

## **Risk and security indicators for water supply systems**

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**Abstract.** Drought and human factors place stress on water supply systems, which struggle to keep up with urbanization, population growth and rising standards of living. Water supply planners usually apply conservative policies to create adequate water reserves but these may ignore demand management and mutual aid programs that can apply across regions. As a result, water supply planners are not sure how many water rights to obtain or how much infrastructure to build. Water quantity regulators, such as state water resources officers, may not know how to allocate supplies or to draft drought response plans. The use of risk and security indicators can alleviate these problems and provide valuable decision information, but the use of these indicators is not widespread. The indicators can also lead to better plans and more resilient water supply systems. The basic approach to creating risk and security indicators should use statistical information about single sources and comprehensive water supply systems. Data is often available to compute the necessary indices, but methods are either too complex or not familiar to water planners. The paper will summarize the problems inherent in creating water supply indicators, demonstrate successful methods to create them, and suggest a research agenda to increase use of the indicators. Local and national case studies will be presented to demonstrate the methods.

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