

**GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA**

UNSTARRED QUESTION NO:620

ANSWERED ON:02.03.2007

DEEP SEA MINING

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Will the Minister of EARTH SCIENCES be pleased to state:

- (a) Whether the Government has developed the deep sea mining technology ;
- (b) if so, the details thereof alongwith the cooperation extended by the National Institute of Ocean Technology and Experimental Design Bureau of Oceanological Engineering in this regard ;
- (c) Whether the presence of mineral-rich polymetallic nodules in the seabed has come to the notice of the Government ;
- (d) if so, whether any plan has been prepared or launched for mining the ocean floor for such nodules ;
- (e) if so, the details thereof and the likely expenditure to be incurred thereon ;
- (f) Whether India has joined an elite group of countries that have the capability for such deep sea technology; and
- (g) if so, the details thereof ?

Answer

MINISTER OF SCIENCE & TECHNOLOGY AND MINISTER OF EARTH SCIENCES (SHRI KAPIL SIBAL)

(a)&(b) Yes, Sir. The development of the mining system upto a water depth of 6km has been planned by the Ministry in phases. Deep Seabed mining activity has been entrusted to National Institute of Ocean Technology (NIOT), Chennai, the technical arm of the Ministry of Earth Sciences. As a first phase of development, NIOT has designed and developed a prototype shallow bed mining system capable of working upto a depth of 500 m. The system has been demonstrated successfully at a depth of 451 meters in the Arabian Sea off Goa during 2006. Development of integrated mining module with collector and crusher is under progress. A Remotely Operated Submersible (ROSUB-6000) capable of operating up to a water depth of 6 km is being developed jointly by National Institute of Ocean Technology and Experimental Design Bureau of Oceanological Engineering. ROSUB-6000 is undergoing field trials in the sea in phasewise manner.

(c) Yes, Sir.

(d)&(e) The launching for mining of polymetallic nodules from the ocean floor is not yet found to be economical at this stage. There is no plan to mine the seafloor as of now. However, technology development activities in respect of mining and extraction of metal values from nodules are under progress.

(f)&(g) India is a Group B member under the Investor's category of the International Seabed Authority established under United Nations Convention of the Law of the Sea (UNCLOS). India's capability is at par with the developed nations in the area of deep sea exploration and extractive metallurgy to extract metal values from nodules. India is actively involved in the development of deep sea mining technology.