

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**LOK SABHA**  
**UNSTARRED QUESTION NO. 6546**  
TO BE ANSWERED ON 06.04.2018

**Melting of Himalayan Glaciers**

6546. DR. BHARATIBEN D. SHYAL:  
SHRI KIRTI AZAD

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether Himalayan glaciers are melting rapidly;
- (b) if so, the details thereof;
- (c) whether the Kedarnath disaster happened due to melting of glaciers and if so, the details thereof;
- (d) whether the Government has conducted any study in this regard; and
- (e) if so, the details and the outcome thereof and the steps taken by the Government in this regard?

**ANSWER**

**MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE**  
**(DR. MAHESH SHARMA)**

(a) and (b) Indian Space Research Organization (ISRO) has monitored the glacier advance and retreat of 2018 glaciers, across the Indian Himalayan region using satellite data of 2000-01 to 2010-11. The study shows that 87% of glaciers showed no change, 12% glaciers retreated, and 1% glaciers have advanced.

(c) Kedarnath disaster in June 2013 cannot be directly attributed to the melting of glaciers. The combined effect of very heavy rainfall on two consecutive days and subsequent bursting of the 'Chorabari' lake which was located between the valley wall and lateral moraine of the glacier may have contributed to the disaster.

(d) and (e) A team from Geological Survey of India (GSI) visited Kedarnath area during September 2013 for geotechnical and glaciological evaluation. They also undertook Ground Penetrating Radar (GPR) survey for the assessment of bedrock/ overburden profile in October 2013. The survey indicated undulatory topography below the man-made platform of the temple. Further, a number of institutions such as Department of Space, Wadia Institute of Himalayan Geology (WIHG), University of Kashmir, University of Jammu, Sikkim University, Jawaharlal Nehru University and many other institutes are engaged in monitoring and conducting research in the area of glaciology. The Government has also setup a Center for Glaciology at WIHG, funded by the Department of Science and Technology, to carry out detailed investigations of glacier masses in the Himalayan Region.

Further, the government is implementing the National Action Plan on Climate Change (NAPCC) with a view to enhance the ecological sustainability of India's development path and address climate change in all regions of the country. NAPCC comprises, inter alia, of eight National Missions including National Mission for Sustaining the Himalayan Eco-system (NMSHE).

NMSHE is aimed at evolving management measures for sustaining and safeguarding the Himalayan glaciers and mountain ecosystem. The mission includes enhanced monitoring of Himalayan ecosystem through establishment of monitoring network, promoting community-based management, human resource development and strengthening regional cooperation. Government has prepared guidelines entitled "Governance for Sustaining Himalayan Ecosystem", (G-SHE), which have been shared with all state governments in the Himalayan region. All Himalayan states have also prepared their respective State Action Plans to address the state specific issues.

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