

Climate change and sea level rise: Challenges for coastal communities in South Asian Region.

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Climate change is one of the greatest threats to human lives and livelihoods. Coastal areas figure among the most vulnerable of all environments to global climate change all over the world. This phenomena will significantly aggravate existing hazards such as flooding from cyclones and storm surges. Other climate-induced risks, including sea level rise, salinity intrusion, drought, and temperature and unusual rainfall are becoming serious threats to food, water, energy, and health security for humankind. The coastal countries of the Indian Ocean region from East Africa to South Asia are highly vulnerable to climate change. Many are especially endangered because of their geographic location and topography. Bangladesh and Maldives for example are predicted to be among the most substantially affected countries in the world. Additional factors-including excessive population growth, poverty, lack of awareness of climate risks, and unplanned urbanization make the region all the more susceptible to climate-induced extreme events. Currently, about 20 percent of South Asia's population lacks access to water services, and more than 27 percent are without adequate food. Climate change and climate variability threaten to push these figures even higher in a number of countries in the region. Projected impacts from global warming include rising sea levels, stronger tropical cyclones, larger storm surges, increasing sea surface temperatures, and as the oceans absorb more of the carbon dioxide that human activities emit to the atmosphere-growing acidification of surface waters. For coastal ecosystems and communities, the repercussions could be considerable, threatening the livelihoods, health, and welfare of millions of people. More frequent and severe storms can inundate low-lying coastal zones, destroying infrastructure and displacing populations. Higher water levels and larger wave surges can contribute to accelerated shoreline erosion and retreat. Mounting sea levels can also exacerbate saltwater intrusion into the rivers and aquifers that furnish freshwater to coastal settlements. Warmer water temperatures and acidifying oceans can degrade the ecology of coral reefs and threaten the artisanal and commercial fisheries that nourish many seaboard communities. Climate threats to coastal regions reverberate well beyond the shoreline. Both farmland affected by saltwater incursion and fisheries menaced by higher ocean acidity feed populations distant from the water's edge. Ports, roads, rail lines, and other facilities that could be damaged by cyclones and storm surges serve producers and consumers located far inland. Refugees fleeing coastal flooding may be driven into neighboring countries or even further afield. Countering such risks will present both opportunities for international cooperation and possibilities for international conflict. Many of the coastal countries most vulnerable to global warming have contributed little to world emissions of greenhouse gases, and many possess limited capacity and few resources to counter or cope with prospective climate damages. These nations will require international assistance-technical, financial, and institutional to enable them to adapt to and rebound from the looming greenhouse impacts that they cannot avoid. The countries of the South Asian region from East Africa and the Arabian Peninsula to South are particularly susceptible to climate change's coastal impacts. One 2007 study assessing the climate threat to low-lying coastal settlements found that 6 of the 10 most vulnerable states worldwide ranked by total population living in exposed areas lie on the Indian Ocean.



Source: Book reference of Coastal zone and climate change-David Michel and Amit Pandya.

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