballs, cricket bats, nets and carom boards), and restoration of playgrounds.

### 5.1.4. Implementation and Coordination

**Protocol and procedures for needs assessments** – Education Cluster should develop protocol and update procedures to participate in rapid and comprehensive needs assessments for timely delivery of teaching and learning materials, establishing temporary learning space and reconstruction of school facilities. It also should mobilize trained personnel to engage them in rapid as well as the comprehensive assessment.

**Linkage with other Clusters** – Education Cluster should establish linkage with other clusters to ensure that preparedness and response plans for different sectors are drafted and implemented in way that mutually benefits the education sector interventions and response of the other sectors. It means, through negotiation, Education Cluster arrange that the other cluster, especially with Protection, Nutrition, WASH and Shelter Clusters, plan and implement their response operation in way that enable disaster affected children continue their education.
Clarifying roles of education committees and disaster management committees – There are education committees and disaster management committees at the local levels; they are default bodies embedded in the local government. The former is responsible for education program and the later deals with disaster risk reduction. Both should be involved in reducing disaster risk in education and continuing education during disaster, however, their roles about these are not clearly defined. Education Cluster should take initiative to help them define their respective roles about continuing education during disasters.

Pre-positioning education materials – It is essential to repair or reconstruct damaged school facilities – e.g. classrooms, water supply and sanitation facilities, as quickly as possible. More importantly, classroom equipment and teaching and learning should be supplied rapidly. Pre-positioning of educational in or near disaster prone areas helps speedy delivery of the education materials to the affected schools and children.

Awareness about continuing education – Loss of education hour has irreversible and long term impact on children as well their families. Nevertheless, recovery of educational losses ranks low in the felt needs of the affected communities as well in the conventional disaster response intervention. It is crucial that Education Cluster actively engage to raise communities' awareness about the importance of continuing education during disaster.

5.2. Policy Implication

To support and ensure continued education during disaster, Education Cluster may consider review and updating of the national education policy and the national disaster management strategy about the followings.

Develop common framework and specified guideline for EiE intervention - Disasters, through infrastructure damage and displacement of the affected people, hugely disrupt education. Although the DPE and DSHE are primarily responsible, it rarely could mobilize enough resources to restore education service quickly. It necessitates assistances from humanitarian agencies in the education sector. However, priorities of different humanitarian agencies vary greatly; and individual agencies perceive quality of education differently. To avoid quality variance or discrepancies in the performance of different agencies, it is essential that agencies apply a common framework and specified guideline to plan and implement their response interventions under education sector. This common framework and the guideline should enable the DPE and DSHE share restoration of
Education in Emergency: Exploring options for continued education during disasters in Bangladesh

education service with the humanitarian agencies; also should define the nature, scope and quality parameter of EiE as well the accountability structure of the agencies involved and the process of holding them to account.

Establish outreach service for pre-primary and primary age group children - During a disaster, largely, due to displacement of their families, damaged roads and concerns about children's protection, pre-primary and primary school children become unable to come to their schools. In such situation, linking pre-primary and primary education to Child Friendly Space or establish Temporary Learning Space and provide outreach service could help to continue education for children. Also, to support this initiative, all teachers of the pre-primary and primary school must have training on child protection including psycho-social support and Education in Emergencies. The national education policy should provide guidance to the education authorities at the local level to plan and implement outreach education service during disaster and make training on child protection and EiE mandatory for schools teachers.

Establish link between livelihood and education sector interventions - Retention of children in primary school often becomes challenging during disaster because many of the affected families suffer from economic hardship and they temporarily migrate to other places. To prevent dropout during disaster it is crucial to link livelihood recovery interventions with education sector intervention. The national disaster management strategy should support it through prioritizing education sector interventions.

Make provisions for speedy reconstruction of school infrastructure and facilities - Although the national education policy seeks to minimize the existing discriminations among schools in regard to facilities and infrastructure constraints, disasters tend to increase this discrimination. To compensate the losses the affected schools require additional resources and they need it quickly. However, the prevailing system applies slow and lengthy process to allocate fund for reconstruction school infrastructure and facilities. It should be reviewed; and there should have provisions for speedy reconstruction of infrastructure and facilities of the affected schools.

Strengthen policies and guidelines to help children with disability access education during disaster – Mainly due to resource and time constraints, temporary infrastructure and facilities rarely meet specific needs of the children with disability. It denies children with disability access to education during disaster. Education policy and EiE
guidelines clearly state how to deal with it and what are obligations of the agencies involved in response interventions under education sector.

5.3. Advocacy issues for Education in Emergency

Define clearly the provision for continued education during disaster through a policy framework in the education sector - Disasters in Bangladesh disrupt children’s education. School infrastructure may collapse. Teachers may suffer injuries. Children and their families may be forced to leave their home. Also, the schools in good condition may be used as an emergency shelter; as well, educational personnel and teachers may be called upon to participate in emergency response. It further disrupts education. The Standing Orders on Disaster (SOD) suggested that in cyclone or flood prone areas, schools infrastructure should be strong and two storied building; and these should be for dual purpose. SOD also specified that teachers should assess disaster risk of the sector and participate in rescue, evacuation and relief work.

The Department of Disaster Management under the MoDMR through its Comprehensive Disaster Management Programme (CDMP) has developed conceptual framework disaster risk reduction and strategies for disaster management. It also has developed various procedures, guidelines and tools for assessing vulnerability and risk, drafting contingency and preparedness plans and risk reduction drills and simulation exercises. In addition, CDMP has initiated various training for enhancing capacities the government personnel and community people.

Disasters occur in Bangladesh at regular interval. It severely affects large numbers of people. It is important that resources within the government system – including education sector, and in the communities are used to save life and help people meet their immediate and urgent needs during disaster. However, education is a human right, universal and inalienable. Education is especially important in enabling people to reach their full potential and exercise other rights. This right does not disappear or get suspended because of disasters and emergencies. When education is interrupted or limited, students dropout, with negative and permanent economic and social impacts for students, their families, and their communities. Natural hazards are part of the context for educational planning. Whether it is annually recurring floods, a once-in-5-generations earthquake, the increasing severity of storms and cyclones, water shortages, or the slow onset of rising sea water levels, these known and
expected hazards can be mitigated with the determined application of knowledge, education, and ingenuity” (IFC 2010).

It is important that efforts should be made to prevent children stay out of school for prolonged period that increases dropout and results in lifelong negative impact. The schools, in addition to ensuring physical protection and response capacity development, should have contingency plans to continue providing education to students as quickly as possible following hazard impact.

Continued education aims to minimize educational losses and, more tangibly, enable disaster affected children compete equally with other children in public examinations. Continued education should include the a) child protection and safety, b) dealing with children’s emotional distress, c) ensuring affected children’s access to quality education and d) alternative and flexible methods of lesson delivery. Schools should arrange for alternate sites and creative alternatives for making that education continues. Schools should work with the communities and other agencies to remove physical barriers in the school approach roads and ensure children’s protection while they travel to their schools. School activities also should include variety of psychosocial support to help children overcome their emotional distresses.

One of the aims of education as defined by countries national education policy 2010 “to build students as skilled human resources to fight the challenges of the world threatened by climate change and other natural disasters and to create in them a social awareness about environment.” To fulfill this aim it is not only important to integrate DRR and CCA in the students’ curricula but also need to make a policy provision for building education system and infrastructure disaster resilient. However, when and how to plan and implement continued education during disaster are not clearly explained in the national education policy. Therefore, it is necessary to adopt a policy framework for DRR in Education and EiE involving both disaster management and education authorities that gives directives for continued education during disaster and explain nature, scope and procedure of DRR and continued education in disaster situations. The framework should give agreed and approved toolkits, guidelines and manuals (like school risk assessment and planning tools and guidelines, teachers and SMC training manuals, Bangladesh standards for EiE, Framework implementation guideline, etc.) to integrate DRR and EiE in the education system itself. Education cluster may formulate an advocacy strategy to support DPE and DSHE to
integrate DRR and EiE in sector planning, teachers training, SMC guidelines, local and school education planning, etc.

**Define clearly the roles of school teacher and SMC for conducting educational activities during disasters** - It is essential that during disaster, in addition to relief operation and using schools as shelter, educational activities should continue. Failing to continue education increases dropout rates; and it results in lifelong negative impact. In particular, primary school children are more vulnerable to prolonged disruption of educational activities and the resulting dropout. Therefore, it is crucial that the teachers knowledge, skills and motivation is built to continue educational activities as quickly as possible following hazard impact.

The Directorate of Primary Education and Directorate of Secondary and Higher Education recruit teachers for government supported schools. It also defines and explains roles and responsibilities of the teachers. Indeed, the roles and responsibilities for school teachers relating to school management and conducting educational activities are defined well and explained in details but it refers only to the normal times. Performances of school teachers during normal times could be measured against these job descriptions. Then, the SOD has described roles and responsibilities of the educational personnel, SMC members and the teachers during disasters. It explained when and how school teachers take part in disaster risk reduction activities and rescue, evacuation and relief operation. These responsibilities are in addition to the teachers’ normal work.

However, neither DPE and DSHE nor the SOD describes teachers’ and SMCs’ roles and responsibilities relating to continue education during disasters. This is a major gap in the system. To ensure minimizing disruptions of service, degradation of quality and dropout of children, DPE and DSHE –that recruit the teachers’ should define and describe teachers’ roles and responsibilities relating to continue educational activities during disaster. This should be the same for the SMCs. It is, therefore, important that, to have DPE and DSHE clearly articulated job descriptions and guidelines that explain roles and responsibilities of teachers and SMCs relating conducting educational activities during disasters.

**Plan for teachers’ DRR and EiE capacity building in the government training programs** - Efficient conduction of educational activities in primary school, to large extent, depends on the knowledge, skills and motivation of the primary school teachers. It influences quality of teaching and children’s performance in primary school. The Ministry of
Primary Education and various related agencies under the ministry have acknowledged this fact; and over they have developed an elaborate system for the training of the primary school teacher. Training of the primary school teacher aims to improve capacities for conducting educational activities. To institutionalize this capacity building initiative, the Department of Primary Education has established National Academy for Primary Education as the apex institution for training, research, academic supervision and educational management of primary education in Bangladesh. However, these training programs under the Department of Primary Education consider only the normal times.

Generally, it is perceived that the Department of Disaster management, through CDMP and with support from humanitarian agencies, would organize arrange for relevant stakeholders’ disaster management related capacity building. Additional roles of the teachers for disaster management have been specified through the SOD. According to the SOD, in normal times, teachers should do risk assessment and risk mitigation activities in normal time and during disaster they are expected to participate in rescue, evacuation and relief operation. Teachers need to have knowledge and skills to perform their disaster management related duties well. Capacity building programs that the Department of Disaster Management has developed through CDMP, to large extent, meets this particular training need of the teachers.

However, very little is there to help the teachers enhance their knowledge and skill about conducting educational activities during disaster. NAPE as the apex institution for primary school teachers’ training should take initiative to minimize this gap in the system and plan primary school teachers training on conducting educational activities during disaster. To facilitate this, Education Cluster in Bangladesh should support NAPE and pursue to include a training course on continued education during disaster in the NAPE training package.

**Define region and hazard specific appropriate infrastructure for schools in different hazard prone areas through MoE and MoPME Building Code** - The Ministry of Primary and Mass Education, as well, the Standing Orders on Disaster pursue that the primary school infrastructure in the cyclone and flood prone areas should be strongly built two storied buildings. These should be used as cyclone or flood shelter as and when necessary. It is necessary that during flood or cyclone people should take shelter in schools and other public building. It saves life and minimizes affected people’s distress. It is
to be mentioned that construction of higher educational institutions including high schools, colleges and madrasahs often lacks consideration of disaster components.

However, two storied concrete buildings are not sustainable in many areas. Large parts of the flood prone are Charland and riverbank areas. These areas are unstable and vulnerable to riverbank erosion. Due to riverbank erosion land attached to the bank line along with the infrastructure collapse it into the river. Usually, when a place is threatened by riverbank erosion, people remove or relocate the infrastructure to a different place. Concrete infrastructure cannot be relocated or salvaged. They perish and disintegrate in the river as the erosion progress. Thus, two storied concrete infrastructure for schools in flood prone areas are highly vulnerable. Firstly, they require huge investment to build, then, they are lost when riverbank erosion accelerates. Infrastructure that can be dismantled or relocated quickly is better option for hazard resilient schools in flood prone areas.

Instead of having a single design for school infrastructure in all areas, it is better to apply an approach that allows variation to deal with different hazard contexts. Disaster resilient school and classroom construction can be prioritized depending on the location of schools and the potential hazards in these areas. To build disaster resilient school infrastructure, Education Cluster in Bangladesh should work with the MoE and MoPME to introduce Building Code that allows variation to deal with different hazard contexts.
6. Conclusion

Bangladesh is committed to Education For All and the Millennium Development Goals. This commitment is supported through the article 17 of the Bangladesh Constitution; and to facilitate the process further recently it has formulated the National Education Policy 2010. The programs to improve access to education considered poverty and discrimination against women as a major hindrance for pursuing EFA objectives. The strategies, therefore, included large elements to reduce cost burden on the families, incentives for girls to attend schools and assistances to poor households for sending their children to primary schools. Over the years, the country has made significant progress towards its commitment to education. Notably, it has achieved high rate of enrolment of children in primary schools and gender parity in education at primary and secondary levels.

The country, however, is extremely prone to disaster. Disasters, resulting from cyclone, flood, flash flood, salinity intrusion and riverbank erosion occur at regular intervals. They breach school access roads and destroy school infrastructure, classroom furniture and equipment. Children suffer from loss of learning materials and reduction in their access to schools. It results in loss of education hours and, consequently, lower academic performance and higher dropout. Impact of disaster on children through loss of education is severe and long term.

Institutions in education and disaster management use education as a means for risk reduction. Subjects and topics have been included the curricula. It primarily aims for reducing risk and promoting culture of safety. Although response interventions undertake repair and reconstruction of infrastructure and supply of materials, continuing education remains low in their priorities. Moreover, schools not damaged by disaster are used as shelters, which further increases loss of education hours. Technologies and support provisions to help children make up for their educational losses are still missing. Children themselves have to work hard to make up for the loss time. It is fundamental that the national education policy provides guidance for continuing education during disaster. Institutions in both education and disaster management redefine their roles and enhance their capacities to help children access education perform satisfactorily despite the disasters.
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