



## **Climate change and its impact in Coastal region: Bangladesh perspectives**

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This paper intends to highlight the impact of climate change in the coastal area of Bangladesh caused by ongoing climate change assessed from the existing researches. Bangladesh is one of the most vulnerable countries in the world to climate change. Climate change poses significant risks for Bangladesh, yet the core elements of its vulnerability are primarily contextual. Bangladesh is vulnerable to cyclones and the frequency of cyclone and storm surges which are increasing due to the climate change. Cyclones originate from the Indian Ocean when passes through the Bay of Bengal where shallow water contributes to huge tidal surges. It is revealed from different researches that average storm surges range from 1.5 to 9 meters and in extreme condition it reaches up to 15m height.

Partial listed data of cyclones (1876-1991) along coastal Bangladesh and respective surges heights shows that the surges range from 3m to 10m. Over two-third of the country is less than 5 m above the sea level and densely populated, most of the part of the country go under water during storm surges followed by loss of lives and resources. A cyclone in 1970 resulted in close to 300,000 deaths, and another, in 1991 led to the loss of 138,000 lives.

The country is also highly vulnerable to sea-level rise because it is low-lying, located on the Bay of Bengal in the delta of the Ganges, Brahmaputra and Meghna. It is estimated that a 1.5 cm rise in sea level could inundate 16% of the total land of the country and 15% of the total population of the country could be affected. Coastal people are the first victim of sea-level rise and climate change related vulnerabilities. The largest continuous mangrove forest called Sundarbans is vulnerable to sea-level rise. A 45 cm sea level rise would inundate 75% of the Sundarbans, and 67 cm sea level rise could inundate all of the system. With a one metre sea-level rise, many of its species, such as Bengal tigers, Indian otters, estuarine crocodiles and mud crabs, will be at risk of extinction.

Both livelihood options of coastal communities and the natural environment of the coastal zone are affected climate change induced natural hazards. It will also affect national food security of the country. Mitigation and adaptation are two options to minimize the impacts. A combined effort of Bangladesh Government, Bangladesh's people and International communities is emerge need to survive.