

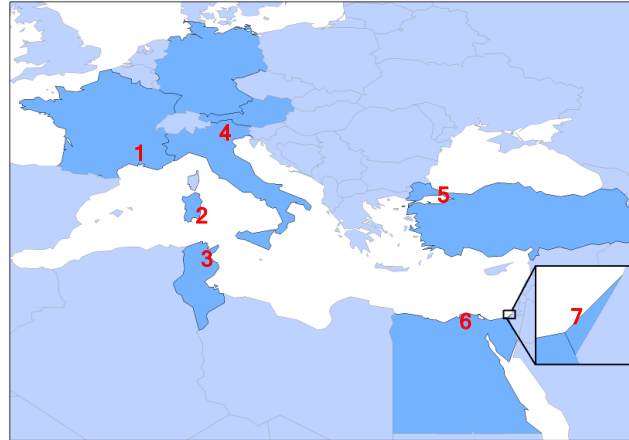
## The Partners

The CLIMB consortium is constituted by a total of nineteen partners, comprising four European Member States (Italy, Austria, Germany, and France), four SICA countries (Turkey, Tunisia, Egypt, Palestinian-administered areas) and one non EU member country (Canada).

- Ludwig-Maximilians-Universitaet Muenchen, Germany
- AGRIS Sardegna - Agenzia per la Ricerca de la Agricoltura, Italy
- Christian-Albrechts-Universitaet zu Kiel, Germany
- Centre national du Machinisme Agricole, du Genie Rural, des Eaux et des Forets, France
- Centre de Recherche et des Technologies des Eaux, Tunisia
- Consorzio Interuniversitario Nazionale per la Fisica delle Atmosfere e delle Idrosfere, Italy
- Centro di Ricerca, Sviluppo e Studi Superiori in Sardegna, Italy
- Deutsches Zentrum fuer Luft- und Raumfahrt e.V., Germany
- Forschungszentrum Juelich GmbH, Germany
- Gebze Yuksek Teknoloji Enstitusu, Turkey
- Institut National de la Recherche Scientifique, Canada
- Joanneum Research Forschungsgesellschaft mbH, Austria
- Université d'Angers, France
- Islamic University of Gaza, Palestinian-administered areas
- Università degli Studi di Padova, Italy
- Università degli Studi di Trento, Italy
- Zagazig University, Egypt
- VISTA Geowissenschaftliche Fernerkundung GmbH, Germany
- Bayerische Forschungsallianz gemeinnuetzige GmbH, Germany

## The Study Sites

An analysis of climate change impacts on available water resources is targeted on mesoscale river or aquifer systems. Selection criteria included an expected high susceptibility to climate induced changes in water availability, runoff-regimes, runoff extremes and water quality. The selected sites comprise one to several of the following components, which impose a threat on future water security: high agricultural productivity, irrigation, heavy multi-source nutrient loads and pollution, sea water intrusion or growing water use rivalries.



- 1) Thau - 280 km<sup>2</sup> - Coastal Lagoon - Southern France
- 2) Rio Mannu di San Sperate - 473 km<sup>2</sup> - Sardinia - Italy
- 3) Chiba - 286 km<sup>2</sup> - Cap Bon - Tunisia
- 4) Noce - 1367 km<sup>2</sup> - Southern Alps - Italy
- 5) Izmit Bay - 673 km<sup>2</sup> - Kocaeli - Turkey
- 6) Nile - 1000 km<sup>2</sup> - Nile Delta - Egypt
- 7) Gaza Aquifer - 365 km<sup>2</sup> - Gaza - Palest.-admin. areas

## Contact us

For detailed information about the CLIMB project, please contact:

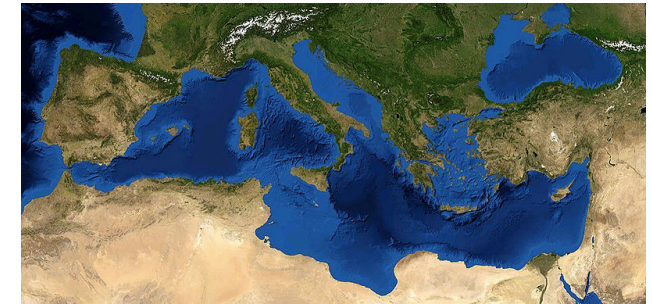
**Prof. Dr. Ralf Ludwig** (project coordinator):  
r.ludwig@lmu.de, +49-89-21806677

and

**Dr. Thomas Ammerl** (project management):  
ammerl@bayfor.de, +49-89-990188817

Please visit our website at [www.climb-FP7.eu](http://www.climb-FP7.eu)  
(available in early 2010)

# CLIMB



## Climate Induced Changes on the Hydrology of Mediterranean Basins

### Reducing Uncertainty and Quantifying Risk through an Integrated Monitoring and Modeling System

A 7th Framework Programme  
Collaborative Research Project  
(Environment, incl. Climate Change)



## Motivation

According to current 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 strong impacts on the management of water resources, agricultural productivity and drinking water supply. The regions of the Mediterranean landscape are already experiencing and expecting a broad range of natural and man-made threats to water security.

Threats include severe droughts and extreme flooding, salinization of coastal aquifers, degradation of fertile soils and desertification due to poor and unsustainable management practices. It can be foreseen that the changes in the hydrologic cycle will give rise to an increasing potential for tensions and conflict among the political and economic actors in this vulnerable region.



There are a number of major obstacles to implementation of adaptation measures designed to achieve sustainable management of water resources.

Effective adaptation measures need multi-disciplinary preparation. While there is scientific consensus that climate induced changes on the hydrology of Mediterranean regions are presently occurring and are projected to amplify in the future, little knowledge is available about the quantification of these changes, which is hampered by a lack of suitable and effective hydrological monitoring and modeling systems.

Current projections of future hydrological change, based on regional climate model results and subsequent hydrological modeling schemes, are very uncertain and poorly validated.

The conditions required to develop and implement appropriate adaptation strategies are lacking. If adaptation initiatives are proposed at all, they are rarely based on a multi-disciplinary assessment covering both natural and associated social and economic changes.

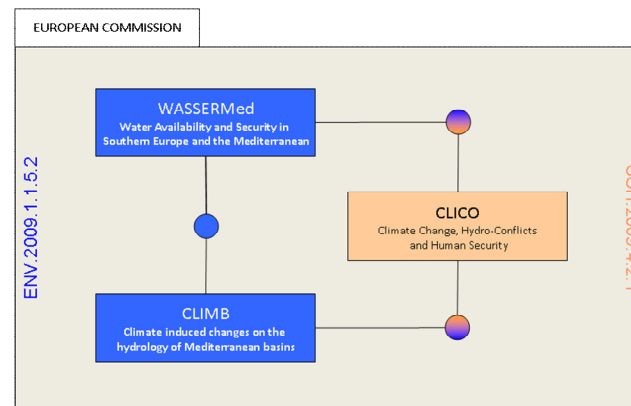
## Objectives

The strategy of CLIMB is aiming to employ and integrate advanced field monitoring techniques, remote sensing analyses and retrievals, climate models auditing and integrated hydrologic modeling and socioeconomic factor assessment in a new conceptual framework to significantly reduce existing uncertainties in climate change impact analysis. It will create an integrated risk assessment tool for adaptive water resources management and best agricultural practice under climate change conditions.

The risk and vulnerability analysis tool will also enable the assessment of risks for conflict-inducing actions. The improved models, new assessment tools, and their results will be evaluated against current methodologies.

Improvements will be communicated to stakeholders and decision makers in a transparent, easy-to-understand form, enabling them to utilize the new findings in regional water resource and agricultural management initiatives as well as in the design of mechanisms to reduce potential for conflict

CLIMB is embedded in a cluster of independent EU- projects with WASSERMed and CLICO, focused on climate induced changes in water resources as a threat to security.



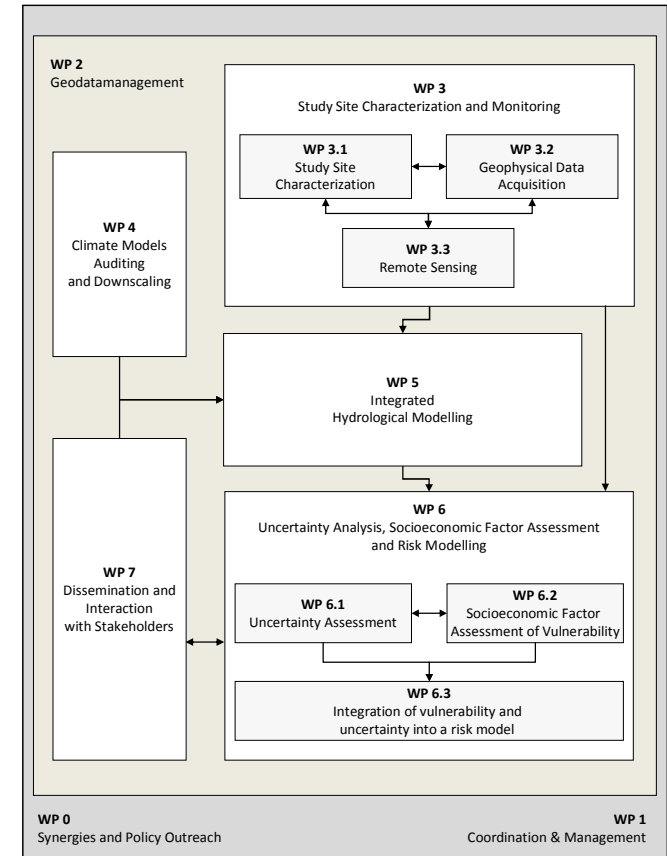
## Outreach

CLIMB kicks-off in January 2010 and is scheduled for a runtime of 48 months. In this period, CLIMB, will disseminate its findings through a comprehensive web-site, conference appearances, scientific and application-oriented publications, regular press releases and targeted policy briefings.

The project involves a large number of PhD students and an intense stakeholder dialogue to ensure human capacity building in the participating partner countries.

## Structure

CLIMB comprises eight Work Packages (WP). WP 0 is intended to identify and foster the scientific synergies between CLIMB, WASSERMed and CLICO to establish a more focused and efficient policy outreach.



WP 1 manages and co-ordinates the CLIMB Consortium internally. WP 2 is providing and developing the common data infrastructure for and throughout the project. The WPs 3-6 are focused on scientific research, development and innovation of technologies. None of these WPs stands alone, but they are interconnected by means of interfaces, dependencies and feedback loops to ensure an iterative reduction of uncertainty and a more accurate assessment of water related ecological and economic risk. WP 7 is devoted to the interaction with stakeholders. It builds upon the scientific progress and accounts for a coherent dissemination of project findings.