

FREEWAT is an EU HORIZON 2020 project aiming at promoting water resource management by simplifying the application of the Water Framework Directive and other EU water related Directives by means of innovative GIS integrated open source and public domain ICT simulation tools (the FREEWAT platform).



Decisions on water management and planning, to practically apply the Water Framework Directive 2000/60/CE (WFD) and water related directives are often made on geographically lumped 20/30 years average water budgets. The WFD required an increase in monitoring activities on water quantity and quality; this in turn led to the availability of time series that allow the implementation of more efficient water management tools. At the same time, many water authorities still rely on professionals with limited capabilities on the use of new technologies dedicated to water management, such as modelling.



Also, the value of using advanced technologies in water management is often diminished by the fact that stakeholders are involved only in the final phase of the process when technical results are already produced.



such, ICT-tools As available at EU level performing spatially and temporally based analysis will greatly help to exploit the information content of hydro recorded/ monitored data and to get a better insight in the management of water bodies. The next need consists in overcoming the lack of participatory approaches in using advanced ICT tools for evidence-based decision making by involving the stakeholders throughout the whole technical part of water management.

www.freewat.eu

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FREEWAT Objectives

The FREEWAT project aims at improving Water Resource Management (WRM) by achieving the following specific objectives:

(i) to coordinate previous EU and national funded research to integrate existing software modules for WRM in a single environment;

(ii) to provide EU Governing Bodies, Authorities and Water Utilities and environmental companies/water professionals with innovative, free and open source software tools having friendly usability;

(iii) to build knowledge and capacity in the use of scientific software technologies, by improving the professional level of technical and managerial personnel involved in WRM issues in public institutions and private companies;

(iv) to support the FREEWAT application in an

innovative participatory approach gathering technical staff and relevant stakeholders in scenario creation and simulations to apply and develop appropriate water policies;

(v) optimising the use of water resource monitoring data, by obtaining results for the solution of issues such as: water availability and quality, groundwater pollution monitoring and remediation, and coping with seawater intrusion;

(vi) building a web based community of users and developers of the free and open source FREEWAT platform;

(vii) contributing to the creation of innovative companies and work places that will exploit and continue the integration, development and training on the FREEWAT platform.

The FREEWAT platform will be integrated as plugin into the QGIS GIS desktop and will be based on groundwater and solute transport numerical models (from the MODFLOW USGS family). It will also include modules for solute transport in the unsaturated zone; water management and planning; Observations Analysis Tools (OAT); calibration, uncertainty and sensitivity analysis; management of water in agriculture; tools for groundwater quality issues; tools for the analysis, interpretation and visualization of hydrogeological data.

The FREEWAT platform will be applied to 10 case studies within the EU, 3 case studies in neighbouring countries (Switzerland, Turkey and Ukraine) and to a large trans-boundary aquifer in Africa. The case studies will address different issues on WFD, GWD and other water related Directives and also rural water management topics.

