total length of the coastline of 7516.6 Km, which includes maritime states like Gujarat, Maharastra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Orissa, West Bengal and Union Territories - Daman and Pondicherry in mainland, Lakshdweep on Arabian Sea and Andaman and Nicobar Islands on Bay of Bengal. All these coastal areas are highly dynamic and complex with a variety of ecosystems. Nearly 25% of the population of the country lives in these coastal areas largely depending on coastal waters for their livelihood, and highly populated cities are located on the coastal area. These regions are experiencing rapid development and therefore, hectic human activities, resulting in human interference with the environment. In order to regulate pollution controls in coastal areas, several studies have been carried out under "Marine Pollution and its Control" in the country. At present, the following studies have been carried out by the Central Board.

Coastal Ocean Monitoring and Prediction System (COMPS): It is carried out to monitor coastal areas along West Bengal. The study includes seasonal monitoring of coastal waters, sediments and biological materials for recommended parameter up to the distance of 22.5 km offshore. The study also includes the bacteriology.

Studies on Sensitive Coastal Areas: The preliminary studies were carried out in some of the sensitive coastal areas for obtaining comprehensive information for Environmental Impact Assessments (EIA) and Environmental Status such as type of industrial estates, marine out falls, water quality parameters, weather, solid waste disposal (quantity), and socio-economic status. Also, the Conservation measures are taken and Conservation measures will be taken on mangroves and coral reef beds. This study would be great helpful in establishing basic information and baseline data required for the implementation of marine pollution controls in India.

Environmental Status of Aquaculture in India: India has about 1.2 million hectares of brackish water areas, and only 0.08 million hectares are used for shrimp farming. At present, the shrimp culture has been slowly gaining impetus in India. The rapid expansions are likely to cause a number of social and environmental side effects, which have been witnessed elsewhere in the world. Therefore, Central Pollution Control Board is studying the environmental status of brackish water aquaculture in the country. The study includes the inventory of the coastal aquaculture and its impacts on coastal environment.

Environmental Status of Ports in India: Ports and harbors are the gateways to national and international funds and are inseparably linked with the countries economic development. The environmental impacts by various activities in 11 major and 140 minor ports as well as 6 major and 27 minor fishing harbors are deterioration in the estuarine and coastal water quality, degradation in sediments quality, contamination of soil, air quality and generation of vibrations, noise and other type of wastes. The oil and grease contented in the waters of Paradeep Port were less than those of waters of Calcutta Port. High content of phosphates were also observed, probably due to mixing phosphates while handling rock phosphate.

Status on Marine Pollution due to Ship Breaking Yard: Alang in the Gujarat coast is an important and the largest ship-breaking yard in the world. Two million tons of steel are produced by breaking two hundred ships annually, which creates environmental degradations and pollutions. Hence, measures for pollution control have been carried out for past two years, and guidelines have been prepared for ship breaking activities. The present investigation has revealed that during the ship breaking activities a water quality of Alang coast deteriorates. The Chemical Oxygen Demand (COD) values reaches as high as 469 mg/l, and oil and grease rise up to 23 mg/l as no measures to control pollution caused during breaking activities have been introduced. Huge quantities of the hazardous solid wastes also are generated during the ship breaking activity, which is either burnt on the same plot or disposed at the seashore. This unscientific burning of solid wastes creates significant air pollutions in the area.

A Case Study on Environmental Status of Marine National Park, Jamnagar, Gulf of Kutch. The Marine National Park at Jamnagar coast in Gujarat, which covers an area of 169 sq. km, was declared as a protected area to save more than 200 species of marine flora and fauna. The area is sandwiched by the ports of Vadinar and Kandla and also by the private jetties. Imported crude oil and petroleum products are unloaded here and increasing activities like laying oil pipelines and tourists arrivals may endanger the system. Therefore, the studies including collection of water quality data from predetermined areas covering the marine park area and its surrounding are carried out.

Status of Heavy Metal Pollution in Sundarban Mangrove Forest, A Coastal Wetland of Upper Bay of Bengal

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Trace metals from the coastal mangrove forests i.e., west coast of Bangladesh and also from the Ganges-Brahmaputra-Meghna (GBM) river system were analyzed. In GBM estuary, low concentration was found in water but higher concentration was found in sediment. Heavy metals concentrations were observed in water and sediment and some macrobenthos from

the Sundarban mangrove forests were studied. Concentrations of Fe, Cu, Zn and Cd in water samples and Mn, Cu, Zn, Cd, and Pb in sediment and concentration of Mn, Cd, Cu, Zn and Cu exceeded the toxic levels among the macrobenthos.

An important issue is to find out extents to which pollution from the river reaches the Sundarban ecosystem. Mixing and dispersion of pollutants in the region by the combination of a strong river run off during a monsoon and semi-diurnal tide along the central & east coast creates a dynamic regime which prevents longer residence time in the near shore region. On the other hand, Sundarban mangrove ecosystem has become a sump for pollutants because the normal structure and circulation of currents in the Bay of Bengal tend to prevent mixing these shallow waters with the rest of the ocean.

Accumulation of Mercury, Cadmium and Lead in Tissues of Dall's Porpoise (*Phocoenoides dalli*) off Sanriku Coast in Japan

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Non-essential element mercury (Hg), cadmium (Cd) and lead (Pb) were measured with 13 tissues (liver, kidney, muscle, bone, skin, heart, lung, intestine, blubber, spleen, pancreas, forestomach and main stomach) of 22 Dall's porpoise (*Phocoenoides dalli*) (11 males and 11 females) collected off Sanriku coast of northern Honshu in Japan. All Hg, Cd and Pb showed specific concentration in each tissue. The gender concentration differences were only noted for Hg in bone and intestine, as well as for Cd in muscle and blubber. Highest concentration of Hg (mean±s.d: 25±19 μg/g dry wet weight; range: 7.7–96 μg/g dry wet weight; *n*: 22), Cd (79±47 μg/g dry wet weight; 26–221 μg/g dry wet weight; 22) and Pb (0.16±0.07 μg/g dry wet weight; 0.07–0.34 μg/g dry wet weight; 17) were observed in liver, kidney and bone, respectively. They could be considered as the respective target tissues for accumulation of Hg, Cd and Pb. The hepatic Hg and renal Cd concentrations overlapped the ranges of Hg- and Cd-induced paresthesia reported in human. Detoxification effects were functioned in liver for Hg and in kidney for Cd by formation of Hg–Se or Cd-metallothionein (Cd–MT) complexes. The bone Pb concentration in Dall's porpoise could be listed in lowest Pb concentration rank among cetaceans, implying very low environmental Pb exposure. These results may help us to interpret why no evident pathological effects of these non-essential elements occur in Dall's porpoises of the present study.