

**GOVERNMENT OF INDIA
MINES
LOK SABHA**

STARRED QUESTION NO:345
ANSWERED ON:26.08.2011
OFFSHORE MINERAL
Sivakumar Alias J.K. Ritheesh Shri K.

Will the Minister of MINES be pleased to state:

- (a) whether any survey/study has been undertaken to assess the offshore mineral potential;
- (b) if so, the details thereof;
- (c) whether phosphatic sediments have been found in the outer shelf and upper continental margin of Kollam in Kerala by RV Samudra Manthan;
- (d) if so, the details thereof;
- (e) whether any parametric survey has been carried out within the territorial waters of Porto Novo and South Karaikal in Tamil Nadu; and
- (f) if so, the details thereof?

Answer

THE MINISTER OF STATE [INDEPENDENT CHARGE] FOR MINES (SHRI DINSHA PATEL)

(a) to (f): A Statement is laid on the Table of the House.

STATEMENT REFERRED IN REPLY TO LOK SABHA STARRED QUESTION NO.345 REGARDING OFFSHORE MINERAL ASKED BY SHRI K. SHIVAKUMAR ALIAS J.K. RITHEESH FOR ANSWER ON 26TH AUGUST, 2011.

(a) and (b): Yes, Madam. Geological Survey of India [GSI], an attached office with the Ministry of Mines has undertaken studies to assess the economic mineral bearing areas within the Exclusive Economic Zone [EEZ] and the Territorial Waters [TW] of India. The details are given in Annexure.

(c) and (d): Geological Survey of India [GSI] has undertaken surveys onboard Research Vessel [RV] Samudra Manthan during Field Season [F.S.] 2009-10, at water depths between 50 meters to 2500 meters, in the outer continental shelf and upper continental slope region of Kollam in Kerala for search for possible occurrences of phosphatic sediments. But, the economic prospect of such occurrence does not appear to be encouraging from the preliminary results obtained as major part of the area is blanketed by sandy sediments with varying amount of clay. Clay content is negligible in the eastern part of the surveyed area and it increases towards west. The sand in the eastern part contains more terrigenous minerals whereas towards western part the sand is calcareous and further west, it is clay and silty clay. Chemical analysis of the sediments and carbonate concretions in the sediments show phosphate (P₂O₅) content less than 0.5%. The sediments dominated by terrigenous component in the eastern part show P₂O₅ content less than 0.1%. Clay minerals have P₂O₅ content around 0.2%. Calcareous sediments in the middle part of the area have upto 0.45% of P₂O₅ content.

(e) and (f): GSI has carried out parametric (magnetic and bathymetric) surveys onboard RV Samudra Kaustubh in the year 2009-2010 [F.S. 2008-09]. The surveyed area is within the territorial waters of Karaikal, Tamil Nadu. The survey was carried out covering an area of 800 sq. km between Karaikal - Nagapattinam in the bathymetric zone of 12 to 300 meters. Seabed mapping was carried out between Porto Novo and Karaikal in the region off Uppanar to Coleroon River mouths. An area of 800 sq km was surveyed for seabed mapping by 233 line km of bathymetry and shallow seismic survey and 230 line km of magnetic survey, 20 sq km of swath bathymetry along with collection of 60 sediment samples and water samples at 3 stations. The sediment type in general is coarse to fine sand in the shelf zone upto 37 m isobath and further the silt and clay content increases. Fine sized heavy minerals occur near the palaeo-strands. Coral debris is abundant near the 87 m ridge.

Annexure

Annexure referred to in parts (a) and (b) of answer to Lok Sabha Starred Question No.345 due for answer on 26th August, 2011.

GSI have delineated economic mineral bearing areas within the Exclusive Economic Zone (EEZ) of India including the Territorial Waters. The findings of the surveys are given below:

Heavy mineral sands comprising ilmenite, rutile, zircon, sillimanite, monazite and garnet found off East coast (Orissa and Andhra Pradesh).

Similar heavy mineral sands comprising ilmenite, rutile, zircon, sillimanite, monazite and garnet have been found off West coast (Kerala –Tamil Nadu).

Heavy mineral sands comprising ilmenite and magnetite also have been found off Ratnagiri in the West coast.

Oolites and calcareous sands have been found in the continental shelf off Andhra Pradesh, Tamil Nadu, Maharashtra and Gujarat coast.

High grade of lime mud occurrences is found in water depth of 100 – 200 m off Andhra coast.

High grade lime mud deposit found in water depth of 180 – 1200 m off Gujarat.

Phosphatic sediment (17 – 19% P₂O₅) found in water depths of 100 – 200 m south east off Chennai.

Phosphatic sediments (15 – 20% P₂O₅) found in water depths of 200 – 1000 m off Gujarat coast.

Reconnaissance Survey, for identification of potential areas for Ocean Thermal Energy Conversion (OTEC) and occurrences of construction grade sand has been carried out off Andaman and Nicobar Islands.

Potential areas of occurrences of construction grade sand off Kerala coast have been identified.

Occurrence of micro-manganese nodules has been identified, within a wide area west of Lakshadweep, at water depths ranging from 2800 meters to 4300 meters. The chemical composition of these nodules are as follows: Manganese: 5% - 41%, Iron: 0.3 – 5.3%, Copper: 530 – 900 parts per million [ppm]; Lead: 230 – 1600 ppm; Zinc: 790 – 4800 ppm; Nickel: 700 – 1000 ppm; Cobalt: 80 – 300 ppm; Ferromanganese encrustations has also been located in the Andaman sea off Batti Malva.