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CLIMB - Climate induced changes on the hydrology of mediterranean basins - Reducing uncertainties and quantifying risk

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According to future climate projections, Mediterranean countries are at high risk for an even pronounced susceptibility to changes in the hydrological budget and extremes. These changes are expected to have severe direct impacts on the management of water resources. Threats include severe droughts and extreme flooding, salinization of coastal aquifers, degradation of fertile soils and desertification due to poor and unsustainable water management practices. It can be foreseen that, unless appropriate adaptation measures are undertaken, the changes in the hydrologic cycle will give rise to an increasing potential for tension and conflict among the political and economic actors in this vulnerable region.

The presented project initiative CLIMB, funded under EC's 7th Framework Program (FP7-ENV-2009-1), has started in January 2010. In its 4-year design, it shall analyze ongoing and future climate induced changes in hydrological budgets and extremes across the Mediterranean and neighboring regions. This is undertaken in study sites located in Sardinia, Northern Italy, Southern France, Tunisia, Egypt and the Palestinian-administered area Gaza. The work plan is targeted to selected river or aquifer catchments, where the consortium will employ a combination of novel field monitoring and remote sensing concepts, data assimilation, integrated hydrologic (and biophysical) modeling and socioeconomic factor analyses to reduce existing uncertainties in climate change impact analysis. Advanced climate scenario analysis will be employed and available ensembles of regional climate model simulations will be downscaling. This process will provide the drivers for an ensemble of hydro(-geo)logical models with different degrees of complexity in terms of process description and level of integration. The results of hydrological modeling and socio-economic factor analysis will enable the development of a GIS-based Vulnerability and Risk Assessment Tool. This tool will serve as a platform for the dissemination of project results, including communication with and planning for local and regional stakeholders. An im¬portant output of the research in the individual study sites will be the development of a set of recommendations for an improved monitoring and modeling strategy for climate change impact assessment.

CLIMB is forming a cluster of independent projects with WASSERMed from the Environment and CLICO from Social Sciences and Humanities Call of FP7 in 2009. The intention of this clustering is to foster scientific synergy and cooperation between the partner projects to achieve improvements in policy outreach on different spatial scales.