

Exploring upstream-downstream in flood risk management – A role played flooding game

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Abstract

Flooding is among the most severe natural disasters that increases due to climate change in riparian landscapes. Cities can address this issue in various ways – building technical flood defence systems (flood protection), preparing areas to be inundated (resilient cities), or trying to retain water in upstream areas to reduce the flood peak; often these measures need to be combined. The most effective measures to reduce flood risk are often situated not within a city, but upstream in the catchment. This raises the issue of hydro-diplomacy for flood risk management between downstream and upstream parties. Whereas hydrological and technical issues can often be resolved rather straightforward, one of the key limiting issues with the implementation of such retention measures is how to get to an agreement between upstream and downstream stakeholders to implement the most effective and efficiency measure, in particular (but not only) if administrative or national boundaries are within the catchment. Upstream is usually not motivated to implement measures from which mostly only downstream profit. The issue becomes more complicated if multiple upstream and downstream parties are involved. To resolve such issues and achieve more effective and efficient flood risk management, the relation between upstream and downstream parties needs to be better understood.

This contribution presents and discusses a set up for an experiment in form of role played game, in which the dynamics of negotiations in multiple upstream-downstream relationships between players will be explored. The game is focused on real stakeholders (mayors and river basin managers). In the first part, flood risk acceptance of each player is tested. In the second part participants negotiate on finding solutions to flood risk in a virtual catchment. Different conditions based on the Cultural Theory are applied. At the end feedback is collected in form of in-depth interviews with players.