

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOKSABHA
UNSTARRED QUESTION NO. 3555
TO BE ANSWERED ON WEDNESDAY, 22nd MARCH, 2023**

SAMUDRAYAAN MISSION

**3555. SHRI VINOD KUMAR SONKAR:
SHRIMATI APARUPA PODDAR:
SHRI BHOLA SINGH:
SHRI RAJVEER SINGH (RAJU BHAIYA):
SHRI RAJA AMARESHWARA NAIK:
DR. JAYANTA KUMAR ROY:
SHRIMATI SANGEETA KUMARI SINGH DEO:**

Will the Minister of Earth Sciences be pleased to state:

- (a) whether the Government has planned Samudrayaan mission for the exploration of deep sea resources;
- (b) if so, the details thereof including the objectives of the mission;
- (c) whether the Matsya 6000 vehicle is being developed for the Samudrayaan mission;
- (d) if so, the details thereof;
- (e) the other steps being taken by the Government for the exploration of deep sea and the projected timeline for the said mission;
- (f) whether it is a fact that India spends 0.7 per cent of Gross Domestic Product (GDP) on research and development;
- (g) if so, the achievements and progress of the first phase of 'Samudrayaan'; and
- (h) the proposal for deep sea exploration in the country in the next five years?

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

- (a) Yes Sir.
- (b) Major objective of the Samudrayaan Mission is to design, and develop one working prototype and one final Manned Submersible rated for 6000 meter water depth.
- (c) Yes Sir.

- (d) Under the Deep Ocean Mission program, National Institute of Ocean Technology (NIOT) (an autonomous institute of the Ministry of Earth Sciences, Government of India) is indigenously developing a manned scientific submersible Matsya 6000 for enabling deep-ocean human missions up to 6000m water depth. Matsya 6000 is designed to carry 3 humans for a period of 12h and shall have an emergency endurance of 96h. Matsya 6000 has a 2.1 metre internal diameter Titanium alloy personnel sphere for housing humans and equipped with subsystems for buoyancy management enabling descent/ascent, power and control systems, manoeuvring 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.
- (e) - (f) The technologies developed under the mission during 2021-26 would help in exploration and harnessing of the deep sea living and non-living resources. Manned submersible is likely to be realized by 2026. Deep water trials, integrated mining machine demonstration etc are planned in the second phase of the Mission 2024-26. An amount of Rs 4077 cr has been allocated for Deep Ocean Mission for the period of 2021-2026.
- (g) Some of the notable achievements and progress of Deep Ocean Mission include; i) The design and procurement of sub-systems for Manned Submersible has been completed and integration is in progress, and ii) Design of Mining Machine is ready and demonstration trial is planned during 2024-26.
- (h) The activities under Deep Sea Exploration for next 5 years include Development of Technologies for Manned Submersible, Technological innovations for exploration of Deep Sea biodiversity, Deep Ocean Survey and Exploration for mineral resources.
