

# Bangladesh's Vulnerability to Climate Change

## Start of the ICZM Process

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**Erosion and flood havoc** About 85% of the total population of Bangladesh (more than 150 million inhabitants) lives in a rural environment, which is often very vulnerable to recurring hazards, particularly floods. (photo: BCAS)

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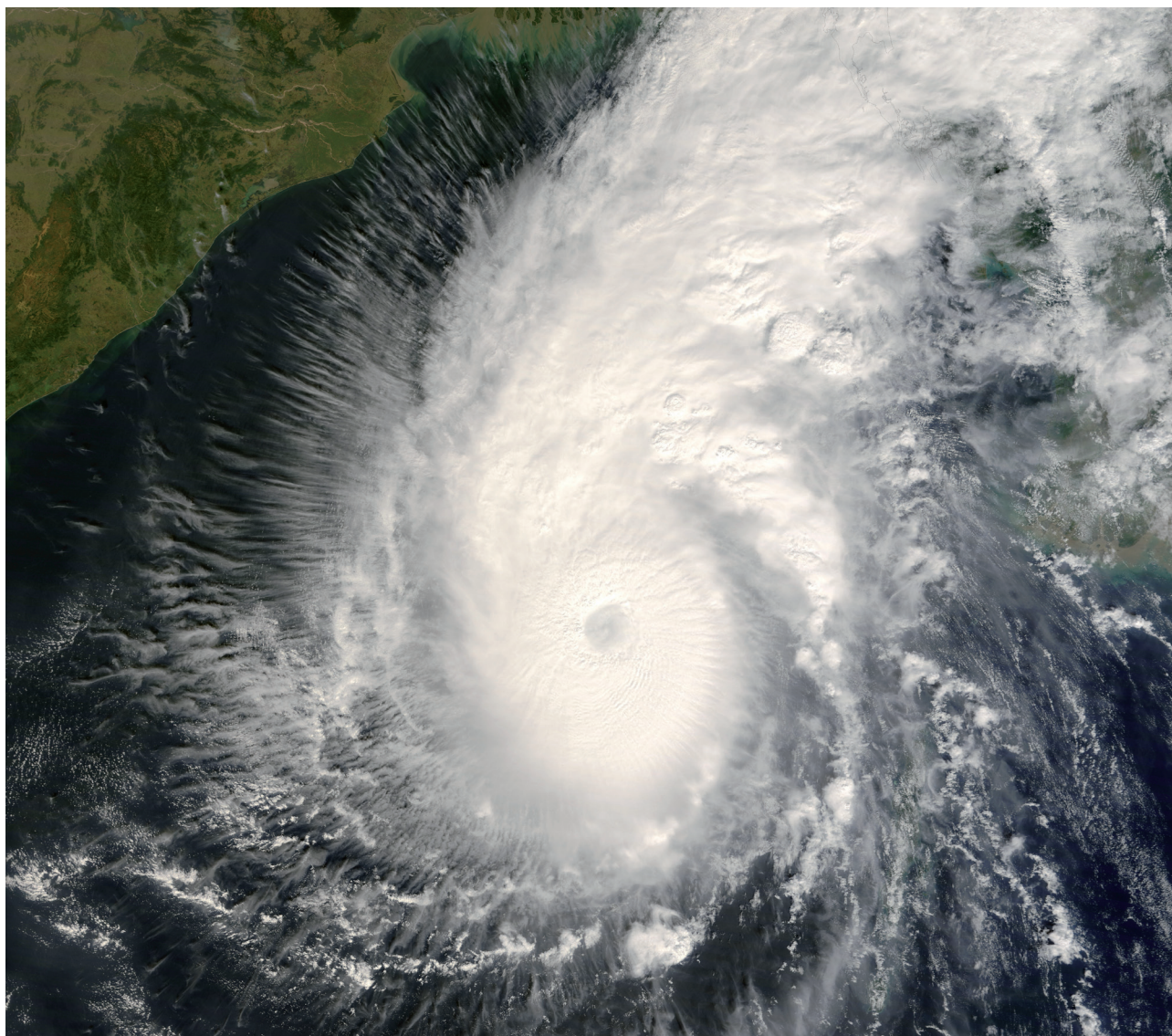
### Summary

Bangladesh, flat and low lying, is one of the most vulnerable countries to present day extreme weather events. More than half of the population suffers annually from typhoons, river flooding and droughts. The changing climate adds a new dimension to the risks that threaten the lives and livelihoods of coastal communities, if no adaptive measures are taken. A Vulnerability Assessment (VA) was meticulously carried out according to the IPCC VA Common Methodology in the beginning of the 1990s. Based on a business-as-usual socio-economic scenario and a 1 metre sea level rise it is predicted that more than three quarters of the total population will be affected annually by flooding. Sharing water resources with India is an important future adaptive option. Without it, almost the entire population will be affected by flooding and drought. Agriculture, in particular rice production, will be adversely affected by increased flooding and salt water intrusion. The salt water front will move inland by several tens of kilometres affecting one million ha of arable land and threaten the supply of drinking water of three major cities. Increased sea surface temperatures will intensify the tropical cyclone activity in the Bay of Bengal. The 2007 extreme Sidr cyclone affected a large part of Bangladesh and could be a foretaste of what is to come with a changing climate.

Bangladesh continues to develop its adaptation techniques sharing their knowledge with other vulnerable countries. The government and Non Governmental Organisations by working together, are setting a good example in how to analyse these vulnerabilities to a changing climate. Integrated planning of the vast river plains and coastal areas is one of the key ways of adapting to the changes brought about by climate change. A comprehensive ICZM programme resulted amongst other things in a Coastal Zone Policy and Development Strategy supporting practical measures such as zoning the use of coastal land and restoring mangrove forests. About 150,000 ha mangrove plantation have already been created. Balanced decision making in the coastal zone is facilitated by increasing knowledge of socio-economic and natural processes in coastal areas. One of the ICZM tools applied in Bangladesh is GIS in combination with remote sensing. CEGIS (Center for Environmental and Geographic Information Services) has been created and developed into an important national knowledge institution and a public trust.

However, much more needs to be done locally, nationally and within a framework of international cooperation to prepare adaptive river and coastal measures. The hesitancy to include findings from assessments of future climate related risks in coastal development strategies and programmes is a major constraint to achieving millennium development goals and preparing adaptive responses. The challenges are multi-sectoral, multi-dimensional and long term.

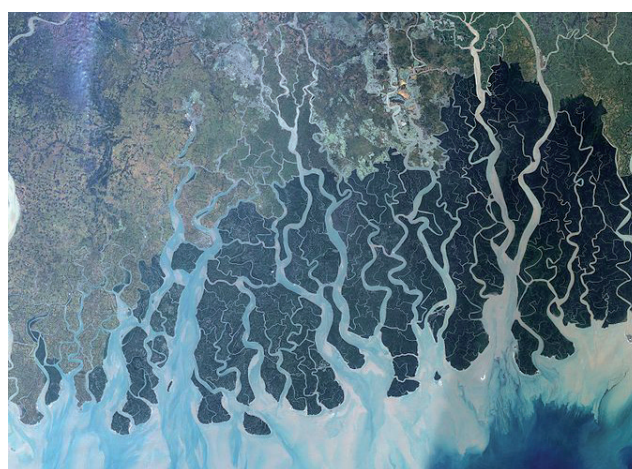




*Cyclone Sidr in the Bay of Bengal : 14 November 2007 - one of the strongest cyclones recorded in the Bay of Bengal; 3,447 deaths were officially declared. The Cyclone Preparedness Programme including the improved warning system, facilitated timely and massive evacuation to many new shelters. (photo: NASA)*



*(photo: Tjark van Heuvel)*



*(source: NASA Jesse Allen, 28-01-08)*

*The Sundarbans forest - a UNESCO World Heritage site, covers 10,000 km<sup>2</sup> (dark blue green coastal area on the satellite image) is the world's largest single belt of tidal mangroves. It provides livelihood and protection against storms. Large parts of the Sundarbans could be lost under influence of a 1 m sea level rise.*