Groundwater depth prediction using Shetran model in Citarum River basin

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Abstract	Drought is a natural disaster that lasts a long time and has an impact on various things that can seriously affect human life, economy, agricultural production, and also ecological environment. In Indonesia, floods and droughts become annual disasters that often occur and are difficult to avoid, even in big cities. Drought cannot be considered a trivial problem because its impact is very detrimental to every aspect of life. Drought can be seen from several indicators. The depth of groundwater can be an indicator of drought. The purpose of this study was to predict the depth of groundwater in the Citarum River Basin. This study uses a spatially distributed Shetran model. The Shetran model was developed by the School of Civil Engineering and Geosciences at Newcastle upon Tyne University. The hydro-climatological data from satellite measurements during 2001 to 2017 were used in Shetran model. Input data in this study consisted of digital elevation models, TRMNI rainfall data, evaporation data, soil properties, and land-use change land cover change data. The results showed that within 17 years the land use types in the Citarum watershed had undergone significant changes. This land use change affects the depth of groundwater in the Citarum watershed.
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