



HyCAW: Hydrological Climate change Adaptation Wizard

Stefano Bagli, Paolo Mazzoli, Davide Broccoli, and Valerio Luzzi
GECOSistema srl, Cesena, Italy (stefano.bagli@gecosistema.it)

Changes in temporal and total water availability due to hydrologic and climate change requires an efficient use of resources through the selection of the best adaptation options. HyCAW provides a novel service to users willing or needing to adapt to hydrological change, by turning available scientific information into a user friendly online wizard that lets to:

- Evaluate the monthly reduction of water availability induced by climate change;
- Select the best adaptation options and visualize the benefits in terms of water balance and cost reduction;
- Quantify potential of water saving by improving of water use efficiency.

The tool entails knowledge of the intra-annual distribution of available surface and groundwater flows at a site under present and future (climate change) scenarios. This information is extracted from long term scenario simulation by E-HYPE (European hydrological predictions for the environment) model from Swedish Meteorological and Hydrological Institute, to quantify the expected evolution in water availability (e.g. percent reduction of soil infiltration and aquifer recharge; relative seasonal shift of runoff from summer to winter in mountain areas; etc.).

Users are requested to provide in input their actual water supply on a monthly basis, both from surface and groundwater sources. Appropriate decision trees and an embedded precompiled database of Water saving technology for different sectors (household, agriculture, industrial, tourisms) lead them to interactively identify good practices for water saving/recycling/harvesting that they may implement in their specific context. Thanks to this service, users are not required to have a detailed understanding neither of data nor of hydrological processes, but may benefit of scientific analysis directly for practical adaptation in a simple and user friendly way, effectively improving their adaptation capacity. The tool is being developed under a collaborative FP7 funded project called SWITCH-ON (EU FP7 project No 603587) coordinated by SMHI (<http://water-switch-on.eu/>) and online demo is available at www.gecosistema.com/switchon