

## Call for Research and Surveys on Climate Change: CIRCLE-MED 2007

### Research Subjects:

#### 1. Adaptation Strategies and Tactics in the water sector and coastal zones

- **Urban zones:** Maintaining recharge areas in the urban environment to cope with extreme storms and facilitate recharge of aquifers, optimize reclamation of wastewater in a sustainable manner.  
How to design sewage networks in ways that are sustainable for society and that preserve or improve human health. More specifically, the problem of hydric diseases provoked by the dysfunction of marshy and coastal waters should be dealt with.
- **Agriculture:** new production schemes, efficiency improvements in plant water use, techniques of precise transport of water to plants. Utilization of treated waste water.
- **Industries:** improving techniques for optimal use of water in industrial processes may derive from more severe constraints on water availability.
- **Tourism:** consequences of new sea-resorts, importance of sea water quality in natural preserved zones.

#### **Climate change and coastal ecosystems/water resources management:**

estuaries, lagoons, terrestrial ecosystem structure, processes and services affected by climate change and related changes in water resources.

#### **Coastal zone/marine ecosystems and water management, which include:**

- Studying the impact of climate change '*drivers*' on the coastal zone through scenario simulations;
- Determination of the changes in the surface water and the coastal areas environmental conditions subject to such drivers;
- Determination of the changes in the organisation and functioning of biological communities and ecosystems subject to such drivers;
- Determination of the role that natural ecological processes and structural complexity play on the resistance of aquatic ecosystems to such drivers, and on the supply of genetic resources needed for a long-term adaptation;
- Estimation of the impacts on natural resources and human activities in the coastal area;
- Proposal of management solutions and investment plans

#### **2. A New Equilibrium In The integrated management of Water Resources and coastal resources**

- a) How to rationalize, govern and put into action the trade-off between water uses in the perspective of climatic change (IPCC scenarios give good frameworks for guiding the conceptualization of this question).
- b) Regulation between regions, spatial heterogeneity of the resource and the importance of watersheds in creating or regulating this heterogeneity may be important and could transform the way we think about collaboration and

competition between zones; in some cases, trans-boundary problems may shift the equilibrium between nations.

- c) In all cases, at the planning level, innovative actions are to be elaborated for all kinds of resource allocation managements.