



Framework of Extreme Drought Contingency Plan in Large River Basins Considering Climate Change

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The frequency and magnitude of disasters caused by climate change are increasing. Drought is one of the disasters recently issued throughout the world even though it tends to onset less frequently than flood and hurricane. When drought occurs, it generally affects an extensive parts of human society and ecosystem. The damages caused by extreme droughts are recently increasing, however, relevant research on drought is proceeding in various ways considering climate change. Nevertheless, long-term drought contingency plans are needed to cope with extreme droughts which are certain to occur in near future. In South Korea, the recent extreme multi-year droughts encouraged to establish long-term and regional drought contingency plans. In this study, we proposed a framework for drought contingency planning which is composed of six components; 1) drought monitoring which is a process for collecting, analyzing, and disseminating water availability and other drought-related data; 2) vulnerability assessment which determines risks to critical resources within the planning area and the factors contributing to those risks; 3) mitigation actions which contains strategies implemented before drought to address potential risks and impacts; 4) response actions which manage the limited resources and decrease the severity of immediate impact during specific stages of drought; 5) operational and administrative system in which an administrator can operate and manage; 6) assessment and update process which are provide a process and schedule for monitoring, evaluating, and updating the drought contingency plan. In this study, the proposed six components were applied to the Nakdong River basin to enhance the regional ability to effectively cope with extreme drought and reduce damages.

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