

**GOVERNMENT OF INDIA**  
**MINISTRY OF EARTH SCIENCES**  
**LOK SABHA**  
**UNSTARRED QUESTION NO. 2001**  
**TO BE ANSWERED ON FRIDAY, 30<sup>TH</sup> JULY, 2021**

**3<sup>RD</sup> ARCTIC SCIENCE MINISTERIAL**

**2001. DR. SANJEEV KUMAR SINGARI:**  
**SHRI CHANDRA SEKHAR BELLANA:**  
**SHRI SRIDHAR KOTAGIR:**

**Will the Minister of EARTH SCIENCES be pleased to state:**

- (a) whether the country has recently participated in the 3rd Arctic Science Ministerial for discussing research and cooperation in the Arctic region;
- (b) if so, the details thereof;
- (c) whether the Government aims to contribute to observing systems in the Arctic by remote sensing;
- (d) if so, the details thereof;
- (e) whether the Government has launched the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite mission, in collaboration with USA; and
- (f) if so, the details thereof?

**ANSWER**  
**THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR**  
**MINISTRY OF SCIENCE AND TECHNOLOGY**  
**AND EARTH SCIENCES**  
**(DR. JITENDRA SINGH)**

- (a) Yes, Sir.
- (b) India participated in the 3<sup>rd</sup> Arctic Science Ministerial (ASM3) meeting, jointly organised by Iceland and Japan and virtually hosted by Japan, for discussing research and cooperation in the Arctic. The then Hon. Minister of the Earth Sciences, Dr. Harsh Vardhan led the Indian team, with Secretary, Ministry of Earth Sciences, and Scientists from MoES and NCPOR as participants in the meeting.
- (c&d) India plan to launch NISER (NASA-ISRO Synthetic Aperture Radar) satellite, a joint ISRO-NASA mission, with the goal to make global measurement of land surface changes using advanced radar imaging.
- (e) NASA-ISRO Synthetic Aperture Radar (NISER) has not been launched yet. NISER is proposed to be launched in early 2023.
- (f) NISAR is a joint Earth-Observation mission between ISRO and NASA for global observations over all land masses including Polar cryosphere and Indian Ocean region. It is a dual band (L-band and S-band) Radar imaging mission with capability of full polarimetric and interferometric modes of operation to observe minor changes in land, vegetation and cryosphere. NASA is developing L-band SAR and associated systems and ISRO is developing S-band SAR, spacecraft bus, the launch vehicle and associated launch services. The major scientific objectives of the mission are to improve understanding of the impact of climate change on Earth's changing Ecosystems, land and coastal processes, land deformations and Cryosphere.

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