Ministry of Earth Science

Rise in Global Sea Levels

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According to the Fifth Assessment Report (AR5) of Inter-governmental Panel on Climate Change (IPCC) that global mean sea level had risen by 0.19m over the period 1901-2010 with a rate of global averaged sea level rise of 1.7mm/year between 1901 and 2010 within which an accelerated rate of 3.2mm/year was noticed between 1993 and 2010. The estimates made for the period 1993-2010, using the remote sensing satellite data and in-situ measurements of tide gauges, are found to be 3.2±0.5mm/year and 2.8±0.8mm/year, respectively. Recent studies by Indian Scientists reveal that the trend of sea level rise in the north Indian Ocean is slightly higher than the global estimate of 3.2 mm per year.

The possibility of sea level rise in the next ten years is about 3.2 cm in the north Indian Ocean, if the sea level acceleration remains similar to 3.2 mm per year.

A number of studies have been undertaken using remote sensing techniques in the past for assessment of the shoreline changes; mapping and delineation of entire coastal wetlands including beach vegetation, bio-shields, sea grass, opening of lagoons in certain cases and small islands etc. including their regeneration/preservation. The Integrated Coastal and Marine Area Management (ICMAM) Directorate of the Ministry of Earth Sciences (MoES) has carried out mapping and demarcating of multi-hazard coastal vulnerability for the entire coast of India. The Ministry of Environment and Forests and Climate Change (MoEFCC) has been implementing an Integrated Coastal Zone Management (ICZM) Plan for India instead of uniform Coastal Regulatory Zone (CRZ) framework. Accordingly, the Central Government has issued CRZ-2011 notification with a view to ensure livelihood security to the fisher communities and other local communities, living in the coastal areas, to conserve and protect coastal stretches, its unique environment and its marine area and to promote development through sustainable manner based on scientific principles taking into account the dangers of natural hazards in the coastal areas, sea level rise due to global warming. As a part of an Integrated Coastal Zone Management Project, the MoEFCC has been implementing the four components, namely, (i) National Coastal Management Programme; (ii) ICZM-West Bengal; (iii) ICZM-Orissa; (iv) ICZM-Gujarat. The national component includes (a) Demarcation of hazard line for mapping the entire coastline of the mainland of the country; (b) establishment of a National Centre for Sustainable Coastal Management (NCSCM) in Chennai with its regional centres in each of the coastal States/Union territories to promote research and development in the area of coastal management including addressing issues of coastal communities. India’s National Action Plan on Climate Change (NAPCC) outlines a strategy that aims to enable the country adapt to climate change and enhances the ecological sustainability of our development path. Appropriate protection measures arising out of the coastal erosion are addressed jointly by respective state governments and the Coastal Protection and Development Advisory Committee (CPDAC) of the Central Water Commission.

This information was given by Minister of State for Science & Technology and Earth Sciences Shri Y.S.Chowdary in written reply to a question in Rajya Sabha.

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