GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOKSABHA
UNSTARRED QUESTION NO. 2142
TO BE ANSWERED ON WEDNESDAY, 2ND AUGUST, 2023

RESEARCH ON LANDSLIDES AND SOIL EROSION

2142. SHRI PRADYUT BORDOLOI:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether the Government has conducted any study to identify natural and traditional methods for reducing landslides and soil erosion in hilly areas;
(b) if so, the details thereof and if not, the reasons therefor;
(c) whether the Ministry has collaborated with local communities to gather insights and knowledge on indigenous practices for landslide and soil erosion control and if so, the details of such collaborations;
(d) the appropriate steps taken or likely to be taken for promoting sustainable land use practices and land management techniques to reduce the above-highlighted problem; and
(e) the details of the funds allocated for research and development on addressing landslides and soil erosion?

ANSWER
THE MINISTER OF EARTH SCIENCES
(SHRI KIREN RIJIJU)

(a) to (b) The Geological Survey of India (GSI), under administrative control of Ministry of Mines, being the nodal agency for landslide studies, carries out landslide studies on various scale (meso- scale, macro-scale & site specific) in all the landslide prone states of the country and short- & long-term recommendations are suggested for landslide management based on the site conditions wherein local traditional methods as well as available best practices are also suggested. Further, geoscientific inputs are recommended for the areas covered under mesoscale and macro scale mapping programmes for use in regional and local land-use planning.

(c) GSI carries out all the landslide investigations in field and GSI geoscientists interact extensively with the local community in understanding the past signatures and slope modification pattern of the terrain and gather relevant valuable information for identifying the causes and suitable recommendations are documented which are communicated to state authorities for landslide management.

(d) GSI does not carry out work related to promoting sustainable land use practices and land management techniques.However, GSI carries out field and laboratory-based landslide studies as per approved annual field season programme. For effective landslide management, data on landslide susceptibility are collected at different scales for regional to site-specific land planning and for spreading awareness among communities. Landslide Awareness/Contact programmes are also being conducted such as Pre-disaster studies (multi-scale landslide susceptibility mapping); Post-disaster studies (landslide inventory mapping and site specific detailed geological mapping, slope stability analysis and landslide monitoring), and Regional landslide forecasting.

As per National Landslide Susceptibility Mapping (NLSM) of GSI on 1: 50,000 scale, 4.3 lakh sq.km is mapped of the landslide prone area in India. These landslide data were collected by GSI through onsite field investigations under the Post-Disaster Studies programme taken up annually in all the landslide prone States/ UT as per GSI's Standard Operating Procedure and in response to the requests received from the concerned State Governments.Under LANDSLIP project,GSI has developed an experimental regional Landslide Early Warning System (LEWS) based on rainfall thresholds for two pilot study areas viz. Darjeeling district of West Bengal and the Nilgiris district of Tamil Nadu. Since 2020, GSI started issuing daily landslide forecast bulletins during monsoon to the district administrations in these two pilot areas. Now GSI is in the process of extending Susceptibility Maps to classify landslide prone hilly terrains of the country into High, Moderate and Low zones based on proneness to land sliding. GSI has collected data of major landslides that occurred between 2015 and 2022 in different States/ UT, which have impacted lives. GSI has already extended the Landslide Early Warning System in Kalimpong district, West Bengal and Rudraprayag district, Uttarakhand and started issuing daily landslide forecast bulletins during monsoon to the district administrations(Kalimpong - from July 2021; Rudraprayag from August 2022). GSI has also initiated R & D activities for developing regional landslide forecasting systems.

(e) The details of fund allocation and expenditure by GSI on various specialized investigations including landslide studiesfor last 3 years and current year are as follows:

Budget (in lakhs)	**2020-21**	**2021-22**	**2022-23**	**2023-24 (upto 30.06.2023)**
Budget Grant	190.00	300.00	300.00	340.00
Expenditure	182.82	292.33	291.15	67.56

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