SAVING FRESH GROUNDWATER
IN COASTAL REGIONS

Summary

New innovative airborne mapping, online monitoring and coupled ground-watersurface water modelling are offering society new ways of managing Sea levels changes and the threat to the freshwater lens, The solutions are cost-effective on a regional scale, transferable to other EU regions and exportable worldwide.

In low-lying coastal areas, sand dunes host important freshwater lenses. These freshwater resources support surface water ecosystems, and many communities are dependent on them for drinking supplies and water for agriculture. To protect this vital resource, realistic and well-calibrated integrated groundwater models are required, which in turn rely on large amounts of high quality subsurface data.

Main Benefits

Better water management:

» Models are used to forecast hydrological conditions and the ability to extract groundwater. In this way, money can be saved and sustainable ecosystem services can be safeguarded.

» In addition, the tools and methods developed support the implementation of the Water Framework Directive and the EU white paper 'Adapting to climate change: Towards a European framework for action'.

Economy/Job creation:

» Devloping new techniques for data aquisition and SME startup of the business SkyTEM is creating jobs in the region. The company is expecting to triple the flght kilometers from 2011 to 2012.

Innovative aspects

» Smarter and faster data acquisition techniques have been developed.

» New airborne systems, for example, enable the collection of huge datasets in just a week, without disturbing ground activities, whilst online monitoring enables long distance access to large amounts of field data.

Boosters for Implementation

» A skilled project partnership allowed the development of technical methods concerning groundwater, geology and chemistry.

» Funding from the InterReg IVB programme gave the local water company the ability to use and test an uncertain method. An open minded approach from the local water company supported the implementation of new methods.

» Cooperation between institutions and countries made it possible to transfer best practice between countries in the pilot studies.

Barriers for Further Implementation

» There is a tradition of thinking in terms of national implementation and use of methods. Transnational thinking should be encouraged.

How to Get Over Barriers

» A common database and data platform would increase the possibility and efficiency of data transfer.

» Improving the conditions to work together across regions in Europe e.g. on transnational case studies will stimulate the transfer of knowledge and concrete collaboration across boarders.

» Clustering as a means of transferring methods between disciplines has been proven to be a good tool.

Policy Recommendations

» To overcome the barriers we propose the establishment of a unit or “innovation office” to help develop and prepare tools for the market, overcome financial barriers and develop implementation strategies. From the CLIWAT project an export package can be developed for climate change adaptation in other coastal regions.

» The change in groundwater systems is a hidden problem beneath our feet. New online results from the coupled groundwater models can describe future groundwater conditions, rather like weather is forecasted today. These forecasts should be available from a web portal to raise awareness of present and future conditions and challenges affecting dependent sectors.

More Information

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European Union The European Regional Development Fund

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Investing in the future by working together for a sustainable and competitive region

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