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Estimating Groundwater Development area in Jianan Plain using Standardized Groundwater Index

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Taiwan has been facing severe water crises in recent years owing to the effects of extreme weather conditions. Changes in precipitation patterns have also made the drought phenomenon increasingly prominent, which has indirectly affected groundwater recharge. Hence, in the present study, long-term monitoring data were collected from the study area of the Jianan plain. The standardized groundwater index (SGI) and was then used to analyse the region's drought characteristics. To analyse the groundwater level by using SGI, making SGI180 groundwater level be the medium water crises, and SGI360 groundwater level be the extreme water crises. Through the different water crises signal in SGI180 and SGI360, we divide groundwater in Jianan plain into two sections. Thereby the water crises indicators establishing groundwater level standard line in Jianan Plain, then using the groundwater level standard line to find the study area where could be groundwater development area in Jianan plain. Taking into account relatively more water scarcity in dry season, so the study screen out another emergency backup groundwater development area, but the long-term groundwater development area is still as a priority development area. After finding suitable locations, groundwater modeling systems(GMS) software is used to simulate our sites to evaluate development volume. Finally, the result of study will help the government to grasp the water shortage situation immediately and solve the problem of water resources deployment.