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Socio-Hydrological Modelling of Cooperation and Conflict in the Transboundary Lancang-Mekong River

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The transboundary Lancang-Mekong River Basin has experienced both cooperation and conflict over the past several decades. Downstream countries (Thailand, Cambodia and Vietnam) rely on Mekong River for fisheries and agriculture, while upstream countries including China and Laos have been constructing dams to generate hydropower. The construction and operation of dams in upstream countries has changed the seasonality of streamflow in downstream countries, affecting their agriculture and fishery benefits. More recently, cooperation between upstream and downstream countries has led to benefit sharing and improved international relations throughout the river basin. In this presentation, we introduce a socio-hydrological model that simulates the hydrological changes in downstream countries resulting from upstream dam operation, based on collection of hydrological, economic and social data in Lancang-Mekong river basin. Our model captures the cooperation and conflict feedback loops which impacts the operation rules of upstream dams. In this way, our study generates understanding of the connections between water resources management and hydro-political dynamics underpinning cooperation and conflicts mechanism in this transboundary river basin.