

Vulnerability Analysis of Fluoride Endemicity in Ground Water: A Case Study of Bolagarh Block in Khurda District of Odisha, India

K. C. Rath

Abstract

Water is one amongst the basic necessities without which one cannot imagine of any human habitation. However, the problem of water does not only point towards the quantity of water available but also to the quality of water available and its conjunctive use. Geogenic contamination of ground water due to concentration of fluoride in excess of limits prescribed for drinking purposes (BIS, 2004) have also been observed in many parts of the country. When excessive amount of fluoride is ingested for a long period, it leads to a dreaded, crippling disease known as Fluorosis, which is not curable. In the present study, extensive field work has been carried out for collection of GPS coordinates and water samples from 1200 ground water based drinking water sources (bore wells and dug wells) in the Bolagarh block. The study further tried to map the geology and hydro-geomorphology of the study area with the help of remote sensing and GIS in order to analyse geological and hydrogeomorphological controls of the problem. The results indicated that geomorphology along with geology plays an important role in determining fluoride vulnerability.

Key Words: *Geology, Geomorphology, Fluoride, Remote Sensing & GIS*