

## **Heavy metal distribution of the South China Sea continental shelf sediments off Sabah and Sarawak coastlines**

### **ABSTRACT**

Fifty-one surface sediment samples from offshore Sabah and Sarawak were collected from the two cruises of the Marine Vessel Southeast Asian Fisheries Development Centre (MV SEAFDEC) before and after the northeast monsoon. The sediments were analyzed for heavy metal contents to determine the effects of monsoon seasons and spatial patterns of distribution. The contents of heavy metals were measured from the  $63 \mu\text{m}$  fraction of the dried sediments and analyzed using an Atomic Absorption Spectrophotometer. The heavy metals studied were Al, Fe, Cr, Cu, Zn, Pb and Mn. Results showed that some metals were in concentrations lower than the average Earth's crust. The lower or higher-than-normal values of some of the heavy metals studied can be attributed to the intensive weathering in the study area, mineralogy, effect of the monsoon and the Rajang River. Furthermore, normalization was done using Al as normalizer to determine whether the high levels of Pb were due to anthropogenic input or not. It was found that the values were higher but not necessarily an indication of inputs from human activities as high levels were also found far from the coast. This may be attributed to input of particulates from the Rajang River and possibly movement of bottom sediments.

**Keyword:** Anthropogenic; Atomic absorption spectrophotometer; Normalization; Rajang River