

Heavy Metal Contamination in Ship Breaking Yard, A Case Study in Bangladesh

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Abstract : This study embarks on an exploratory journey to assess the pervasive issue of heavy metal contamination in the water bodies along Chittagong Coast, Bangladesh. Situated along the mesmerizing Bay of Bengal, known for its potential as an emerging tourist haven, economic zone, ship breaking yard, confronts significant environmental hurdles. The core of these challenges lies in the contamination from heavy metals such as lead, cadmium, chromium, and mercury, which detrimentally impact both the ecological integrity and public health of the region. This contamination primarily stems from industrial activities, particularly those involving metallurgical and chemical processes, which release these metals into the environment, leading to their accumulation in soil and water bodies. The study's primary aim is to conduct a thorough assessment of heavy metal pollution levels, alongside an analysis of nutrient variations, focusing on nitrates and nitrites. Methodologically, the study leverages systematic sampling and advanced analytical tools like the Hach 3900 spectrophotometer to ensure precise and reliable data collection. The implications of heavy metal presence are multifaceted, affecting microbial and aquatic life, and posing severe health risks to the local population, including respiratory problems, neurological disorders, and an increased risk of cancer. The results of this study highlight the urgent need for effective mitigation strategies and regulatory measures to address this critical issue. By providing a comprehensive understanding of the environmental and public health implications of heavy metal contamination in Chittagong Coast, this research endeavours to serve as a catalyst for change, emphasising the need for pollution control and advancements in water management policies. It is envisioned that the outcomes of this study will guide stakeholders in collaborating to develop and implement sustainable solutions, ultimately safeguarding the region's environment and public health.

Keywords : heavy metal, environmental health, pollution control policies, shipbreaking yard

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