



## **Impact of Water Intensity and Efficiency on Water Resources Sustainability in China**

Lingling BIN (1), Xinyi XU (1), Zhongwen YANG (1), and Kui XU (2)

(1) Digital Watershed Laboratory, College of Water Sciences, Beijing Normal University, Beijing, China (bli813@126.com), (2) State Key Laboratory of Hydraulic Engineering Simulation and Safety, Tianjin University, Tianjin, China (jackykui@126.com)

Water problems in China have characters of less per capita, highly developed and low efficiency; it is essential to pay close attention to the sustainable utilization of water resources. This paper aims to explore the impact of human activities on the sustainability of water resources in China. Three important factors affecting sustainability significantly were involved: Water Resources (WR), Water Intensity (WI) and Water Efficiency (WE). Assessment of the three factors were conducted in 356 cities in mainland China, and each indicator is graded from “very low” to “very high” according to the eigenvalue magnitude. China is then classified into four zones to differentiate regional variations of the impact of human activities on water sustainability. Results show that 34% of the areas have high WI values and 58% have low WE values. It is recommended that water resource policies be turned to a more sustainable management strategy in areas with high intensity and low efficiency and sustainability significantly low. Zone I regions should be focused on particular attention for its exploitation of water resources reached an extreme state, water efficiency should be highly improved and water-saving management policy implemented to maintain the sustainable development of water resources and ecosystems.