

THE BEWATER PROJECT PROMOTES DIALOGUE BETWEEN THE SCIENCE AND SOCIETY ON THE FUTURE WATER MANAGEMENT IN FOUR MEDITERRANEAN CASE STUDIES

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(3.2 Stakeholder's perceptions of water related ecosystem services)

Topic of this work

Stakeholder participation in water management.

Research question (or operational application)

The Mediterranean region is expected to become one of the most vulnerable areas in Europe and in the world regarding global change. Observational studies have already revealed a global trend toward warmer conditions and changes in seasonal rainfall patterns during recent decades.

The Vipava River Basin (RB) in Slovenia, La Tordera RB in Spain, Pedieos RB in Cyprus and Rmel RB in Tunisia are four case studies selected in the BeWater project (7FP Science in Society) to making society an active participant in water management adaptation to global change. These four case studies are representatives of various Mediterranean conditions with regard to climate, topography, environment, socio-economic and political conditions, land use and water demands.

The overall aim of BeWater project is to promote an iterative dialogue and mutual learning collaboration processes between science and society to establish, using a multidisciplinary, bottom-up and participatory approach, plans for sustainable water management and global change adaptation in four Mediterranean River Basins (RBs). BeWater aims to (a) improve public awareness of the importance of sustainable water management, (b) develop innovative processes of mutual learning and (c) create more social responsibility in this area. These three factors are key to defining and implementing successful adaptation strategies and policies.

Originality of this work

BeWater aims to launch an innovative process of societal transition towards a more sustainable, resilient and adaptive river basin management. In the project context, transition means to foster mutual learning processes in order to change the way RBs are managed, focusing on Mediterranean region. Indeed, adapting to more adverse environmental conditions which may result from climate change requires

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dynamic practices allowing citizens to actively play a role in the decision taking processes. This approach emphasizes the need to change with the environment and 'learning by doing'.

The selection of small RBs as case studies is essential for the BeWater approach. The choice of small areas provides a simplified complexity and facilitates understanding of the basic processes which underpin RB dynamics. Small areas, highly monitored and scientifically assessed, facilitate the identification, establishment and control of cause-and-effect relationships among processes involved, enabling the design of a methodology which can later be out-scaled and extrapolated to more complex systems. Additionally, essential links between society and territory are much stronger at this spatial scale. BeWater invites each case study RB to generate a specific adaptive management plan proposal and by sharing the experience, aims to pilot other RBs facing similar global change challenges.

Method

Within the BeWater project, two highly interactive stakeholder workshops (WS), additional interviews and individual or group sessions were carried out with the aim to identify, formulate and evaluate water management options (WMOs) in each RB. In the first stakeholder WS round in 2014 and additional interviews, information on the current state and future expectations regarding water management in each RB were identified. Afterwards, written and graphical narrative in the form of a Fuzzy Cognitive Map (FCM; a graphical representation of a system) of the RBs was developed with active stakeholder participation based on main challenges identified. The development of the FCMs was done in parallel to the identification and formulation of WMOs to allow assessment of the impact of different WMOs by using the FCMs. The WMOs were characterized using a fixed set of descriptors. Within the second stakeholder WS round carried out in 2015, discussion and evaluation of WMOs with key stakeholders was performed. The evaluation of WMOs was carried out with the help of multicriteria analysis (MCA), where factors derived from the basin's FCM, and WMOs characterization criteria were used. In addition to a MCA, a simple cost-benefit analysis (CBA) will be performed for all WMOs, to help develop an adaptation management plan for the RBs.

Main results and discussion

The BeWater project is in progress and the following results are expected: Design realistic WMOs and an adaptation plan for each case study RBs; Foster environmental and societal resilience at river basin level through an integrated, stakeholder-driven water management planning; Enhance knowledge on water governance through collaboration between science and civil society; Strengthen public awareness on the urgency and relevance of tackling the effects of global change, as well as community empowerment towards adaptive water management; Share common challenges, lessons learned and best practices on adaptive water management planning in the Mediterranean and Transfer scientific results to policy options for response measures to face global change impacts.

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