

**GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
LOK SABHA  
UNSTARRED QUESTION NO 3184  
TO BE ANSWERED ON 06.12.2019**

**HIMALAYAN GLACIERS**

**3184. SHRIMATI PRATIMA MONDAL:**

Will the Minister of SCIENCE AND TECHNOLOGY विज्ञान और प्रौद्योगिकी मंत्री be pleased to state:

- (a) the details of research projects conducted on 'Himalayan Glaciers' along with amount spent on them in the last three years and the current year;
- (b) whether the researches have indicated that the glaciers are receding gradually, if so, the details thereof; and
- (c) the details of the statistical data showing the loss of glaciers since the last decade along with the efforts made by the Government to protect the Himalayan Glaciers from receding?

**ANSWER**

**MINISTER OF HEALTH AND FAMILY WELFARE; MINISTER OF SCIENCE AND TECHNOLOGY AND MINISTER OF EARTH SCIENCES  
(DR HARSH VARDHAN)**

**स्वास्थ्य और परिवार कल्याण मंत्री: विज्ञान और प्रौद्योगिकी मंत्री: और पृथ्वी विज्ञान मंत्री  
डॉ. हर्ष वर्धन**

(a) The research projects carried out on Himalayan Glaciers mainly focus on Himalayan Cryosphere Studies, Himalayan Snow and Glacier Studies, Geodynamics and Hydro chemical Studies of Gangotri Glacier System, Garhwal Himalaya Glacial Lakes & Glacial Lake Outburst Flood (GLOF) in Western Himalayan region and Study of Glacio-hydrological Processes at Naradu Glacier, Western Himalaya etc. The total amount spent in these projects during last three years and current year is about INR 14.90 Crore.

(b) The mass balance studies conducted for some Himalayan glaciers revealed that majority of Himalayan glaciers are receding at varying rates because of many reasons including climate change. The rate of recession has witnessed an upward trend in the second half of the last century though no abnormal trend has been documented. The studies have also shown that large glaciers with an area of more than 10 square kilometers are unlikely to get affected appreciably in the coming years. However, small glaciers of less than 2 square kilometer are likely to show rapid changes.

(c) The research indicated that the glaciers in the Indian Himalayan Region have exhibited shrinkage in length, area, thickness and mass with regional variations during the last few decades coinciding with the observed warming in the region. The glaciers situated at higher altitudes are more or less stable. Based on a compilation of area change studies, eastern Himalaya glaciers have tended to shrink faster than glaciers in the central and western Himalaya.

While glaciers cannot be protected from receding through direct interventions, the Government has made several efforts to reduce the impact of climate change through several adaptation and mitigation measures that include a number of programmes under national missions on climate change as part of National Action Plan on Climate Change (NAPCC) and actions initiated under other programmes.

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