

- (iii) Exemption from Income Tax for AIS officers and other officers from North East. The Resident Commissioners of the NE States have been advised to take up the matter with Department of Personnel and Training.
- (iv) Showcasing rich cultural heritage of North Eastern Region: A cultural event called, Songs and Dances of the North East was organized by the North Eastern Council in Delhi on 11th April, 2015.
- (v) Database for people coming from North Eastern States: The Resident Commissioners of the NE State Governments have been directed to build and maintain a database of people, including students and employed persons coming from North Eastern States.

#### **Rapid erosion in Visakhapatnam**

762. SHRIMATI RENUKA CHOWDHARY: Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether Government is aware that many of India beaches and its shoreline are witnessing rapid erosion especially in Visakhapatnam; If so, the details thereof; and
- (b) the immediate steps as well as long term measures taken by Government to prevent coastal erosion and also strength the boundary across the country ?

THE MINISTER OF STATE IN THE MINISTRY OF EARTH SCIENCES (SHRI Y.S.CHOWDARY): (a) Yes, Sir. Shoreline changes *i.e.* Erosion or accretion is ill natural phenomenon, occurs throughout the coast with varying magnitude due to natural processes and man-made interventions. These seasonally changing winds during the southwest monsoon (June - September) and northeast monsoon (December - February), generate wind-waves from different directions towards the beaches. Along the east coast of India, littoral drift occurs in the northerly direction for 8-9 months in a year, with the wave approaching the coast from the southwest. There is a southerly littoral drift for 3 to 4 months due to north-east monsoon waves. This variation in the littoral drift results in instability of beach where man-made structures disrupt the free-sand movement. As the net littoral drift is towards the north along the coast, any man-made structure would lead to accretion of sand on the south of the structure and erosion on its northern side. However, there is no general, large- scale beach erosion in India except where the sediment/sand transport has been, disturbed by human activities *viz.*, construction of breakwaters, groins, bulkheads etc. which cause erosion on the down-drift side and accretion on the up-drift side. On an average, about 40% of Indian coastline is facing varying degree of erosion. From last 25 years

data (1990-2014), it observed that about 25- 33% of Andhra Pradesh Shoreline is experiencing erosion of various magnitudes. The Visakhapatnam coast is also facing erosion since beginning specially Rama Krishna Beach and submarine Museum region due to lack of sand supply from southern side. About 50-55 m beach has been lost near submarine Museum region during 1990- 2014. The intensity of erosion has increased rapidly in recent past and about 20 m beach has lost in last 2 years. The Visakhapatnam Port Trust (VPT) has been trying to control the erosion by regularly nourishing the Rama Krishna Beach with the sand available in the sand trap at the outer harbor. In 2013 and 2014, the cyclone 'Phailin' and 'Hudhud' further hastened erosion of the Rama Krishna Beach, severely damaging the adjacent protection wall and road.

(b) Towards possible development of long-term solution, data collection and documentation of shore erosion has been carried out at different stretches in the States of Tamil Nadu (Poovar to Thuthukudi, Poompuhar, Kadalur Periyakuppam, Ennore), Kerala (around Vizhinjam and Varkala), AP (Visakhapatnam), Goa (Kerem). On a pilot scale, the nourishment of beach has been demonstrated at Puducherry. A shoreline change maps in 1 :25000 scale for the east coast of India using remote sensing data has been prepared. A Technical Criteria Atlas has been brought out a wave atlas of Indian coast to enable better assessment of beach processes and modeling efforts including setting up of a network of 19 tide gauges to understand the coastal processes and the effects of storm surges. Based on preliminary experiments on numerical model simulation studies at the recent erosion at Visakhapatnam, it is suggested that a combination of beach nourishment and an offshore submerged dyke to reduce the wave energy incident on the beach so that the natural beach front grows and the nourished sand is prevented from being washed away at the time of rough weather or cyclone passage. The Shoreline Management Plans for 14 locations along Karnataka, Kerala, Tamil Nadu, AP and Odisha coast have been prepared by studying the site specific erosion problems, including the prevailing coastal processes. These plans offer suitable management solutions to concerned State Government departments for implementation. The Government of Andhra Pradesh constituted a Committee *vide* G.O.Rt. No. 17, I and I (P.II) Department, dated 02.02.2015 to conduct a detailed study the reasons for the beach erosion and to take up short term and long term measures to ensure that there is a sustainable solution for the beach erosion at Visakhapatnam.

#### **Ways to improve natural habitat for cat family**

763. SHRI KIRANMAY NANDA: Will the Minister of ENVIRONMENT, FORESTS AND CLIMATE CHANGE be pleased to state:

(a) whether any study has been carried out so far suggesting ways and means to improve natural habitat for cat family for its better growth and breeding; and