

PARLIAMENT QUESTION: STRENGTHENING POLAR AND OCEAN RESEARCH

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The construction of new Polar Bhavan and Sagar Bhavan facilities has strengthened India's research capabilities in the Arctic and Antarctic regions. The newly constructed Polar Bhavan and Sagar Bhavan facilities significantly strengthen India's research capabilities in the Polar regions. Different types of samples collected during the annual scientific expeditions to the Arctic, Antarctic, Southern Ocean and Himalayas are being processed at the advanced laboratories and analytical instruments housed at the Polar Bhavan enabling cutting-edge studies in polar geosciences, deep-ocean mineral exploration, and climate dynamics. The '*Science on a Sphere*' facility and upcoming Polar and Ocean Museum promote scientific outreach and global collaboration. Sagar Bhavan's ultra-low temperature ice-core labs, cold storage, and metal-free clean rooms support critical climate and cryosphere research, enabling precise geochemical and isotope analyses. Collectively, these facilities strengthen India's institutional capacity to conduct advanced scientific research, preserve valuable cryospheric samples, and promote knowledge dissemination in the field of polar and ocean studies.

The Polar and Sagar Bhavan facilities shall support India's long-term Polar Research Programme and global climate commitments by:

- providing support for integrated scientific investigations across the Antarctic and Arctic regions, while also complementing research efforts in the Himalayan cryosphere and surrounding oceans.
- providing advanced laboratory capabilities, infrastructure will enable interdisciplinary studies in glaciology, climate science, polar biology, atmospheric sciences, and oceanography, thereby reinforcing India's capacity to generate high-quality scientific knowledge on polar and cryospheric processes.
- systematically managing cryospheric sample repository that will ensure the secure preservation of valuable samples collected from polar and high-altitude environments. This strengthened repository will facilitate long-term monitoring, comparative analyses, and future research, thereby expanding opportunities for collaborative scientific investigations at national and international levels.

Collectively, these facilities will play a pivotal role in advancing India's long-term Polar Research Programme, supporting evidence-based understanding of climate variability and cryosphere dynamics. The strengthened research capacity will also contribute meaningfully to India's global climate commitments, including improved climate observations, data sharing, and international scientific cooperation in addressing the challenges posed by climate change.

India is significantly advancing its polar and ocean research through the 'Make in India' initiative. Currently, the Ministry of Earth Sciences (MoES) is building a new Oceanographic Research Vessel (ORV) at the M/s Garden Reach Shipbuilders and Engineers (GRSE), Kolkata, with financial outlay of Rs 900 Crores and tentatively scheduled for commissioning in early 2028. The vessel is designed to bolster marine mineral exploration in the Indian Ocean region.

Additionally, the Ministry has received an in-principle approval to build a Polar Research Vessel (PRV), an Oceanographic Research Vessel (ORV), and a Fishery Oceanographic Research Vessel (FORV) with a financial outlay of Rs 4319.40 Crores. As proposed, the vessels are planned to be inducted stage wise beginning in the year 2030. The PRV is envisioned to undertake multidisciplinary Annual Indian Scientific Expeditions to Antarctic and Indian scientific endeavours in the polar and ocean realm throughout the year, the ORV shall facilitate the oceanographic research operations, throughout the year in Indian Ocean region and beyond, as replacement for the ageing (40+ year old) vessel ORV Sagar Kanya and the FORV shall augment fishery research operations, throughout the year in Indian Ocean region and beyond, as replacement for the ageing (40+ year old) vessel FORV Sagar Sampada.

This information was submitted by Union Minister of State (Independent Charge) for Earth Sciences and Science & Technology, Dr. Jitendra Singh in Rajya Sabha on 19 March 2026.

NKT/JKP

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