
基調講演 1 / -Key Lecture 1-

Integrated study of the water-ecosystem-economy in the Heihe River Basin and its implication for water resource management in world's inland river basins

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The competition for water between economy and ecosystem is getting more intense in inland river basins all over the world. In all of these cases, the water, the ecosystem and the economy are closely interrelated. Therefore, the solution to this problem must involve the careful and rational use of the limited water resources in such a way that not only supports economic development but also sustains the health of the ecosystems.

The Heihe River Basin is a typical inland river basin located in arid region of northwest China. It also acts as an experimental watershed where integrated studies of the water-ecosystem-economy have been carried out. The ecological water diversion project in the Heihe River Basin is the first successful case in China in which the ecological systems in a river basin have been rescued. Scientific research has been playing a key role in supporting ecosystem rehabilitation in the Heihe River Basin. In 2000, based on a large amount of previous research work, an ecological water diversion project was successfully implemented by the central government of China, and as a result, the severe deterioration of ecosystems in the downstream areas of the Heihe River Basin has been greatly alleviated, and terminal lakes have been restored. However, there are also negative influences in other parts of the river basin. On the whole, how to manage the water resources is still a big challenge.

We review the integrated studies of the water-ecosystem-economy relationship in the Heihe River Basin and conclude that sustainable development in inland river basins requires the basin to be considered as a whole, with the relationships between the upstream, midstream and downstream areas of the basin coordinated appropriately. Successful development in these basins will be reflected in an improved output per cubic meter of water and the implementation of integrated river basin management practices.