



UTFI: AN INNOVATIVE APPROACH AT THE RIVER BASIN SCALE

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Major advancements are needed to avert increasingly frequent water-related disasters globally, and especially in the developing country context where cost-effective, robust and scalable solutions have potential to greatly reduce human suffering and improve rural livelihoods. One such solution currently under development involves facilitating recharge with wet-season high flows to refill depleted aquifers in upstream regions of catchments, thus preventing local and downstream flooding and simultaneously mitigating droughts by providing additional groundwater for intensifying irrigation. This solution we have aptly named "underground taming of floods for irrigation" (UTFI).

Detailed mapping has established that the conditions favouring the establishment of UTFI are prevalent across many regions globally. This includes much of the highly populated Gangetic Plains of South Asia, where detailed assessments are currently being carried out. Pilot scale implementation commenced in 2015 in the Indian state of Uttar Pradesh, situated within the Ramganga sub-basin.

Application of UTFI requires thoughtful planning to ensure that the inherent technical, economic, social, institutional and environmental issues/risks are carefully addressed in a staged manner to progress from concept towards sustainable mainstream implementation. The speakers in this Special Session will highlight these issues as they apply the Ramganga and provide the status and insights for ongoing research and the implications for policy.

We hope that this Special Session will help scientists and decision makers to take a fresh look at the co-management of frequent negative seasonal floods, droughts and groundwater depletion, and begin to consider UTFI amongst the portfolio of options when planning for climate change adaption/mitigation and disaster risk reduction. Although this research is firmly grounded in South Asia there are clear opportunities to extend the approach elsewhere.