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Adaptation of RDM for karst groundwater management in Southwest China

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China has the largest karst area in the world and sustainable utilization of water resources in the Karst area becomes significant challenging. In this paper, the international best practice for resources management is reviewed with a specific regard to Resource Directed Measures (RDM) developed and implemented in South Africa. RDM constitutes a series of measures that were geared to implement for the South African National Water Act (1998) to ensure the sustainability of all water resources. The RDM include classification, setting the Reserve and setting Resource Quality Objectives. Adaptation of RDM concepts was made four karst subterranean streams with different aquatic ecosystem status in Southwest China, including Banzhai subterranean stream catchment in Guizhou, Maocun experimental site in Guilin, Guangxi, Lihu subterranean stream in Nandan, Guangxi, Jila subterranean stream in Liuzhou, Guangxi, respectively. According to the analytical data from the groundwater samples both in wet season and dry season, the indicators that could represent the aquatic ecosystem in these four subterranean streams were selected and the index system was established finally, which forms initial data base for the monitoring and management in future. It was the first time to apply RDM in karst groundwater catchment in Southwest China with good preliminary results.

Keywords: karst, Southwest China, groundwater catchment, RDM

