

Generalized simulation system for water resources management under climate change

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論文内容の要旨

In Thailand, water resources crises are drought, food and water pollution due to variability of precipitation and lack of integrated water resources management. There is no systematical tool to address these problems and no regulation to guide on flood safety, security of water use, and water for environment. Moreover, with climate change impacts in future, water resources availability and conflicts will be worse than the existing condition and may affect to water resources management for benefit area. It is necessary to develop a simulation system as an End-to-end model for water resources management under climate change scenarios for Thailand. However, various integrated water resources model require a large scale computation and basic data that could not be directly applied for water resources management for Thailand, which are necessary to be developed as a generalized simulation system before use for Thailand. Generalized simulation system with Future climate data module, Runoff prediction Module, Demand projection Module and Economic impact evaluation module was developed and applied in a case study area, Rayong province, Thailand. There was a conflict between farmers and industry caused by low rainfall and unsystematic water resources management which nowadays was no simulation system to support integrated water resources management. From this reason, we start to develop a simulation system for water resources management under climate change as End-to-end-model by a case study in Rayong and suggest that this system development technique can be implemented to other areas.