

Assessment of heavy metal contamination in soils of Raichur and surrounding industrial development area, Karnataka, India

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A Preliminary assessment of heavy metal contamination in soils was carried out in Raichur Industrial Development Area to determine the spatial distribution of heavy metals in soils and to assess the extent of pollution. The study area consists of various small and large scale industries like Steel plant, Cotton mills, Rice mills and Chemical manufacturing units. Around 20 soil samples were collected to assess the status of potentially toxic heavy metals like As, Cr, Co, Ni, Pb, and Zn. The samples were analyzed for their heavy metal concentrations using Wavelength Dispersive - X-ray fluorescence spectrometer (WDXRF). The results indicate that distribution of As was from 2.9 to 6.8 mg/kg, Cr 49.9 to 96.6 mg/kg, Co 6.7 to 31.7 mg/kg, Ni 2.3 to 27.5 mg/kg, Pb 12.2 to 45.8 mg/kg, Zn 77.4 to 128.5 mg/kg. The results were compared with soil quality guidelines to know the extent of toxicity in the study area. Overall the study indicates normal distribution of toxic metals with concentrations within the permissible limits. However, detailed sampling of the study area need to be carried out to identify the point source of contamination.