

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 1800**  
TO BE ANSWERED ON 17.03.2022

**Study on vulnerability of Himalayan ecosystem**

1800. Dr. C.M. RAMESH :

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

- (a) whether Hindu Kush Himalayas (HKH) are experiencing rise of temperature and its likely increase in future may lead to hydrological and agricultural impact in the region, the details thereof; and
- (b) whether Government propose to constitute a Committee of Experts to make scientific study of the vulnerability of the Himalayan ecosystem, 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) As per the report titled 'The Hindu Kush Himalaya Assessment – Mountains, Climate Change, Sustainability and People' published by the International Centre for Integrated Mountain Development (ICIMOD) in 2019, even if global warming is kept to 1.5 °C, warming in the Hindu Kush Himalaya (HKH) region is projected to be at least 0.3 °C higher, and in the northwest Himalaya and Karakoram at least 0.7°C higher. Such increased warming is projected to trigger a multitude of impacts, such as biodiversity loss, increased glacial melting, and less water availability—all of which may impact livelihoods and well-being in the HKH.

As per information received from ICIMOD, the changes in temperature and precipitation patterns are likely to induce significant impact on agriculture and food systems in the HKH. Rise in temperature will impact productivity of crops and livestock. The temperature increase is likely to reduce the water productivity in agriculture due to increased evapotranspiration and consumptive use of water for crops. Rise in temperature will also further increase the incidence of pest attacks on crops. The increased incidence of heavy precipitation during critical stages of crop lifecycle are also likely to cause direct damage to crops.

(b) The vulnerability of Himalayan ecosystem is being studied under the National Mission for Sustaining the Himalayan Ecosystem (NMSHE) and the National Mission on Strategic Knowledge for Climate Change (NMSKCC). Both these missions come under the aegis of National Action Plan on Climate Change (NAPCC) and are being implemented by the Department of Science and Technology (DST). Various assessments on the vulnerability of Himalayan Ecosystem are carried out as a part of these missions by DST.

Further, under NMSHE, State Climate Change Cells/Centres (SCCCs) have been established in 12 Himalayan States/UTs viz. Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Nagaland, Manipur, Meghalaya, Mizoram, Tripura, Sikkim, West Bengal and Assam. These SCCCs have been mandated to provide assistance to States/UTs to take up vulnerability and risk assessment, capacity building programmes and public awareness programmes to address sustenance of Himalayan ecosystem and for implementation of actions selected for sustainable development by the State as part of their State Action Plans for Climate Change (SAPCC). In addition, research & development projects have been supported to address issues related to Himalayan ecosystem and climate change adaptation strategies.

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