FREEWAT
Free and Open Source Software Tools for Water Resource Management
EU HORIZON 2020 Project

Policy Brief
N. 4/7

Introducing the participatory approach in FREEWAT

Key Policy Messages

- ✓ Technical needs and stakeholder participation in the River Basin Management Plans
- ✓ A timeline to the objective and the importance of a collaborative environment
- ✓ New challenges for ICT in water resource management

WHAT H2020 FREEWAT is

FREEWAT is an HORIZON 2020 project financed by the EU Commission, aiming at promoting water resource management through innovative ICT tools and participatory approach.

Main result of the project is the free and open-source FREEWAT software: a QGIS integrated environment, where several simulation codes, based on the hydrological cycle, hydrochemical or economic-social processes, are integrated in a unique GIS project for conjunctive use of surface- & ground-water.

This Policy Brief is part of series of seven whose goal is to illustrate the FREEWAT approach and achievements.

The FREEWAT project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n. 642224.

FREEWAT
Free and Open Source Software Tools for Water Resource Management
EU HORIZON 2020 Project

ict4water.eu

Technical needs and stakeholder participation in the River Basin Management Plans

The FREEWAT platform can produce by means of numerical models scenarios helping decision and policy makers to get scientifically and technically sound solutions, based on available data.

The participatory approach may be a method to include the stakeholders participation during the phase of River Basin Management Plan (RBMP) definition within the context of the Water Framework Directive.

The formation of RBMP, when appropriately performed, may need high level analysis, which require usually several months to produce results. These achieved results, in turn, may include a relevant number of uncertainties – meaning that in the end there is not an unique solution to a certain issue. Stakeholders (environmental protection agencies, water utilities, environmental associations, local authorities, farmer's associations, environmental associations, etc.) are asked to provide their views and suggestions. But when these results are achieved it is very difficult to take into account the stakeholders desiderata, although reasonable and revamp again the analysis.

Within the H2020 FREEWAT project an experiment was performed which consisted in running the technical analysis as long as they were produced together with stakeholder meetings.

At each FREEWAT case study, stakeholders were asked to participate to seven Focus Groups where their views and suggestions were taken in account. Also, stakeholders had the chance to increase their understanding in water management issues. This finally helped in creating a common space to generate shared knowledge on the value of water.

A timeline to the objective and the importance of a collaborative environment

When introducing stakeholders in discussing pratical issues is fundamental that clear objectives are set within a well defined timeframe and that a collaborative climate develops.

At the Follonica-Scarlino (Italy) case study, Regione Toscana, a regional government authority partner in the FREEWAT project, led interesting Focus Group sessions. The participatory approach experiment was divided in three blocks. In the first block (from Focus Group 1 to 3) the stakeholders were involved to identify the case study objectives and in discussions on data availability and reliability. The second part aimed at detailing the case study water management issues (from Focus Group 4 to 6), while the final part (Focus Group 7) was dedicated to summarize the results and to collect feedbacks.

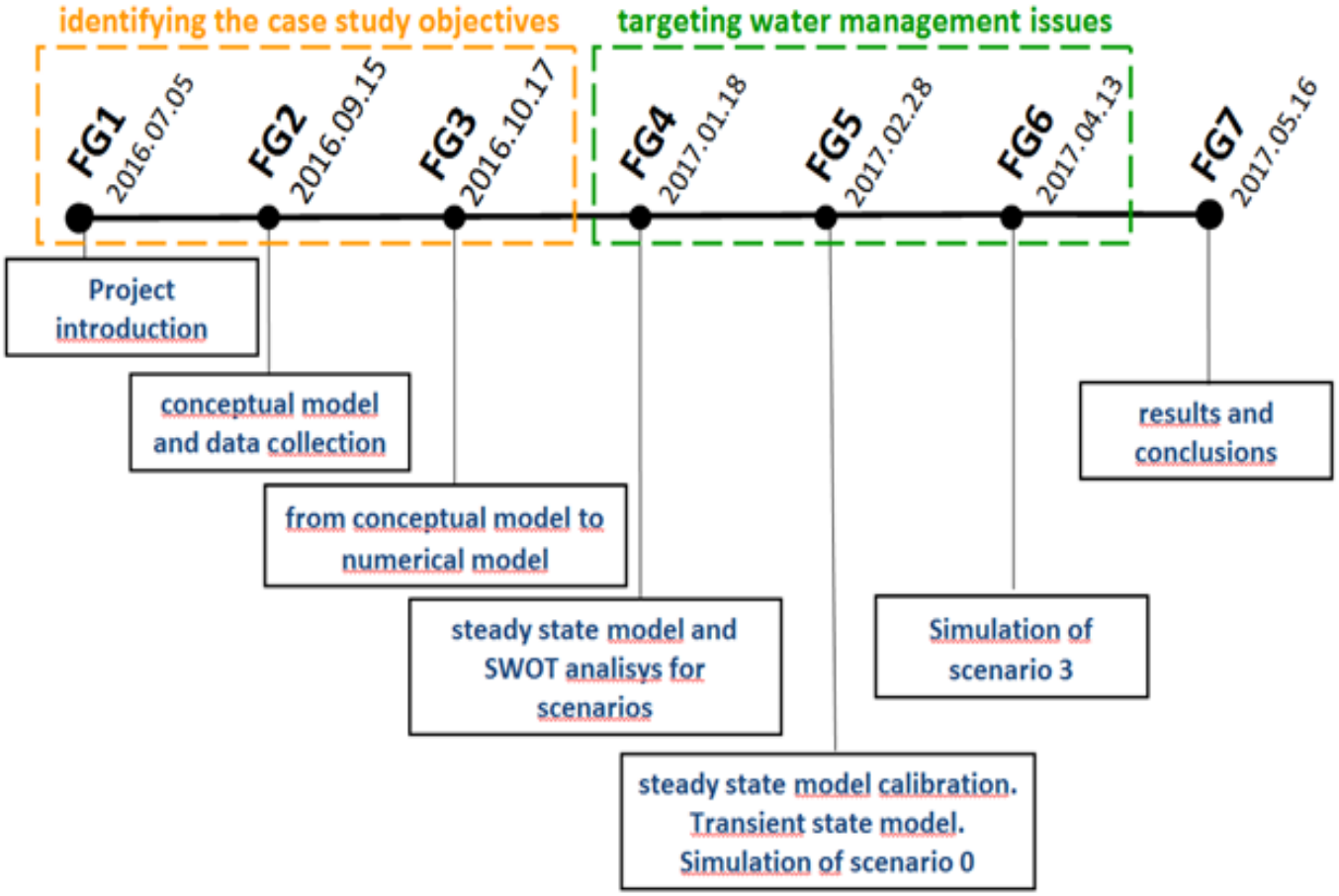
The Follonica-Scarlino case study concerned mainly the experimental assessment of plans and measures in accordance with the WFD.

The River Basin Management Plan (RBMP) compiled by Northern Apennines District Authority indicates for this groundwater body a severe quantity gap and the target is the achievement of a "good" status in 2027, through series of programmed measures.

According to the problem and to the target water policy, the case study helped to test some of the solutions to increase groundwater resource availability and to provide a reliable support to decision makers through the participatory approach.

As a first step, understanding how water management issues were perceived in the case study area and how much the stakeholders believed that new technologies could improve water management was needed.

This approach helped to create a collaborative climate within the working group and to reach a shared awareness of the available data set in order to build the numerical model. The first effect of this good social climate was that the involved stakeholders provided themselves the missing data set for the numerical model.



FREEWAT
Free and Open Source Software Tools for Water Resource Management
EU HORIZON 2020 Project

ict4water.eu

New challenges for ICT in water resource management

Introducing the participatory approach in the technical part of the game brings new challenges for ICT in water resource management. The number of attendees changed from a meeting to another. In particular, a group of them, from seven to ten people, participated to almost all the seven meetings and was the core of the Focus Group. They were from local decision and policy makers, public universities and national research centres, water utilities and industries, geo-engineering companies and professional, agro-food industry, farmers associations, environmental associations, touristic operators, energy managers and labour unions. At the case study scenarios to be tested were chosen using workgroup techniques, in particular SWOT analysis (Strengths, Weakness, Opportunities, Threats) and brainstorming sessions. Two scenarios were simulated with FREEWAT platform, the construction of a desalination plant, as alternative source of drinkable water supply, and the re-use of Gavorrano Mine drainage for industrial purpose.

Both simulation results shown, the greater or lesser effectiveness of the proposed technical solutions for the achievement of the objectives set out in the RBMP. The FREEWAT platform has therefore proved to be a powerful tool for water resources management with particular strength referring to: data collection and sharing, simulation of scenarios, support of planning and decision-making process, support in participatory and advisory procedures.

The FREEWAT project gave the opportunity to organize the huge amount of data collected for the Follonica-Scarlino aquifer basin and its participatory approach has proved to be crucial for a collaborative and synergic work with the stakeholders and among them. Moreover, this kind of approach was useful:

- to enhance quality and quantity of data available for the numerical model;
- to grow up the importance of water resource management and planning not only in emergency situations like drought or flood events.

Important solicitations and new challenges derived also from the interaction with the stakeholders who stated as priority the translation of the case study to a real-world application in the study area, as soon as possible.

REFERENCES
For further details, the reader is referred to:
Positano, P., Nannucci, M., 2017. The H2O20 FREEWAT participated approach for the Follonica-Scarlino aquifer case study. A common space to generate shared knowledge on the value of water. Acque Sotterranee – Italian Journal of Groundwater. 6(3), 27-39. doi: 10.7343/as-2017-290

Authors: R. Rossetto[a], M.S. Nannucci[b], P. Positano[b], G. De Filippis[a],
Affiliations: [a] Scuola Superiore Sant'Anna, Pisa, Italy
[b] Regione Toscana, Firenze, Italy

More info at: www.freewat.eu