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Health risks associated with use of polluted water in the Mullaitivu District: A case study of the Maritime Pattu Divisional Secretariat Division

V. Sivarajah[1], F. Ruzaik[2]
[1]*Independent Researcher*
[2]*Department of Geography, University of Colombo, Sri Lanka*

The Maritime Pattu Divisional Secretariat Division (DSD) faces a major issue of water contamination and scarcity of pure drinking water, creating various health risks for its dwellers. The objective of this study is to identify the health risks encountered by the dwellers due to use of contaminated water. Primary data were collected through a questionnaire survey, with the selection of six model villages based on purposive sampling techniques. Ninety questionnaires and 36 ordinary water samples, selected on the basis of random sampling, were used as primary data. The water samples were tested on 9 water quality parameters to identify electrical conductivity (EC), pH, nitrogen, turbidity, fluoride, phosphorous, and zinc. The findings are presented using a GIS application. Results revealed that the most recorded values of EC, salinity, pH, total dissolved solids (TDS), nitrogen, phosphorus, and turbidity were 1304 µs/cm, 1254 ppm, 8.6 mg/L, 848 ppm, 7.9 ppm, 3.8 ppm and 35.7 NTU respectively. The high concentration of the above elements found in this DSD are higher than the Sri Lankan Standard Institute's desirable limit. The findings of this study also indicate that the dwellers face a variety of health issues: 27% skin diseases/skin rashes; 13% dysentery; 12% tiredness; 4% kidney stones; 4% eye-related issues; 12% allergies, kidney failure, goitre and sleeping disorders; and 4% diarrhoea, dengue, malaria, and pneumonia. The northern part of the DSD shows a higher degree of water pollution and the occurrence of related health risks is higher compared to the southern part, since most of the dwellers there engage in fishing activities. Therefore, this study recommends formulating new irrigation projects, cleaning existing water bodies of the area, and strictly implementing existing water, land, and irrigation related laws and acts. Further, the cooperation of governmental and non-governmental organizations and the general public is vital to maintain the quality of water in the area.

***Keywords**: contamination, pH value, electrical conductivity, health risk, water quality*