

## **Water risk assessment for river basins in China based on WWF water risk assessment tools**

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**Abstract** Water resource problems, one of the most important environmental and socio-economic issues, have been a common concern worldwide in recent years. Water resource risks are attracting more and more attention from the international community and national governments. Given the current situations of water resources and the water environment, and the characteristics of water resources management and information statistics of China, this paper establishes an index system for water risk assessment in river basins of China based on the index system of water risk assessment proposed by the World Wide Fund For Nature (WWF) and German Investment and Development Co., Ltd (DEG). The new system is more suitable for Chinese national conditions and endorses the international assessment index. A variety of factors are considered to determine the critical values of classification for each index, and the indexes are graded by means of 5-grade and 5-score scales; the weights and calculation methods of some indexes are adjusted, with the remaining indexes adopting the method of WWF. The Weighted Comprehensive Index Summation Process is adopted to calculate the integrated assessment score of the river basin. The method is applied to the Haihe River basin in China. The assessment shows that the method can accurately reflect the water risk level of different river basins. Finally, the paper discusses the continuing problems in water risk assessment and points out the research required to provide a reference for further study in this field.

**Key words** water risk assessment; assessment index; index weights; assessment method; Haihe River Basin; problems and prospects