

ASSESSMENT OF GROUNDWATER QUALITY USING WATER QUALITY INDEX AND ESTABLISHING A GROUNDWATER MANAGEMENT TOOL AT THE LOCAL LEVEL: A CASE STUDY OF HAU GIANG PROVINCE, VIETNAM

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ABSTRACT

The objectives of this study are to analyze the groundwater quality (GWQI) of Hau Giang province by water quality index which is a mathematical instrument used to transform large quantities of water quality data into a single number which represents the water quality level. In this study, a simple methodology based on the definition of GWQI using the average value of 5 parameters for 8 wells in three aquifers namely, Holocene (qh), upper Pleistocene (qp3), mid-upper Pleistocene (qp2-3) during a period of 7 – year. Final indices for each well are calculated considering weight of each parameter. The result of the study showed that, the WQI index for the same has been calculated and the values ranged from 58 to 900, 46 to 556 and 46 to 668 in the qh, qp3 and qp2-3, respectively. The GWQI values from the present study indicate the very poor quality water which is primarily distributed in the qh dominated by the industrial and the saline intrusion. In the case study, the GWQI map reveals that groundwater quality in studied areas is extremely near to domestic usage standard. Besides, created index map and the simple tool to manage the monitor data by using Quantum – GIS provides a comprehensive view of easily approach for regional decision makers and the local government.

OPTICAL REMOTE SENSING IMAGE OPTIMIZED DEHAZING ALGORITHM BY COASTAL AEROSOL AND CIRRUS BANDS

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ABSTRACT

With the development of remote sensing technology, the monitoring of subjects has become popular in many fields. Satellite remote sensing data is often used as optical images. However, optical image data is often affected by the phenomenon of haze and cloud, which significantly reduce the quality of images. In this paper, we applied an algorithm presented previously to dehazing for Landsat 8 and Sentinel-2. Multivariable linear regression analysis is used to compute reflectance values due to the effects of haze. The result is compared with no-haze image (within a cycle).