Climate and Disaster Risk Screening Report for General Project in Bangladesh: Hypothetical General Project for Bangladesh[1]

[1] This is the output report from applying the World Bank Group's Climate and Disaster Risk Screening Project Level Tool. The findings, interpretations, and conclusions expressed from applying this tool are those of the individual that applied the tool and should be in no way attributed to the World Bank, to its affiliated institutions, to the Executive Directors of The World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the information included in the screening and this associated output report and accepts no liability for any consequence of its use.

1. Introduction

The project level **Climate and Disaster Risks Screening Tool** provides due diligence on climate and disaster risks at an early concept stage. The tool uses an **exposure – sensitivity –adaptive capacity framework** to consider and characterize risks from climate and geophysical hazards, based on key components of a project and its broader development context (Annex 1). The tool helps inform consultation, dialogue, and further work to be done in the course of project design.

The results of applying the project level tool to screen for climate and disaster risks for "Hypothetical General Project " in Bangladesh are summarized below.

2. Climate and Disaster Risk Screening Results Summary

2.1 Project Information Summary

Table 1 below provides key project information.

Table 1: Project information

Project Information	
Title	Hypothetical General Project
Number	n/a
Region	South Asia
Country	Bangladesh
Type of Assessment	General Projects
Purpose of Screening	Screen a Project at the Concept Stage
Current Project Phase	Concept (Identification)
Funding Source	IDA
Keywords	Education
Location	The project will be implemented all over Bangladesh. Many of these schools are likely to be built in the disaster-prone coastal regions where they will also serve as shelters during cyclone and natural calamities. The schools in the Chittagong Hill Tracts (CHT), which have the largest concentration of the country's indigenous population, would be designed considering the norms and culture of the indigenous population. The actual locations of the schools where infrastructure would be provided will be finalized after site verification by implementing agency of the assessed need prepared by the project consultants.
Sub Sectors	Education
Location	The project will be implemented all over Bangladesh. Many of these schools are likely to be built in the disaster-prone coastal regions where they will also serve as shelters during cyclone and natural calamities. The schools in the Chittagong Hill Tracts (CHT), which have the largest concentration of the country's indigenous population, would be designed considering the norms and culture of the indigenous population. The actual locations of the schools where infrastructure would be provided will be finalized after site verification by implementing agency of the assessed need prepared by the project consultants.
GPS Coordinates	This is optional information which may be useful when searching for geospatial climate and hazard information from data sources. It is not directly used in the screening process.
Outcome / Service Delivery	This project aims to build and improve primary education schools throughout Bangladesh which will also serve as disaster shelters in the coastal areas during emergency response situations.

2.2 Summary of Exposure to Climate and Geophysical Hazards

Table 2 presents a summary description of exposure to climate and geophysical hazards at the project location for the Historical/Current and Future time frames. The Future time frame is based on changes projected to occur between the 1980-1999 average and a future average. This future average is most likely the 2040-2059 average (i.e., the default in the Climate Change Knowledge Portal - CCKP), but the range is dependent upon the specific time frame that the user applied using the CCKP or other climate information. Again, these descriptions, if based on information in the CCKP, may be supplemented by national data sets.

Table 2: Summary of Exposure to Climate and Geophysical Hazards at Project Location

Hazard	Time Frame	Description of hazards for your location
Extreme Temperature	Current	Average monsoon-season maximum and minimum temperatures show an increasing trend annually at the rate of 0.05°C and 0.03°C, respectively. An increasing trend of about 1°C in May and 0.5°C in November during the 14 year period from 1985 to 1998 has been observed.
	Future	The temperature is projected to increase with greatest warming (Dec-Feb) projected to be 1.4°C by 2050 and 2.4°C by 2100
Extreme Precipitation and Flooding	Current	The erratic nature of rainfall and temperature has increased in Bangladesh. Bangladesh is frequently inundated with seasonal floods and flash floods. In the coastal area tidal flooding happens twice in a day.In the flood prone areas and recently the northern part and char areas experience floods twice in a year. According to the local community the duration of the flash floods has increased.
	Future	According to the Intergovernmental Panel on Climate Change's Third Assessment Report, there is evidence that the precipitation rates may increase by 20% to 30%" (IPCC 2001). As yet it is difficult to project rainfall changes for the GangesRiver flood plain, with some models projecting wetter and others projecting drier conditions.
Drought	Current	The north and western part of the country is drier compared to the other part of the country. Seasonal droughts in Bangladesh most commonly affect the northwestern region, as it receives lower rainfall than the rest of the country. These droughts have a devastating impact on crops thereby also affecting the food security of subsistence farmers.
	Future	It is difficult to project rainfall changes for the GangesRiver flood plain, with some model projecting wetter and others projecting drier conditions.
Sea Level Rise	Current	The project locations also include the coastal areas. Tidal flooding happens twice in a day.
	Future	Sea level rise is projected for Bangladesh, although there is disagreement on what the degree of sea level will be- one study suggests an increase of 30-100 cm by 2100, while the IPCC Third Assessment gives a global average range with a slightly lower values of 9 to 88 cm.
Strong Winds	Current	The extreme wind speed is observed only during cyclones.
	Future	The maximum wind speed from tropical cyclones is expected to increase, but estimates are highly uncertain
Earthquake	Current	Bangladesh is located in a seismically active and high-risk region. The northern and eastern regions of the country are particularly susceptible to earthquakes.

2.3 Summary of Overall Project Risk

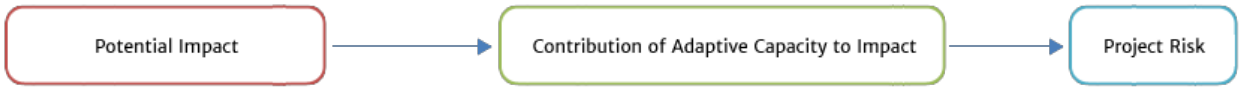
Tables 3A and 3B below summarize ratings for project components and/or project subsectors, and outcome/service level for *Historical/Current* and *Future* time frames. The ratings are derived on the basis of the hazard information, subject matter expertise, contextual understanding of the project, and the larger development context.

The results indicate where risks may exist and where further work may be required to reduce or manage these climate and geophysical risks. An ongoing process of monitoring risks, refining climate and other information, and regular impact assessment may also be appropriate.

2.3.1 Results Summary - by Component

Table 3A summarizes the ratings for the project. The results provide a characterization of risks caused by climate and geophysical hazard on project subsector and components. The potential impact due to exposure from hazards is modulated by the project's non-physical components (enabling and capacity building activities) and the larger development context to determine overall risk to the intended project outcome.

Table 3A: Results Summary - by Component



Sector / Subsector	Project Context				Development Context				Outcome / Service Delivery	
	Potential Impact		Non-Physical Components		Selected Sector / Subsector		Broader Context			
Time Frame	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future
Education			Maintenance and operations: Significantly Reduces Impact Capacity Building and Training: Slightly Reduces Impact Overall: Significantly Reduces Impact		Slightly Reduces Impact		Access to technology: Slightly Reduces Impact Nutrition: Slightly Reduces Impact Political instability: Slightly Increases Impact Overall: Slightly Reduces Impact			

2.3.2 Results Summary -by Time Frame

The matrix below depicted in Table 3B displays the same results as Table 3A, but does so by time frame.

Table 3B: Results Summary - by Time Frame

Sector / Subsector	Current					Future				
	Potential Impact	Non-Physical Components	Development Context: Selected Sector / Subsector	Development Context: Broader Context	Outcome / Service Delivery	Potential Impact	Non-Physical Components	Development Context: Selected Sector / Subsector	Development Context: Broader Context	Outcome / Service Delivery
Education		Maintenance and operations: Significantly Reduces Impact Capacity Building and Training: Slightly Reduces Impact Overall: Significantly Reduces Impact	Slightly Reduces Impact	Access to technology: Slightly Reduces Impact Nutrition: Slightly Reduces Impact Political instability: Slightly Increases Impact Overall: Slightly Reduces Impact			Maintenance and operations: Significantly Reduces Impact Capacity Building and Training: Slightly Reduces Impact Overall: Significantly Reduces Impact	Slightly Reduces Impact	Access to technology: Slightly Reduces Impact Nutrition: Slightly Reduces Impact Political instability: Slightly Increases Impact Overall: Slightly Reduces Impact	

Insufficient Understanding	Not Exposed No Potential Impact No Risk	Slightly Exposed Low Potential Impact Low Risk	Moderately Exposed Moderate Potential Impact Moderate Risk	Highly Exposed High Potential Impact High Risk

2.4 Key Drivers of Risks

Based on the results above, Table 4 highlights the key drivers of risks for each project component and/or subsector ratings. Specific consideration should be given to those which have high ratings, or are moving from moderate to high ratings. Note also the overall modulating effects of non-physical components and the broader development context to the project outcome.

Table 4: Key Drivers of Risk

	Historical/Current Drivers	Future Drivers
Hazards and Location	Extreme Precipitation and Flooding Drought Sea Level Rise & Storm Surge Storm Surge Strong Winds Earthquake	Extreme Temperature Extreme Precipitation and Flooding Drought Sea Level Rise & Storm Surge Storm Surge Strong Winds
Physical Components	*	*
Outcome / Service Delivery	*	*

Key: High Risk  Moderate Risk 

* No high or moderate risks identified for this particular portion of the project.

- Overall, the Non-physical Components : **Significantly Reduces Impact**
- The Selected Sector/ Subsector is expected to : **Slightly Reduces Impact**
- Overall, the Broader Development Context : **Slightly Reduces Impact**

3. Next Steps

Table 5A provides some general guidance on follow-up based on the risk ratings for the Outcome/Service Delivery. Table 5B lists some climate risk management measures for your consideration. Visit the "Next steps" page of the tool for guidance and a list of useful resources.

Please recall that that this is a high-level due diligence tool, and the characterization of risks should be complemented with more detailed work.

Table 5A: General Guidance Based on Risk Ratings for Outcome/Service Delivery

Insufficient Understanding	Gather more information to improve your understanding of climate and geophysical hazards and their relationship to your project.
No Risk	If you are confident that climate and geophysical hazards pose no risk to the project, continue with project development. However, keep in mind that this is a high-level risk screening at an early stage of project development. Therefore, you are encouraged to monitor the level of climate and geophysical risks to the project as it is developed and implemented.
Low Risk	If you are confident that climate and geophysical hazards pose low risk to the project, continue with project development. However, keep in mind that this is a high-level risk screening at an early stage of project development. Therefore, you are encouraged to monitor the level of climate and geophysical risks to the project as it is developed and implemented. You may also consider gathering additional information to increase your level of confidence in your rating.
Moderate Risk	For areas of Moderate Risk, you are encouraged to build on this screening through additional studies, consultation, and dialogue. This initial screening may be supplemented with a more detailed risk assessment to better understand the nature of the risk to the project.
High Risk	For areas of High Risk, you are strongly encouraged to conduct a more detailed risk assessment and to explore measures to manage or reduce those risks.

Table 5B: Types of Climate Risk Management Measures for typical General Projects

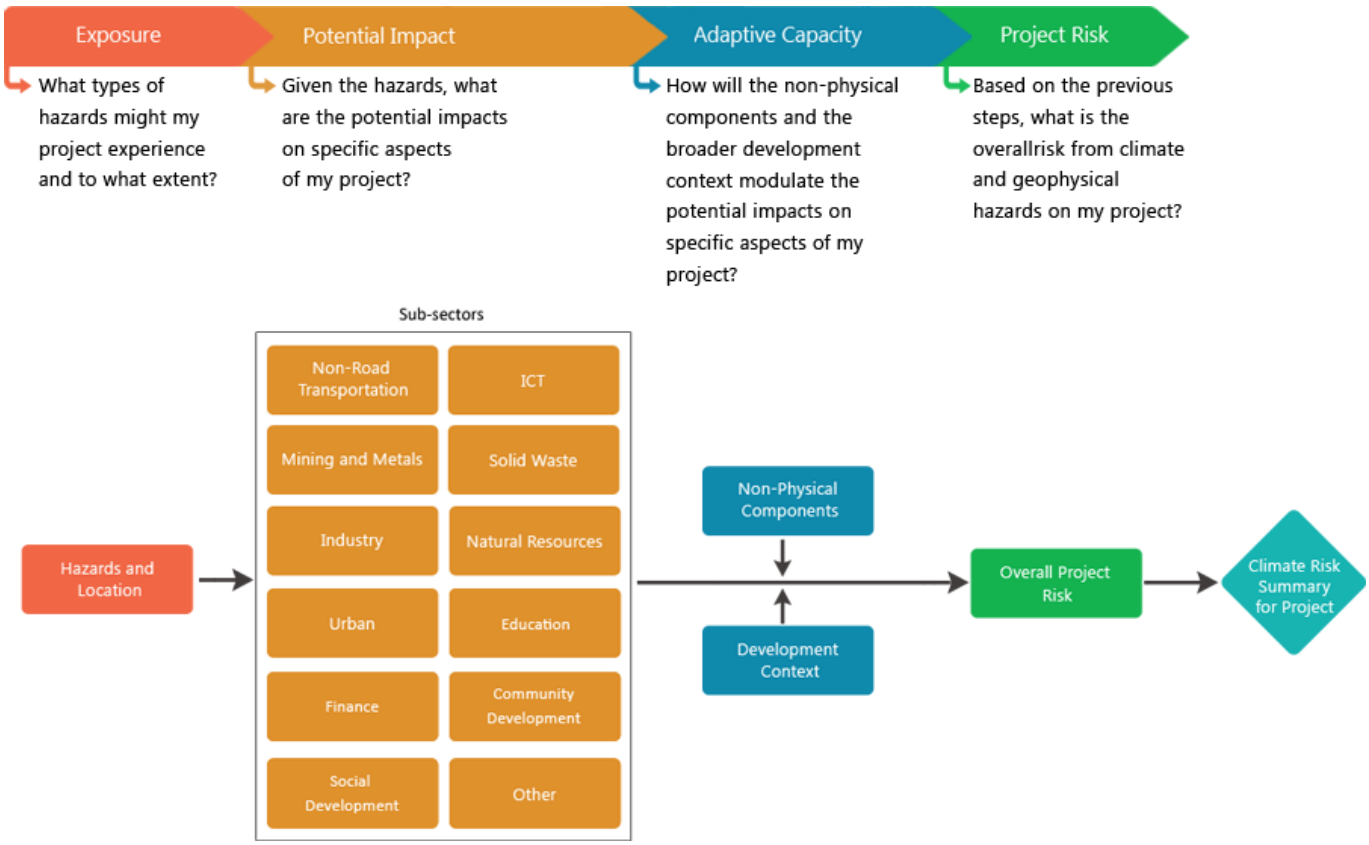
CATEGORY	PROS	CONS	EXAMPLES
Accommodate and Manage	• Flexible • Typically low-cost • Useful when risk is low, but projected to rise in the future	• Temporary solution • Can be insufficient in preventing losses	• Increasing operations and maintenance budget • Modifying management practices • Conduct monitoring through data collection and analysis
Protect and Harden	• Can be used for existing and new assets • Responds to immediate risks	• High cost • Inflexible • Effectiveness may decrease over time	• Elevating key infrastructure • Expanding drainage capacity • Implementing wind protection measures
Retreat and Relocate	• Long-term solution • Responds to immediate risk	• High cost • Inflexible	• Relocating project • Moving infrastructure further inland or on higher ground

Annex 1: Tool Approach

Tool Approach

Table A2-1 summarizes the sub-national locations of high risk noted during the assessment, if the user entered these sub-national locations. Table A2-2 summarizes all the notes entered by user for each section while completing the assessment, if the user elected to enter notes. These notes can help shed light on specific ratings as well as considerations and limitations of the user's expertise

Figure 1: Project Level Climate and Disaster Risk Screening Tool: Approach for General projects



Annex 2: Notes

Table A2-1 summarizes the sub-national locations of high risk noted during the assessment, if the user entered these sub-national locations. Table A2-2 summarizes all the notes entered by user for each section while completing the assessment, if the user elected to enter notes. These notes can help shed light on specific ratings as well as considerations and limitations of the user's expertise.

Table A2-2 Summary of Comments by Section

Section		Notes
Hazards and Location	Drought	With the increasing drought and groundwater depletion, scarcity of drinking water may be an issue for the school children of those areas.
	Sea Level Rise	Many of the schools are to be built in the disaste-rprone coastal regions where they will also serve as shelters during cyclone and natural calamities.
	Geophysical Hazards	The implementing agency will be following Bangldesh National Building Code in the construction of new building and extension of buildings to address the earthquake hazard.
Non-physical Components	Maintenance and operations	The schools require regular maintenance mechanism for maintaining the infrastructure quality.
Outcome / Service Delivery	Education	The project will take into account climate and disaster risks when siting the new schools, and the fact that these schools will serve as shelters during emergency weather situations will not only decrease the impact from climate risk associated with this project, but it will also serve to help other projects in this locations reduce risk to climate and disaster risks.