

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 2277**  
TO BE ANSWERED ON 09.08.2021

**Maintaining the fragile ecology of Himalayas**

2277. DR. C.M. RAMESH:

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

- (a) the details of steps Government has taken to maintain the fragile ecology of the Himalayas; and
- (b) whether any monitoring mechanism by inducting scientists has been set up to take note of the changes taking place in glaciers, if so, the details thereof and if not, the reasons therefor?

**ANSWER**

**MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE**  
**(SHRI ASHWINI KUMAR CHOUBEY)**

- (a) The Ministry of Environment, Forest and Climate Change established the G.B. Pant National Institute of Himalayan Environment as a focal agency to advance scientific knowledge and to evolve integrated management strategies for conservation of biodiversity and natural resources in the Indian Himalayan Region.

The Ministry has also launched the National Mission on Himalayan Studies (NMHS) in 2015-16 as a Central Sector Scheme to support the sustenance and enhancement of the ecological, natural, cultural, and socio-economic capital assets and values of the Indian Himalayan Region (IHR).

Other initiatives of Government include the National Action Plan on Climate Change (NAPCC) outlining eight National Missions on climate change. Two out of eight missions namely, (i) National Mission for Sustaining Himalayan Ecosystem (NMSHE); and (ii) National Mission on Strategic Knowledge for Climate Change (NMSKCC) are dedicated to ecological studies under the Department of Science & Technology (DST).

- (b) Government of India through its various organizations is carrying out scientific studies to monitor the changes in Himalayan glaciers. In this regard, Ministry of Earth Sciences (MoES) through its autonomous centre National Centre for Polar and Ocean Research (NCPOR) is undertaking long-term monitoring of representative glaciers in western Himalayas since 2013.

Towards this, a small dedicated team has been established at NCPOR and a high altitude station called Himansh has been established in 2016 at Lahaul-Spiti region of Himachal Pradesh. The Centre is undertaking a coordinated initiative called Himalayan Cryosphere Observations and Modelling (HiCOM) in collaboration with various academic institutions in the country. This project aims to understand the glacier behaviour and its hydrological response across the Himalaya.

Indian Space Research Organization has been studying Himalayan Glaciers at different time frames. Changes in area of glaciers for the time period of year 1962 and 2001-05 were mapped for 2630 glaciers. Glacier extents for year 1962 were taken from Survey of India topographical maps on 1:50000 scale as reference and that of 2001-05 time frame were taken from satellite data. This study showed a total loss of 13.4% in area of glaciers. Monitoring of change in extents of 2018 glaciers was carried out from IRS LISS III data of year 2000-02 and 2010-11. The monitoring shows that 87% of the glaciers showed no change, 12% retreated and 1% glaciers have advanced.

Net change in glaciated area varies from one region to another. In a recent study 5234 glaciers were monitored between the years 2001 and 2017-18 across Himalayan-Karakoram region from Kashmir to Sikkim using satellite data. In Karakoram Region (North of Indus River) gain in area of 0.056% has been observed in the area coverage of 17903 km<sup>2</sup>. The loss is observed in rest of Himalayan Region which varies from 0.751% to 2.32%.

A Centre of Glaciology has been initiated by Department of Science and Technology at Wadia Institute of Himalayan Geology, Dehradun to monitor the health of the glaciers in Indian Himalayan Region and suggest glacier conservation measures. The Institute is monitoring Gangotri, Dokriani, Chorabari, Dunagiri-Bangni, Pindari, Kafni glaciers in Uttarakhand and Pensilungpa, Durung Darang, and Prakachik glaciers in Ladakh. Geological Survey of India has also conducted studies on melting of the glaciers by assessment of mass balance studies on nine glaciers and also carried out monitoring the recession/ advancement of 76 glaciers.

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