Managing Flood Risk: Practices in China

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Flood is one of the major water security problems in China. Affected and controlled by special geographical and climatic conditions, about 70% of the national territory and over 90% of the population of China are under impacts of floods at various levels. Direct losses from flood disaster account for over 65% of total losses of natural disasters in China, and mountain flood, highly sudden and disastrous, takes up over 70% of the death toll from flood disasters.

In recent years, with continuous investment in flood control and disaster reduction projects, China has kept improving its capacities, leading to distinct reduction of flood-hit areas and casualties. In 2018, China reported the lowest record of death toll and missing since the founding of the People's Republic of China. However, with economic and social development, worsened by uncertainties such as climate change, flood disasters present new features, resulting in stubbornly heavy economic losses and challenges to flood risk management.

China put forward the strategic arrangement of "transformation from controlling flood to managing flood" for flood control in 2003, and established engineering measure system featuring flood control works of reservoir, embankment, flood diversion and storage and culverts and gates, and non-engineering measure system comprising institutional organizations, laws and regulations, social security, scientific and technological support. Since 1998, China invested CNY 28.2 billion in heightening and reinforcing main dikes along the middle and lower reaches of the Yangtze River, while risk elimination and reinforcement of over 60,000 reservoirs with hidden troubles were conducted at the cost of nearly CNY 200 billion. Efforts have also been made in enhancing non-engineering measures for mountain flood control, building information system for flood prevention and drought resistance, and developing flood risk maps, resulting in remarkable success.

With the acceleration of global climate change and urbanization, and due to unbalanced regional development, flood control and disaster reduction systems remain under-developed in some regions and fields in China. In the new period, China's efforts in water governance will be based on the keynote of "improving weak links in water works and tightening supervisions on water industry" and balanced engineering and non-engineering measures to improve flood control projects, eliminate risk and reinforce reservoirs with hidden troubles, regulate small and medium-sized rivers, prevent and control mountain flood, and apply modern information technology to upgrade intelligent monitoring and early-warning abilities, so as to raise the level of flood disaster management in all respects.