

Climate change and water management adaptation for China

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China is a water-scarce country, but freshwater was not considered to be a priority issue by the government in the past. With economic development and population growth in recent years, water resources in some areas are under a heavy and increasing stress. In addition, global warming as a fundamental driver of the water cycle not only affects hydrological processes, but also increases the demand for a finite supply, which makes water problems in China more complex than ever before. This contribution explores the potential implications of climate change on water security problems including flood-prevention, water supply, aquatic environment, and water engineering security in China. The results show that frequency of flood risk is likely to increase, but annual runoff of the main rivers is likely to decrease, and these situations increase pressures on the water resource and will impact not only the reliability of water supplies, but also aquatic ecosystems, which will transform the traditional way for water management. Water Demand Management (WDM), as a new way of water management with lower costs and environmental protection, is implemented by the Chinese government through a wide range of measures including legislation, administrative, economic, technology and public education, with collaboration among water planners, water service providers and end-users. Some of the work, including water saving society construction and groundwater protection programmes and water price reform, have already had great success. The framework for future WDM work for adaptation to climate change in China is described in Fig. 1. With the implementation of the Strictest Water Resources Management System by the government, the total water demand will stabilise, or even decrease, and efficiency of water use will rise in the future, then finally realize a sustainable state of economy and society.

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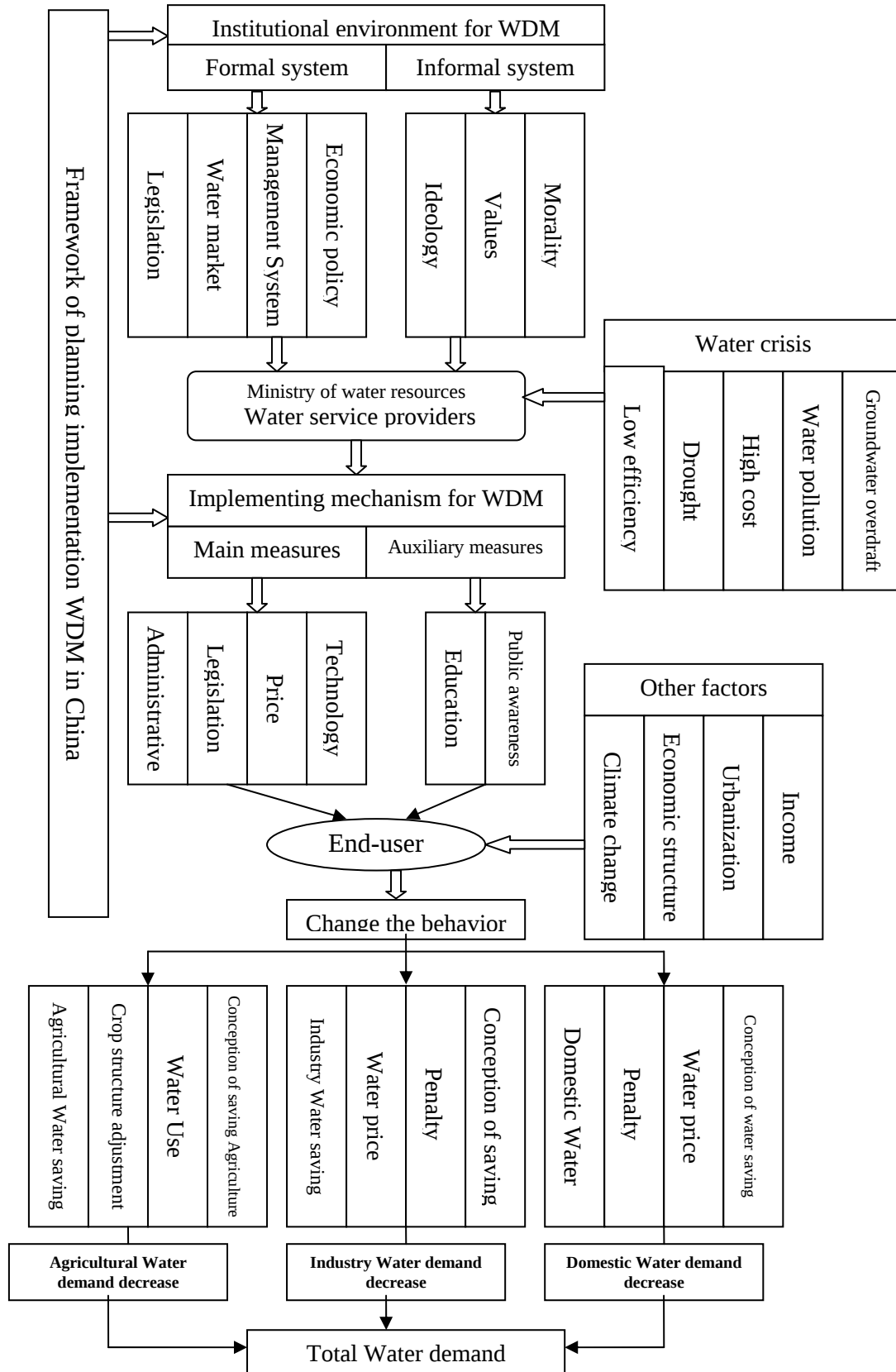


Fig. 1 Framework of planning implementation Water Demand Management in China.

