

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No.3959
TO BE ANSWERED ON FRIDAY, MARCH 19, 2021**

DEPTH OF HIMALAYAN GLACIERS

3959. SHRI DUSHYANT SINGH:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government plans to measure the depth of Himalayan glaciers to assess water availability, if so, the details of the authority undertaking and implementing the mission;
- (b) the area of the Himalayas which will be explored under the mission along with the details of the phase wise implementation of the project;
- (c) the quantum of funds proposed to be allocated for the research along with the details of the technology likely to be used in the mission;
- (d) whether India possesses indigenous technology for exploring the depth of Himalayas, if so, the details thereof;
- (e) if not, the details of the countries from which such technology will be borrowed along with the cost of the same; and
- (f) the details of the tenure of the project along with the number of personnel proposed to be deployed for the project?

ANSWER

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

- (a) Yes, Sir. A proposal has been initiated by National Centre for Polar and Ocean Research (NCPOR) Ministry of Earth Sciences to estimate thickness of Himalayan glaciers using innovative airborne radar surveys in collaboration with established Indian researchers in India and abroad.
- (b) A pilot study is proposed in Lahaul-Spiti basin of Himachal Pradesh for customizing the technique and methods in initial phase followed by Airborne radar surveys across representative sub-basins of Indus, Ganga and Brahmaputra basins in the next phase.
- (c) No specific funds have been allocated pending the finalization of project, Airborne radar surveys are proposed to estimate the thickness of Himalayan glaciers.
- (d) Different techniques like geophysical techniques and Ground Penetrating Radar (GPR) profiling have been employed for glacier depth assessment by Geological

Survey of India (GSI). Indian Space Research Organization (ISRO) carries out Research and Development study to estimate thickness of major Himalayan glaciers using remote sensing based methods. Design, fabrication and testing of compact and lightweight radar and antennas suitable for helicopter-based operations are proposed for which sufficient expertise is available in India and with overseas Indians.

- (e) Does not arise.
- (f) The tenure of the project and the number of project personnel are not yet finalised.
