Participatory design of adaptive ground water management strategies in Mediterranean coastal water scarce areas as a response to Climate change

Aquimed

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Mediterranean coastal aquifers are increasing used, which often leads to quality and quantity water related problems. Climate change will exacerbate this growing tension over the resource, due to increases in crop water demands (leading to increased pumping) and possibly decreasing rainfall. This will produce decreasing water tables and saline water intrusion. Moreover, in these aquifers, the high number of small-scale users leads to specific challenges in terms of user participation and groundwater management.

In this context, new groundwater management practices have to be developed to prevent further degradation of groundwater resources and to support water users' adaptation to increasing water scarcity.

Objective

The AQUIMED project aims at addressing this challenge through the development of methods to support stakeholders' capacity to anticipate future changes in order to:

- Enable water users to better adapt to increasing variability of the resource;
- Preserve groundwater resources
- Improve the integration of water resource challenges in regional development planning.

The three coastal case studies are the Roussillon Plain in France, the Querença-Silves Region in Portugal, and the Chaouia Region in Morocco.

Photo: Matthieu Dionnet

Methods

The project activities are organized around 4 components.

- An initial analysis focused on the **perceptions of the local populations of the climate and water resources variability**, and on their vulnerability to such variability.
- **Forecasting approaches** will be undertaken with groups of users. Scenarios of possible evolutions of local economic activities and of water resources variations (based on model simulations of climate change) will be constructed. Workshops will be conducted at both local (user groups) and aquifer level to define and compare adaptation strategies that may take into account groundwater management instruments.
- An analysis of **institutionalized participatory processes for groundwater management** will be conducted, and will examine in particular how resource management issues are defined and included into wider discussions on the development choices in the study areas, and in particular the place of agriculture.
- Networks of **exchange** between stakeholders and researchers from France, Morocco and Portugal will be developed.

3 sites

Photo: Dominique Rollin

The Querença-Silves Region, Portugal

Photo: Nicolas Faysse

The Chaouia Region, Morocco

Photo: Jeanne Riaux

The Roussillon Plain, France

Scientific Partners

CIRAD (France)
SOCIUS (Portugal)
BRGM (France)
CEMAGREF (France)
Ecole Nationale d'Agriculture (Morocco)
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