



Innovative technologies and integrated water management in the Mediterranean

Given the rarity of fresh water in Mediterranean regions, it is useful to identify potential alternative water resources, such as karst coastal aquifers

OBJECTIVE

MEDITATE aimed to resolve the problems involved in water resources management and, in particular to assess the potential offered by the catchment of submarine springs.

MEDITATE took place as part of the INCO-MPC (Mediterranean Partner Countries). The project adopted a multi-disciplinary approach in order to deal with water management at the Mediterranean regional level. Its aim was to develop a decision-making support system which could integrate various types of information (physical, socio-economic, etc.) and to involve a large number of actors. As a result, it not only analyzed the potential of submarine karst resources but also took into account water policies in four catchment areas in Lebanon, Jordan, Turkey and Syria.

Alternative water resources

In order to manage water scarcity, this project studied the possibilities for exploitation of alternative water resources such as submarine karst springs, desalination of brackish or sea water, and reusing waste water, while taking into account economic and environmental issues.

Innovative techniques and approaches

An autonomous submarine ship was exploited to collect bathymetric data and take up various parameters relating to underwater springs (temperature and salinity).

The project has thus shown that real flow rates of karst resurgence in the sea had been systematically overestimated by a factor of 10, rendering their exploitation of little interest. It is nevertheless important to monitor submarine springs in terms of environmental management of karst coastal aquifers. On the other hand, the participation of actors has emerged as particularly pertinent for setting up an adapted scenario for the integrated management of water resources. Participative workshops have ensured that the concerns expressed by the local populations and a wide diversity of opinions have been taken into consideration, rather than just concentrating on the technological aspects of water resource management. The cost efficiency analysis of various management possibilities has helped the participants to take more rational, more efficient and economically sound decisions.

In conclusion, the project reinforced hydrogeological expertise in the Mediterranean Basin's eastern regions – particularly in terms of karst aquifers and the risk of saline intrusion – and informed the population about the need for rational management of water resources.



Catchment of a submarine spring in Syria - Banyas sector.



Bay of Gökova (Turkey) with coastal and submarine springs (red circles).