Ground Water Geochemistry and Water Quality of Major Rivers of Indian Subcontinent: Understanding the Dimensions and Planning for Monitoring Water Quality

Shanmuganandan, S., Professor of Geography, Madurai Kamaraj University, Palkalainagar, Madurai-625021, Tamilnadu, India

Assessment of the existing water quality is the prerequisite for the effective planning and implementation of the control programmes for various water bodies. The water quality monitoring was started in India in 1977 and the number of monitoring stations were increased steadily along the major rivers of Indian subcontinent. The purpose of the present study is to analyse the geochemical parameters of ground water with the help of 19 physico-chemical and bacteriological parameters besides probing into the geographical characteristics of monitoring locations, types of water bodies and designated best use class with the help of available published data. The study also attempts to throw light on water quality in different areas of the country and also emphasized the significance of list of parameters that monitor the water quality of major rivers of Indian subcontinent. The data were collected from secondary sources and also from available case studies in an extensive manner to explain the water quality and geochemistry of both surface and ground water. The data were analysed with the help of descriptive statistical techniques and the interrelationships of different water quality indicators of different rivers with the application of multivariate statistical technique factor analysis. It was observed at most of the places no trend was observed for pH in all the rivers viz., Godavari, the Periyar, the Chaliyar, the Subarnarekha and the Bhima except the Cauvery where an increasing trend was observed. The water quality on the Cauvery and Ullanaru on the Tunghabhadra conformed to the level required for the designated best use.