

## Eawag Seminar Invitation

# A Path Towards Sustainable Use of Overpumped Aquifers

**Speaker** **Prof. em. Dr. Wolfgang Kinzelbach**  
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**When** **October 18, 11.00 – 12.00 a.m.**

**Where** **Forum Chriesbach, room C20, Eawag Dübendorf**

**Abstract** Overpumping of aquifers, mainly due to irrigated agriculture, is an unsustainable practice found in numerous regions of the world. While economists advocate non-regulation free market outcomes, here the point of view is argued that an early control of overpumping is a better choice. Consequences of overpumping include drying up of wetlands, die-off of phreatophytic vegetation, soil subsidence, seawater intrusion and increase of pumping energy requirements. A sustainably managed aquifer on the other hand is a sub-surface reservoir, capable of mitigating increased climatic variability due to climate change. While control of a surface reservoir is easy, the control of ten thousands of wells is a challenging task. It can be tackled with new technologies, which have recently become available. However, these technologies only work, if farmers cooperate.

Experience from a Sino-Swiss cooperation project (funded by the Swiss Agency for Cooperation and Development) is presented. It covers two pilot regions. In both cases a system with the three elements of monitoring, data analysis/modelling, and policy implementation has been designed. While the control scheme in the first pilot region, the Heihe Basin is showing first positive results, the second pilot in North China Plain still poses a more fundamental problem. The most effective method applied so far is a subsidy for fallowing of irrigated winter wheat areas. The message is that bringing world-wide aquifers into equilibrium again implies a reduction in agricultural production irrigated with groundwater.