

Developing a common socio-hydrological model based on the value-belief-norm theory

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Abstract

In recent decades, the socio-hydrology community has developed several socio-hydrological frameworks to understand the complexity of the coupled human-water system. Although there have been efforts to relate sociology and hydrology, there still have been some insights that remain debatable. As for this study, the Value-belief-norm theory was used to represent the human behavior in order to connect the human-water system. The theoretical framework of values, beliefs and norms was developed to understand the human culture towards the environment. In addition to the theory, norms are legislation of human behavior in the society while the values are the guiding principle to motivate beliefs and norms. The overview of this study implied on developing a socio-hydrological model consisting of the four systems defined as hydrology, socio-economy, technology and institutional. The interconnectors between the four systems are the key variables and parameters representing a module namely the causal loop diagram. Moreover, water quality, size of population, infrastructure capacity and norms are the key variables to connect the four systems. The developed model will be applied to Han River to represent the coevolutionary of the dynamics of human-water systems.

Keywords : Values, Beliefs, Norms and Socio-hydrological model

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