

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION NO. 998
ANSWERED ON 13/02/2025

DEEP OCEAN MISSION

998. SHRI NARAYANA KORAGAPPA:
MS. KAVITA PATIDAR:
SMT. KIRAN CHOUDHRY:
DR. MEDHA VISHRAM KULKARNI:
SHRI MAYANKBHAI JAYDEVBHAI NAYAK:

Will the Minister of **Earth Sciences** be pleased to state:

- (a) the details about Government's plan to send a human to the deep sea in early 2026;
- (b) the manner in which this mission aligns with country's broader scientific and exploratory goals; and
- (c) the technological advancements or research being prioritised to ensure the success of the mission?

ANSWER

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

- (a) The Ministry of Earth Sciences, through the National Institute of Ocean Technology (NIOT), Chennai, is developing a manned submersible 'Matsya 6000', which aims to carry three people to a depth of 6000 meters in the ocean with a suite of scientific sensors for ocean exploration and observation. The manned submersible Matsya 6000 is likely to be realised by 2026.
- (b) The technologies developed under the Deep Ocean Mission will expand the country's capability for deep-sea man-rated vehicle development and pave the way for sustainable deep-sea exploration and harnessing of deep-sea living and non-living resources. The deep-sea exploration includes biodiversity, survey and mineral resources. Apart from the benefits of scientific research and technological empowerment, this mission has immediate spin-offs in underwater engineering innovations, asset inspection and the promotion of ocean literacy.
- (c) Under the Deep Ocean Mission, a manned submersible Matsya 6000 is being developed to house a 2.1-metre internal diameter Titanium alloy personnel sphere for safely carrying humans to a 6000 m depth. The Titanium alloy personnel sphere is being integrated in collaboration with ISRO. The manned submersible is to be equipped with subsystems for buoyancy management enabling descent/ascent, power, and control systems, maneuvering propellers, subsea intervention manipulators, navigation and positioning devices, data and voice communication systems, on-board energy storage batteries, as well as systems for emergency support. It is designed to enable continuous operations at 6000 m depth for up to

12 hours with an emergency endurance of up to 96 hours for conducting deep water observation and exploration. Human Support and Safety System, which is a critical need for three humans, has been realized for the acclimatization and usage during routine and emergency scenarios. The deep-sea activities, exploration of deep-sea living and non-living resources, are being undertaken in accordance with the guidelines of UN governing bodies. The development of ocean climate change advisory services relies on robust data acquisition and analysis for deriving projections of sea level change, intensity of cyclone, storm surge, and waves and their impacts on associated coastal erosion and inundation in the projected climate. The acquisition of a multidisciplinary research vessel is in progress. Expansion of capacity building in marine biology in the country is also being prioritized by setting up a dedicated Advanced Marine Station for Ocean Biology (AMSOB).
