

cyclone warning assistance to Indian Meteorology Department (IMD) has been deployed off Paradip at distance of 240 Km.

- (iii) The Department's research vessel SAGAR KANYA has carried out oceanographic survey off Paradip in August, 1999 as part of Bay of Bengal Monsoon Experiments (BOBMEX). Continuous recording of surface ocean parameters (temperature and salinity), surface meteorological parameters (winds, air temperature, humidity and atmospheric pressure) and current profiles of water column 0-1000 m was carried out.
- (iv) The Department is developing Geographical Information System (GIS) based information for Gahirmatha which is a turtle breeding ground in Orissa. The information system will be useful for management of the area.
- (v) The monitoring of marine pollution along the Orissa coast is also being undertaken by this Department on regular basis.
- (b) At present there is no such proposal.

#### **Exploration of various types of reserves in the Ocean**

2950. SHRI KA. RA. SUBBIAN: Will the Minister of OCEAN DEVELOPMENT be pleased to state:

- (a) whether Government have conducted an study to explore the amount of various types of reserves in the ocean; and
- (b) if so, the details thereof?

THE MINISTER OF HUMAN RESOURCE DEVELOPMENT, MINISTER OF SCIENCE AND TECHNOLOGY AND MINISTER OF OCEAN DEVELOPMENT (DR. MURLI MANOHAR JOSHI): (a) and (b) Yes, Sir. The studies to explore various reserves in the ocean are an ongoing process. These studies have established availability of following types of reserves.

- \* Polymetallic Nodules
- \* Fishery Resources
- \* Heavy Mineral Deposits
- \* Hydrocarbons

(1) The Department of Ocean Development has conducted extensive survey in the Central Indian Ocean basin for the assessment of resources for Copper, Nickel, Cobalt bearing ferromanganese (polymetallic) nodules. On the basis of the survey so far carried out in the 1,50,000 Sq. Km., allocated by UN in August, 1987, the estimated resource potential is as below:

Polymetallic Nodules	760.00 million tonnes
Copper	6.0 million tonnes
Nickel	6.40 million tonnes
Cobalt	0.98 million tonnes
Manganese	146.00 million tonnes

(2) It has been estimated by Ministry of Agriculture that the fishery potential from the Indian Exclusive Economic Zone (EEZ) is 3.9 million tonnes.

This Department is also conducting various projects on studies of Marine Living Resources in the Indian EEZ.

(3) Geological Survey of India (Marine Wing) has undertaken sea bed survey within the EEZ for non-living resources and investigations relating to earth sciences. They have delineated heavy mineral sands comprising ilmenite, rutile, zircon, sillimanite, monazite and garnet off Orissa, Andhra, Kerala and Karnataka coasts; high grade lime-mud deposit in water depths of 180 to 1200 m off Gujarat Coasts; phosphatised sediments (0.4—20% P<sub>2</sub>O<sub>5</sub>) in water depths of 200—1000 m off Gujarat coasts; 2—5 cm thick layer of micro-manganese nodules in water depth of 2800 to 4300 m in Lakshadweep sea; Oolites and calcareous sand found in water depth of 50 to 200 m of Maharashtra and Gujarat coasts; high grade lime mud deposits in water depths of 100 to 200 m off Andhra coasts; phosphatised sediments (0.5 to 19.1% P<sub>2</sub>O<sub>5</sub>) in water depths of 100 to 200 m southeast off Chennai; calcareous sediments in water depths

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of 1000 m, west of Andaman-Nicobar Group of Islands; high grade calcarous sands in shallow offshore and lagoons of Lakshadweep.

(4) Various measures are being taken by the Government to find new hydrocarbon reserve by, *inter-alia*, extending exploration to deepwaters and frontier areas, increasing private participation in exploration activities. Several steps are being taken by the Government to increase crude oil production in the country which include:

\* To improve the recovery factor from existing major fields by implementing Enhanced Oil Recovery (EOR)/Improved Oil Recovery (IOR) schemes, these would also help in accelerating oil production from the fields.

\* To add reserves by exploring in the deeper layer in the producing areas.

### **Re-starting Sealdah-Mugalsarai Express**

2951. SHRIMATI KUM KUM RAI: Will the Minister of RAILWAYS be pleased to state:

(a) whether Government's attention has been drawn to the newsitem published in Jansatta dated 8th November, 2000 under the caption, "Per ab bhi mojud hain baar se hui tabahi ke nisan";

(b) if so, by when the Sealdah-Mugalsarai Express train is likely to be reintroduced;

(c) if not, the reasons therefor; and

(d) the total loss incurred by the exchequer due to cancellation of the said train?

THE MINISTER OF STATE IN THE MINISTRY OF RAILWAYS (SHRI DIGVIJAY SINGH): (a) Yes, Sir.

(b) and (c) 3133/3174 Sealdah-Mughalsarai Express was restored between Mugluilsarai-Sahebganj from 8.11.2000 and has been restored on the entire from 10.12.2000.

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† Original notice of the question was received in Hindi