

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
STARRED QUESTION NO. *263
TO BE ANSWERED ON FRIDAY, 6TH AUGUST, 2021**

EXPLORATION OF OCEAN RESOURCES

***263. SHRIMATI SAJDA AHMED:**

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has taken initiatives to explore ocean resources for sustainable use;
- (b) if so, the details thereof;
- (c) whether any studies have been conducted for Ocean Thermal Energy Conversion (OTEC) to offshore energy development and if so, the details thereof;
- (d) whether any initiatives have been taken to explore the resources in Bay of Bengal; and
- (e) 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) to (e): A Statement is laid on the Table of the House.

**STATEMENT LAID IN REPLY TO PERTS (a) to (e) OF STARRED QUESTION NO. *263
REGARDING "EXPLORATION OF OCEAN RESOURCE" FOR ANSWER ON FRIDAY,
AUGUST 6, 2021**

- (a) Yes, Sir.
- (b) Ministry of Earth Sciences (MoES) has conducted detailed studies and explorations on deep sea minerals. MoES through contractual agreements with the International Seabed Authority (ISA), is carrying out exploration activities for Poly-metallic Nodules (PMN) in the Central Indian Ocean Basin since 2002 and for Poly-metallic Sulphides (PMS) in parts of Central and South-West Indian ridges since 2016. Geological Survey of India (GSI) under Ministry of Mines has delineated prospective offshore areas within Exclusive Economic Zone (EEZ) of India for marine mineral resources like lime mud, heavy mineral placers [ilmenite, monazite, rutile, sillimanite, garnet, zircon], and construction sand. National Institute of Ocean Technology (NIOT), an autonomous Institute under MoES has also conducted experiments on harnessing energy from ocean and developed small units for wave and current energy for which open sea trials have been conducted. Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying has taken several initiatives over the years for development of marine fisheries in sustainable manner.
- (c) National Institute of Ocean Technology (NIOT), is currently working towards installing the first ever Ocean Thermal Energy Conversion (OTEC) powered desalination plant at Lakshadweep. This plant will generate fresh water using power from the ocean thermal energy conversion process and will not draw power from the diesel generator grid during operation. GSI had mounted selective six cruises specifically around Andaman and Nicobar Islands and offshore domains off Andhra Pradesh and Tamil Nadu Coast with an objective to investigate suitable site selection for installation of OTEC plants. Based on preliminary feasibility and assessment of the seabed and the temperature profile across the seawater column, favourable locations were identified in the offshore of Havelock Island, Little Andaman Island and Car Nicobar Island, Krishnapatnam, Andhra Pradesh and Puducherry coast.
- (d) Yes, Sir.
- (e) GSI carries out offshore marine survey and exploration in the EEZ of India including East Coast of India, in Bay of Bengal with an objective to identify potential zone for mineral resources. GSI could delineate preliminary resource for heavy mineral placers and occurrence of lime mud and phosphatic sediments based on initial estimation through reconnaissance work in the continental shelf and shelf margin along East Coast of India, in Bay of Bengal (falling within the EEZ). Occurrences of heavy mineral placers in the inner to mid shelf domain off Odisha, Andhra Pradesh and Tamil Nadu has been reported by GSI and so far 70.56 million tonnes of heavy mineral placer resources could be estimated within the Territorial Water Limit of India. An area of 980 sq km (327 sq km area off Chennai and 653 sq. km area off Point Calimere) has been delineated as the potential horizon for occurrence of phosphatic sediments, off Tamil Nadu coast. Occurrence of lime-mud in the outer shelf domain off Pudimadukka, Andhra Pradesh, has been ascertained. Scientific studies and development of technology for Gas hydrates is undertaken under MoES for the exploration of ocean resources in Bay of Bengal with particular reference to two identified blocks in Krishna Godavari Basin and Mahanadi Basin at water depths ranging from 800 m to 3000 m.
