New tools for analyzing the impact of climate change

Climate and hydrologic changes lead to a significant reduction in water resources and agricultural productivity and are a threat to the Mediterranean region: efficient and sustainable adaptation measures must be adopted.

OBJECTIVE

CLIMB aims to develop innovative tools for assessing the risks and vulnerability of water resources as a result of climate change.

It is necessary to develop viable modeling and monitoring systems for the hydrological cycle in the Mediterranean region which are capable to providing rapid analyses of significant changes (droughts, floods, salinization of coastal aquifers, soil degradation…), possible sources of tension and conflict between political and economic actors.

CLIMB aims to develop innovative tools and methods which, while reducing uncertainties in analyses of climate change, will permit the introduction of adaptation strategies for sustainable management of water resources.

Concrete means and measures to be put in place

The project will establish supervisory networks for the resource and carry out field studies (collection of data on geophysical elements, monitoring of water and vegetation dynamics, analysis of socio-economic factors, etc.). High resolution space detection techniques (radar and optical) will permit an evaluation of various useful parameters for modelling (cover, humidity and roughness of soils, structure of vegetation, etc.). Integrated innovative approaches (improvement of current algorithms, models for risks, etc.) will be used.

The impact of climate change on water resources will be analyzed and compared at seven experimental sites in Sardinia, Northern Italy and Southern France, Turkey, Tunisia, Egypt, and the area administered by the Palestine Authority in the Gaza Strip; they will be used to develop different climatic scenarios.

A Geographical Information System will be developed as a tool for assessing the vulnerability and risks. It will also act as a platform for circulating the project’s results, for communicating with and planning for local and regional actors, as well as holding discussions and comparing results between teams working on the project.