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Methodology to explore interactions between the water system and society in order to identify adaptation strategies

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Development of sustainable water management strategies involves analysing current and future vulnerability, identification of adaptation possibilities, effect analysis and evaluation of the strategies under different possible futures. Recent studies on water management often followed the pressure-effect chain and compared the state of social, economic and ecological functions of the water systems in one or two future situations with the current situation. The future is, however, more complex and dynamic. Water management faces major challenges to cope with future uncertainties in both the water system as well as the social system. Uncertainties in our water system relate to (changes in) drivers and pressures and their effects on the state, like the effects of climate change on discharges. Uncertainties in the social world relate to changing of perceptions, objectives and demands concerning water (management), which are often related with the aforementioned changes in the physical environment.

The methodology presented here comprises the 'Perspectives method', derived from the Cultural Theory, a method on analyzing and classifying social response to social and natural states and pressures. The method will be used for scenario analysis and to identify social responses including changes in perspectives and management strategies. The scenarios and responses will be integrated within a rapid assessment tool. The purpose of the tool is to provide users with insight about the interaction of the social and physical system and to identify robust water management strategies by analysing the effectiveness under different possible futures on the physical, social and socio-economic system.

This method allows for a mutual interaction between the physical and social system. We will present the theoretical background of the perspectives method as well as a historical overview of perspective changes in the Dutch Meuse area to show how social and physical systems interrelate. We will also show how the integration of both can contribute to the identification of robust water management strategies.