Researchers identify heavy metal pollution across Cauvery river basin in Tamil Nadu

New Delhi, Jan 15 (India Science Wire): River pollution is a cause of concern in India as almost 45 rivers have at least two toxic heavy metals beyond the permissible limits. A group of researchers from Bharathidasan University, Tamil Nadu, has found that several anthropogenic activities in the recent decades have led to the deposition of metal and other pollutants in Cauvery river basin in Tamil Nadu.

In the study, traces of elements were detected in water and soil samples of the Cauvery river basin, which might be influenced by several anthropogenic activities. Among other reasons, seasonal idol immersion activity was reported as one of the main sources of pollution. The concentration factor and geo-accumulation index revealed that soil samples of the Cauvery river basin were highly contaminated by Cadmium. The presence of other metals was less. “The immersion of the seasonal idol may not create any strong impacts on the distribution of metal in the Cauvery river because of its streamflow. However, when the river water ends up into the sea, these metal pollutants arising from the immersions of idols would have a negative impact in the waters and sediments of the Bay of Bengal” says the published research paper.

In the study, a total of 29 water and topsoil samples were collected from the Cauvery basin before and after idol immersion, and were evaluated for the presence of metals. The experimental results showed elevated Cadmium and Lead levels in water and sediment samples of both Cauvery and Kollidam rivers. Strong statistical significance was observed for all the elements studied in the soil samples collected before and after idol immersion (P < 0.01). Industrial effluents, textile waste, untreated sewage, municipal waste and agricultural activities are the most common causes of elevated levels of heavy metals in the study area.

Further, geo-accumulation index and pollution load index studies showed lesser impact of idol immersion on metal distribution compared to other sites reported from India. The concentration of heavy metals varied for different stations, which could be attributed to idol immersion activity or any other source of pollution. However, strict regulatory policies of the concerned authorities help maintain the quality of the Cauvery basin.
The research team includes Rajaram Rajendran, Vinothkannan Anbazhagan, Ganeshkumar Arumuga and Arun Ganeshan. The research findings have been published in the journal *Current Science*. (India Science Wire)

Keywords: Cauvery river basin, heavy metal pollution, metal pollutants

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