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Evaluation of emission reduction measures and ecological water quality benefits; the river Dommel case

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The river Dommel (the Netherlands) suffers from urban inputs of organic wastes and nutrients. The effluent of the waste water treatment plant (WWTP) Eindhoven, the third largest WWTP in the Netherlands, is discharged on this river In addition, during period of high rainfall untreated waste water is discharged through sewer overflows. Transparency and oxygen conditions in the river might decrease rapidly. As a result, good ecological conditions as demanded by the European WFD are yet far from reached in the river Dommel.
To improve surface water quality comprehensive measure for transport, retention and treatment of waste water are necessary. With these measures substantial investments are involved. Local governments and waterboards more and more focus on optimization of the cost-benefit ratio, when designing integrated catchment management plans. A two years project is started to link ecological water quality to specific regional pressures by intensive monitoring and modeling. The main idea is to shift from emission reductions targets (as an objective itself) to vulnerability and resilience of the aquatic ecosystem. Scenarios of different combination of measures are set up and evaluated with a series of models. The projected result is insight in the most efficient and cost effective measures, both emission reductions and management options. Moreover, the feasibility of implementing the measures and regulations is enlarged by the early involvement of all parties in this project (local government, waterboard, scientists, consultancies).
This presentation will show the outline of the project, the set up of the surface water model and some preliminary results.