

**GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA**

UNSTARRED QUESTION NO:518
ANSWERED ON:24.02.2009
SUBMERGENCE OF COASTAL AREAS
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Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether some coastal areas of the country have submerged due to rise in the level of the oceans;
- (b) if so, the details thereof;
- (c) whether the Government has made any assessment in this regard;
- (d) if so, the details and the outcome thereof; and
- (e) the steps taken/proposed to be taken by the Government to prevent loss to lives and property due to rise in the level of the ocean?

Answer

MINISTER OF THE STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF THE STATE IN THE MINISTRY OF EARTH SCIENCES (SHRI KAPIL SIBAL)

(a) The submergence is reported in two islands of Indian region in the Sundarbans delta system, namely Lohachara (inhabited) and Suparibhanga (un-inhabited). Another island Ghoramara has lost 41% of its land area between 1970-2000. Causes for such submergence may not be due to global warming as no significant sea level rise is recorded along the Indian coastline in last 40 years. The submergence might be attributed to normal deltaic subsidence along the east coast.

(b)-(d) Indian scientists have studied local sea level rise at various places from Indian Tide gauge data, which indicates the observed trends during the past century. These are as follows:

- (1) Cochin (1939-1991) = 1.2 mm/year
- (2) Vishakhapatnam (1937-1991) = 0.9 mm/year
- (3) Mumbai (1870-1990) = 0.8 mm/year
- (4) Sunderban (1985-2000) = 3.14 mm/year

Analysis of past tide gauge records for the Indian coastline regions shows that there is an average estimated sea level rise of 1.29 mm/year for the last 40 years.

As no comprehensive study has been made systematically in respect of coastal submergence by taking all possible factors and coastal zone processes into consideration, identification of islands under the threat of submergence has so far been not possible with confidence.

(e) Sea level rise is a relatively slow phenomenon occurring in the background of more dramatic manifestations like storm surges and tidal variations. Thus, in order to minimize the impacts viz. coastal erosion and coastal zone (covering land and EEZ) management, the Governments at Central and State levels have accorded higher priority to these aspects in their various Programmes.