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ASSESMENT OF WATER RESOURCES UTILIZING LANDSAT SATELLITE IMAGERY

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Abstract

Observation of surface water is a very important for studying hydrological processes and last advances in satellite-based optical remote sensors have promoted the field of sensing surface water of a certain area or from a catchment area. This paper has considered analysing data from satellite image and geographical information system (GIS) for a catchment area. Banat hydrographical area is situated in the western part and south-western part of Romania and Barzava River basin drains a relatively small area in Banat Hydrographical Area. GIS techniques were used for extract data NDWI, MNDWI, AWEI indexes from in Landsat-8 satellite in images to evaluate their performances for the extraction of surface water. This paper shows the monitoring of Barzava river basin based on the indices resulting from the processing of satellite images. The objective of this research was to extract the surface water bodies from the hydrographic basin of river Barzava. Then, these data are utilized for purpose finding correlation and regression equations between the reflectance of the satellite image and the water parameters. NDWI being an indicator of plant water stress, it is observed that for 2018 compared to 2019 the basin of the Barzava River was affected by the drought.

Keywords: catchment, GIS, NDWI, remote sensing, satellite images

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