Ecological effect assessment of Danjiangkou Water Source Area under the influence of Water Diversion Project

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Abstract: The South-to-North Water Diversion (SNWD) Project is the largest inter basin water transfer project in the world. Danjiangkou Reservoir is water source of Middle Route Project of SNWD Project. It is of great value to evaluate the changes of ecological environment in the basin under the SNWD Project, which is of great value for guiding the ecological construction and development of the basin and scientific water transfer, and also provides a reference for the scientific identification of the basin ecological environment response mechanism under the influence of large-scale water conservancy projects; By estimating the reservoir capacity, land use change and ecosystem service value before and after water diversion, we analyzed the impact of SNWD project on Danjiangkou Water Source Area and ecological benefits. The results show that: The SNWD Project has a significant impact on the spatial and temporal distribution of water resources in Danjiangkou reservoir. The water area and storage capacity of the reservoir after the SNWD project are significantly increased compared with those before the implementation of the project. The change trend of land use types before and after the water diversion project is that construction land encroaches on cultivated land and forest land. After the implementation of SNWD project, the regional vegetation coverage is significantly reduced, especially in the downstream. The SNWD project has a great impact on the ecological environment of the basin.

Keywords: Ecological environment change; Driving factor; Water Diversion Project; Danjiangkou reservoir