

## **Science-policy interface in transformative adaptive flood risk management – decision-making in Austria**

Thomas Thaler, Marie-Sophie Attems, Magdalena Rauter, and Sven Fuchs

University of Natural Resources and Life Sciences, Institute of Mountain Risk Engineering, Vienna, Austria  
(thomas.thaler@boku.ac.at)

Facing the challenges of climate change, this paper aims to analyse and to evaluate the multiple use of flood alleviation schemes with respect to social transformation in communities exposed to flood hazards in Europe. The overall goals are: (1) the identification of indicators and parameters necessary for strategies to increase societal resilience, (2) an analysis of the institutional settings needed for societal transformation, and (3) perspectives of changing divisions of responsibilities between public and private actors necessary to arrive at more resilient societies. As such, governance is done by people interacting and defining risk mitigation measures as well as climate change adaptation are therefore simultaneously both outcomes of, and productive to, public and private responsibilities. Building off current knowledge this paper focussed on different dimensions of adaptation and mitigation strategies based on social, economic and institutional incentives and settings, centring on the linkages between these different dimensions and complementing existing flood risk governance arrangements. As such, the challenges of adaptation to flood risk will be tackled by converting scientific frameworks into practical assessment and policy advice.

This paper used the Formative Scenario Analysis (FSA) as a method to construct well-defined sets of assumptions to gain insight into a system and its potential future development, based on qualitatively assessed impact factors and rated quantitative relations between these factors, such as impact and consistency analysis. The purpose of this approach was to develop scenarios, where participations develop their own strategies how to implement a transformative adaptation strategy in flood risk management. In particular, the interaction between researcher, the public and policy makers was analysed. Challenges and limitations were assessed, such as benefits on costs of adaptation measures, for the implementation of visions to develop bottom-up community actions in flood risk adaptation. The workshops delivered a case- and stakeholder-specific preference matrix which allowed us to elaborate on the relative differences in preferences between stakeholder groups also to determine economically and socially feasible measures. The workshops ended with developing a strategy and working plan how to start bottom-up initiatives in the respective communities with focus on questions of responsibility for encouraging and supporting bottom-up actions and needed resources.