GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION NO - 834
ANSWERED ON - 09/02/2021

LANDSLIDE SITUATION IN TAMILNADU

834.SHRI P. WILSON:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) Whether Government has conducted any survey on increasing cases of landslides across the country due to cyclones and floods , especially in Tamil Nadu, if so, the details thereof;
(b) the details of Cyclone Warning Centres (CWSs) functioning in different parts of the State;
(c) whether Government has proposed to establish more CWCs in view of increasing number of cyclones in the State and if so, the details thereof, district-wise; and
(d) whether Government has any plan to develop the regional Landslide Early Warning System (LEWS) in different parts of the State, if so, the details thereof?

ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)

(a) Yes Sir. Being the national nodal agency for landslide studies, the Geological Survey of India (GSI) has been continuously engaged in varied types of landslide investigations in various parts of the country including Tamil Nadu.

- Since decades, GSI has been involved in studying landslides for the entire landslide-prone areas in Western Ghat region including the states of Kerala, Tamil Nadu, Karnataka, Goa and Maharashtra using various multi-scale landslide hazard analysis tools starting from 1: 50,000 scale landslide susceptibility mapping to the site specific, slope-scale landslide investigations, including a recent attempt of experimental regional landslide early warning system (LEWS) at Nilgiri district, Tamil Nadu.
- In Tamil Nadu, GSI first prepared the 1: 50,000 landslide hazard zonation map for the Nilgiris district immediately after studying the impacts of landslide events of 1978 and

1979. The Nilgiris district administration has so far been using the above spatial geoinformation of GSI for land use zoning in Nilgiris.

- Since 2014, GSI is conducting National Landslide Susceptibility Mapping (NLSM) program for entire 4.28 lakh sq. km. landslide prone hilly areas of the country on 1: 50000 and till date 3.84 lakh sq. km. area has been covered out of which entire hilly/ mountainous terrains of Tamil Nadu (10,550 sq. km.) has been completed. The landslide susceptibility map categorises vulnerable hill slopes into high, moderate and low based on the likelihood of landslide propensity, and can be used as a vital geo-information tool for land-use zoning regulations in landslide prone fragile slopes.
- The above spatial geodata and the national landslide inventory including Tamil Nadu are already uploaded on GSI's Bhukosh Map Portal (https://bhukosh.gsi.gov.in/Bhukosh/Public) for free downloading and use by any stakeholder.
- In 2016, GSI has also published salient details of all its landslide surveys and investigations carried out so far since 1980 till 2014, in the form of a Special Publication (GSI Special Publication 108) titled as "Landslide Compendium of Southern Parts of Western Ghats", which is being referred by many stakeholders/ researchers.

(b) In order to cater to the needs of Cyclone Warning Services and Marine weather services, India Meteorological Department (IMD) has established seven Warning Centres covering the east & west coasts of our country. Among these, the Area Cyclone Warning Centre (ACWC) located at Chennai caters to the needs of Tamil Nadu. The area of responsibility of ACWC Chennai follow;

Centre	Coastal area*	Maritime State/UT
ACWC Chennai	State: Tamil Nadu UT: Puducherry	State: Tamil Nadu UT: Puducherry

*Coastal strip of responsibility extends upto 75 km from the coast line.

(c) No, Sir. There is no plan for establishing more number of CWCs in the state of Tamil Nadu as the requirements of the entire coastal belt of this state is covered by the existing centre mentioned above.

(d) Yes. GSI is currently engaged in an international project – LANDSLIP (Landslide multi-hazard risk assessment, preparedness and early warning in South Asia integrating meteorology, landscape and society) since 2017, to develop an advanced and globally contemporary technology of regional landslide early warning system (LEWS) for India.

- In the frame of the LANDSLIP research, LANDSLIP and GSI have developed a prototype LEWS model, which is currently under testing at two test sites (Darjeeling district in West Bengal and Nilgiris district in Tamil Nadu) since 2020-monsoon. LANDSLIP (www.landslip.org) is a multi-consortium research group involving Geological Survey of India (GSI), British Geological Survey (BGS), UK Met Office, CNR-IRPI, Italy, Kings College, London, Newcastle University, UK, Practical Action (UK and India) and also the Amrita Vishwa Vidyapeetham, India engaged in this research, and will work together for this project till March 2022.

  The above Regional LEWS tool depends on rainfall forecast and rainfall thresholds on a regional scale (down to sub-division/ block level) for issuing both short range (upto 72 hours) and medium range (3-10 or 15 days) landslide forecasts and for which GSI has already started long-term institutional partnerships with India Meteorological Department (IMD), National Centre for Medium Range Weather Forecasting (NCMRWF), National Remote Sensing Centre (NRSC), and concerned SDMAs of the application States for future similar endeavour. The ultimate aim of GSI is to arrive at an operational regional LEWS in phases for different landslide prone States in the country to minimise landslide risks and losses.

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