GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. 1119
TO BE ANSWERED ON TUESDAY, JULY 02, 2019

STEPS TO PRESERVE THE HIMALAYAN GLACIERS

1119. DR. VINAY P. SAHASRABUDDHE:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) **what research has been carried out for Cryosphere Studies in Himalayas in the last three years;**
(b) **what are the observations and conclusions derived from the conducted research and have any suggestions been made for the steps to be taken to preserve the Himalayan Glaciers; and**
(c) **the number of people that have been engaged for purpose of conducting the research in the last three years?**

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

(a) **The National Centre for Polar and Ocean Research (NCPOR) under the Ministry of Earth Sciences (MoES) has undertaken studies in the Western Himalaya in Chandra basin in Lahaul-Spiti (Himachal Pradesh) since 2013. A total of six glaciers namely Sutri Dhaka, Batal, Bara Shigri, Samudra Tapu, Gepang Gath and Kunzum of this basin are monitored for mass, energy and hydrological balance. NCPOR has established a highaltitude research station named 'Himansh' in Himalaya at 4000 m altitude at Sutri Dhaka, a remote location in Lahaul-Spiti district of Himachal Pradesh.**
(b) **The studies carried out by NCPOR in Chandra basin indicates varying rates of retreat of these glaciers in the range 13 to 33 m per year. The rate of melting varies from glacier to glacier depending on topography and climatic variability of the region. Mass balance measurements at Batal and SutriDhaka glaciers during peak ablation revealed the role of debris in influencing the ice mass losses. Debris of thickness above 2 cm have reduced the melting rates up to 70%, whereas the debris cover of below 2cm thickness has accelerated melting up to 10% of the total melting. Since the glacier health is affected by both natural and human factors, efforts towards reduction in greenhouse gases, aerosols etc., are critical towards conservation of the glaciers in Himalaya.**
(c) **Six scientists from NCPOR are involved in the research of Himalayan glaciers.**

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