

Sustainable water infrastructure planning

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Water supply pipes, sewers and wastewater treatment plants are in need of renovation in many places. However, current water policies in Switzerland are inadequate for the durable and strategic planning of such infrastructure. How must tools and planning processes be adapted to the changes in nature and society?

Background

Infrastructure in the water sector should be as long-lived as possible. However, its planning is very complex: extreme events such as droughts and floods should be taken into account to the same extent as the increasing water demand or the demographic development. Also, the stakeholders are to be included in the decision-making processes. The division of waste water disposal and drinking water supply into separate organizational entities is a weak point in the planning process. Instruments are available to identify infrastructural flaws in a municipality and to recommend investment plans. But they do not make long-term planning possible – amongst other things because the necessary tools are not available.

Aims and methods

Decision-making support will be developed, so that the long-term planning of water supply and wastewater treatment infrastructure can be improved. The project will strive for a balance between economic costs, ecological aspects and social values. Special attention will be given to the fact that many communities have only limited data concerning their infrastructure and that future developments cannot be predicted with certainty. Subjective preferences of the various policy-makers will be integrated by means of a multi-layered decision analysis. Decision-making support will be developed and validated in several municipalities, together with the practically-oriented partners.

Significance

The tools that will be developed assist the transition from problem-based “repairs” to foresighted planning of water infrastructure. The stakeholders participating in the case studies will be sensitized for planning issues by being included in a forward-looking, joint planning process. This approach can be adapted to other difficult decision-making situations in which many different stakeholders are involved.