

ASSESSMENT OF TRACE ELEMENT ACCUMULATION IN CORE SEDIMENTS, BAY OF BENGAL, SOUTH EAST COAST OF INDIA

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Abstract

This study deals with the geochemical nature of distribution, enrichment of Fe and trace elements (Pb, Zn, Cr, Co, Mn, Ni, Cd), carbonates and organic carbon in core sediments. Two core samples were collected from the study area. The sediments chiefly consist of sandy materials with minor amount of silt and clay. The mean concentration of trace elements in the core sediments is shown following order Cd>Co>Ni>Cr>Zn>Pb>Mn>Fe in core 1 and Cd>Co>Ni>Pb>Zn>Cr>Mn>Fe in core 2 respectively. The mean percentage of calcium carbonate in core 1 & 2 is 1.23 % & 1.32 %. Organic carbon distribution indicates that they are brought in by the minor river input (Core 1-1.35 % & Core 2 – 1.67%). The enrichment factor (EF), pollution load index (PLI) and Geo accumulation index (I_{geo}) and Sediment Pollution Index (SPI) results suggest that the sediments of the study area are contaminated by anthropogenic impact and industrial input. Comparison of studied trace elements with crustal average and other coastal regions indicates that the study area is considerably polluted by trace elements such as Pb, Zn, Cr, Co, Ni and Cd.

Keywords: Trace element enrichment, core sediments, Crustal average, Coastal pollution, Bay of Bengal