

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 3513
TO BE ANSWERED ON WEDNESDAY, MARCH 18, 2015**

RISING SEA LEVEL

3513. Prof. Saugata Roy:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has assessed the area / land expected to be affected by rising sea level due to global warming in the islands and coasts of the country; and**
- (b) if so, the details of the findings and the steps taken / being taken to rehabilitate the affected people in such an eventuality?**

ANSWER

**MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(SHRI Y.S. CHOWDARY)**

- (a) & (b) Sea level rise is a very slow phenomenon and is manifested globally with pockets of sea level rise/fall trends. Recently released Fifth Assessment Report (AR5) of Intergovernmental Panel on Climate Change (IPCC) suggests that global mean sea level has risen by 190 mm over the period 1901-2010. The satellite based linear trend during 1993-2011 is estimated to be 3.2 ± 0.5 mm/year, which is about 60% higher than the best estimate of 2.0 mm/year by the Intergovernmental Panel on Climate Change (IPCC), 2007 assessment report. However, the estimated sea level rise by the tide gauge records (of over 200) for the period 1993-2009 is found to be about 2.8 ± 0.8 mm/year.**

The MoEF had launched an Integrated Coastal Zone Management Project by establishing a Society of Integrated Coastal Management (SICOM). Under the project, SICOM would be implementing the four components, namely, (i) National Coastal Management Programme; (ii) ICZM-West Bengal; (iii) ICZM-Orissa; (iv) ICZM-Gujarat. National component includes (a) Demarcation of hazard line for mapping the entire coastline of the mainland of the country; (b) A National Centre for Sustainable Coastal Management (NCSCM) has been established within the campus of Anna University, 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. Sea level rise can have long term impact along the coastline. In general, it is expected that east coast of India will be more vulnerable than the west coast, because of its low lying nature and hence the tendency of coastal flooding will rise if the sea level rises significantly. A multi-hazard approach, that

fully accounts for holistic coastal vulnerability arising from the Earthquakes, Cyclones, Floods, Storm Surges and Tsunami etc, is considered for developing hazard resistant design criteria for construction of on-shore infrastructure like houses, buildings, special economic zones (SEZs), ports, construction of bridges for evacuation of habitants in low lying zones (including Sundarbans, Bay Islands etc.), industrial and other infrastructure corridors. Future projections of sea level involve uncertainties, which make it difficult to predict the impact with sufficient level of confidence. Quantifying the effects of heat and fresh water balance, as well as the large-scale circulation changes and basin geometry changes due to tectonic activities, through the use of observations and numerical models is crucial for understanding the subtle sea-level changes occurring in the north Indian Ocean. 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.
