MEDCODYN

CIRCLE
Climate Impact Research Coordination for a Larger Europe

Climate change impacts in transitional water systems in the Mediterranean (CIRCLE MED Adaptation Strategies in the Water Sector and Coastal Zones)

University of Siena
(Consorzio Interuniversitario CSGI)

with the collaboration of
University of Casablanca
(Morocco) and SPANA
(NGO in Morocco)

Project Goal

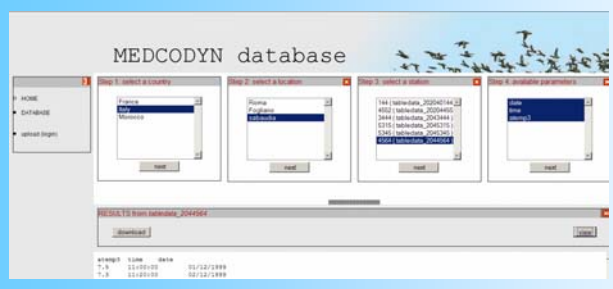
To develop long term strategies for the management of coastal multiuse ecosystems in the Mediterranean, taking advantage of the consequences of short, medium and long term changes in climate conditions.

Objectives

•Gain critical information about the state of transitional water bodies in the Mediterranean,
•Favour collaboration between scientific, administrative and policy levels through the participation by relevant stakeholders,
•Understand the combined effects of human activities (economic and non- economic) and climate change in coastal multiuse ecosystems.

Project Activities

Open information base of coastal transitional ecosystems



The Medcodyn database structure was completed in May 2009 and testing followed. Close collaboration was necessary to determine the correct variable list and user interface. Uploading of specific hydrological, chemical, biological and climatological data began in July 2009. The online database is housed on a dedicated server at the University of Siena. Requests for collaboration with other CIRCLE-Med projects have been made.

Medcodyn researchers Rhazi Mouhssine (FST-Errachidia), Margherita Falcucci (CRA), Laila Rhazi (Univ. Casablanca) Dino Dattilo (CSGI) and Vincent Hull (CRA) discuss sampling strategies at Sidi Boughaba (Morocco) in June 2009.

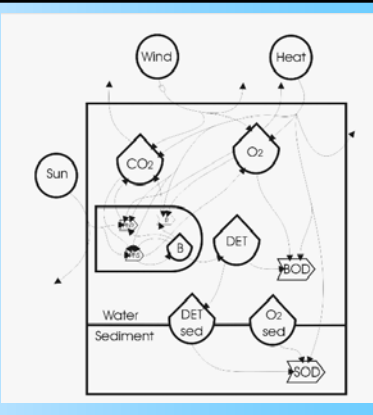
Collaborative measurements were made with the support of the Sidi Boughaba Nature reserve, in particular Nouhed El Ouadihi

Scientists from CSGI (Dattilo,Tognazzi, Bracchini), TdV (Grillas, Chauvelon, Loubet), Univ. Casablanca (Rhazi) and CRA (Hull) discuss database development in the kickoff meeting in Sabaudia (Italy) on December 2008.

A measurement campaign was performed by CSGI and CRA in Fogliano Lagoon in May 2009

Assessing vulnerability using models and indicators for coastal ecosystems

Ecological models are under development, based on historical data and in situ data obtained in collaborative measurement campaigns made in May 2009 (Sabaudia, Italy) and June 2009 (Sidi Boughaba, Morocco). Collaborative research has allowed for the development of innovative approaches and models.



Model of dissolved oxygen dynamics for the Pontine lakes

Exploring adaptation options

Data are being assembled and models developed for adaptive management proposals.

For the coastal Pontine lagoons (Italy):
Hypersaline conditions compromise the lake functioning,sea level rise
possible input of freshwater from the river or from ground water after treatment (phyto-remediation), harvest vegetation in the lagoon to prevent accumulation of organic material.

For the coastal lake at Sidi Boughaba (Morocco):
Aquifer salinisation, and a general lack of basic information for management development.
In July 2009, a collaborative field campaign was performed, setting baseline measurements and contributing to a long term monitoring plan, using low tech long term monitoring.

Etang du Vaccares (Camargue, France):
hydrological and salinity conditions strongly modified by catchment water management, inflow of xenobiotics, sea level rise
Hydrological and chemical models are being developed considering climate change

Patrick Grillas, Abdelhamid Belemlih and Abdallah El Mastour initiate the scenario workshop in Mehdia (Morocco) in June 2009. The workshop set the basis for the construction of a management plan for Moroccan coastal wetlands and lakes.

The need for monitoring, education and enforcement were key results of the SWOT analysis

Vincent Hull (CRA) makes a statement during the scenario workshop in Villa Fogliano in December 2008.

Using a SWOT analysis, key steps to meet optimum future scenarios include:
• Increase stakeholder involvement.
• Mainstreaming of research results in policy
• Favour extensive agriculture practises locally