# Climate change impact on groundwater

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Climate change impacts on water resources are presently a worldwide hot matter of debate. In particular, the effects of future climate variability on groundwater deserves particular attention and interest from both European researchers and policy makers due to its relevant connection with the European water policy directives (e.g. 2000/60/EC and 2007/118/EC) and their related environmental objectives. In this respect, the forecasting of long-term impacts of climate change on water resources is of importance to settle effective protection measures and to implement sustainable management of groundwater resources.
Within this framework, numerical modeling represents an excellent tool to unravel the complex relationships between climate and the components of groundwater balance and to estimate their future evolution. One ideal laboratory to assess the effects of climate change on groundwater resources is the Venetian plain, which is a densely populated area and one of the most economically competitive regions in Europe.
Starting from the results of the water balance performed on the high Venetian plain by Fabbri et al., (2016), the project is aimed at quantifying the future impacts of climate change on groundwater resources by numerical analysis. This goal will be achieved (i) by updating the knowledge on the balance components, (ii) by their numerical simulation and (iii) through their projection within future climate change scenarios for Northern Italy.

References

Fabbri, P., Piccinini, L., Marcolongo, E., Pola, M., Conchetto, E., & Zangheri, P. (2016). Does a change of irrigation technique impact on groundwater resources? A case study in Northeastern Italy. Environmental Science & Policy, 63(May), 63–75. http://doi.org/10.1016/j.envsci.2016.05.009.