

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCE
RAJYA SABHA
UNSTARRED QUESTION NO. 2140
TO BE ANSWERED ON 23rd July, 2009

LONG CRACK IN THE EARTH

2140. SHRI RAJKUMAR DHOOT:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether it is a fact that a 1 metre wide and 1 kilometre long crack in the earth took place in July, 2008 in Balasore district;
- (b) if so, the details thereof and reasons therefor;
- (c) does it indicate a possible earthquake in the near future in the local area; and
- (d) the precautions being taken to minimize any potential loss of life or property?

ANSWER

THE MINISTER OF STATE (INDEPENDENT CHARGE)
MINISTRY OF SCIENCE AND TECHNOLOGY, MINISTRY OF EARTH SCIENCES,
MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE, MINISTER OF STATE IN THE
MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND MINISTER OF
STATE IN THE MINISTRY OF PARLIMENTARY AFFAIRS
(SHRI PRITHVIRAJ CHAVAN)

- (a) Yes Sir. Cracks due to land subsidence took place in July 2008 close to the right bank of the river Burhablanga, Purana Balasore, Orissa. It happened at place called Kahnu Behera Sahi (latitude 21° 29' 02"N; longitude 86° 57' 25"E). As per the Geological Survey of India (GSI) team that visited the affected site on 25th July 2008 noted that crescent shaped cracks of about 5-27m wide and 200m long were observed.
- (b) The details of the land subsidence and the reasons thereof, based on the assessment of various visiting teams are given below:
 - 1. This was a common event that naturally happens with meandering rivers in alluvial ground (right side bank of the river prone to erosions).
 - 2. All the crescent shaped depressions are bounded by major planes of failure, with a number of radiating cracks at high angles to the major planes of failure, have also been recorded at the affected site.
 - 3. The development of the subsidence and cracks are caused by deepening of river channel by turbulent flow/eddies possibly caused by collision of flowing water against the spurs built across the river leading to the scouring of the material on the right bank resulting in removal of material from the toe of the bank as weeks earlier the river experienced heavy flooding.
 - 4. After the water level dropped down, sudden drainage of ground water from the failed zone has taken place leading to the shrinkage of soil mass, causing formation of fissures/cracks and subsidence of the ground between the cracks.
- (c) No Sir. Significant seismic activity is neither reported nor is any apparent signature of regional fracturing, reactivation of paleo-channel or neotectonic activity in the area reported.
- (d) The following measures were suggested to the local authorities by the GSI for minimizing any potential loss of life or property:
 - 1. Prevent construction of heavy structures in close proximity of the right bank of the river
 - 2. Suggested to construct suitable spurs of adequate height at the right bank
 - 3. Minimize urbanization alongside crescent shaped bends of the river from safety point of view
