



## Integrated water management in coastal water drainage basins

The proportion of Mediterranean populations suffering from water poverty - i.e. countries with less than 1,000 m<sup>3</sup>/ha/year - could reach 250 million people by 2025, of whom 80 million will be experiencing a serious shortage - less than 500 m<sup>3</sup>/ha/year - (Plan bleu). Better water management is desperately needed

### OBJECTIVE

Financed by CIRCLE-MED, the **Waterknow** project's objective is to develop decision support tools for integrated management for freshwater resources in the context of climate change (GIEC scenarios A1B and A2).

To achieve this, Waterknow has taken a multidisciplinary approach and used the following methodologies: analysis of land use in the drainage areas studied; hydrologic modelling that takes into account the impact of land use and agriculture in the water cycle; modelling of underground water which takes into account the salt water intrusion in aquifers; socio-economic analyses; and finally development of a decision support tool which takes into account the needs of various uses and users of water.

### Collecting information in the field

The researchers involved in this pro-

ject will have access to field information collected at drainage sites in Italy, Morocco and Portugal. They will bring together essential information on water use and needs directly from users. Initial discussions show that the main threat, identified by users in terms of climate change, is the salt water intrusion in aquifers, but nothing has been done yet to solve this problem.

### Development of scientific models

In the second phase, Waterknow will develop two types of models:

- spatial interaction models relating to human and coastal land use, which will demonstrate that economic, technological, environmental and regulatory issues are interdependent;
- models for helping management of resources and freshwater catchments all year round.

Two objectives have been set: selection of cereals that need less water, and monitoring of saltwater intrusion in various aquifer areas.



*Mediterranean coastline.*

### Results and perspectives

These models should contribute to the development of water management policies in the Mediterranean that are adapted to the region's specific conditions, future prospects due to climate change, and also the real needs and constraints of users.

In the end, the most important objective is to fight against the progressive desertification of a large number of Mediterranean countries.