Fact sheet



THE GUADIANA RIVER BASIN

The Guadiana River Basin (~67.133 km2) is shared between Spain and Portugal. The Guadiana originates in the *Lagunas de Ruidera* in central Spain and flows 742 km into the *Gulf of Cádiz* at the Portuguese coast. The study focus was put on the Upper Guadiana Basin (UGB) which spans about 16.000 km² of the southeastern part of Spain's Central Plateau (figure 1). Half of this surface is located within the province of *Ciudad Real*, while three other provinces of the *Castilla-La Mancha* Autonomous Community (*Cuenca*, *Toledo* and *Albacete*) account for the rest. The climate is semi-arid with an average rainfall of 415 mm/yr; hence the UGB is one of Spain's driest areas.

SOCIO-ECONOMIC DESCRIPTION

Average population density of the UGB is 26 hab/km², significantly below Spain's 78 hab/km². The UGB comprises 140 municipalities whereas large urban agglomerations are absent.

Agriculture maintains a strong presence in the area where groundwater exploitation helped transform a largely poor rural region into an agricultural and industrial centre. Major problems have arisen - since 1970 - as a result of uncontrolled groundwater development. Aquifer level decrease causes wetland degradation of the *Las Tablas de Daimiel* National Park. This situation essentially induces conflicts between farmers' socio-economic interests and environmental conservation groups.

WATER MANAGEMENT ORGANISATIONS

The UGB is under the jurisdiction of the Guadiana River Basin Authority which depends functionally on the Ministry of the Environment.



Figure 1: Guadiana Basin; divided into Upper, Middle and Lower Guadiana (source: CHG, 2009).

NEWATER PROJECT

The Guadiana River Basin is one of seven cases studied in the NeWater project.

RESEARCH OBJECTIVE

The main objective of NeWater was to understand and facilitate change towards adaptive strategies for Integrated Water Resources Management (IWRM). The research in the Guadiana basin aimed to create awareness for the need of adaptive management practices and to develop tools which support diverse stakeholders' goals and values.

PROJECT CONTENT (5 MAIN FRONTS):

- 1) Stakeholder engagement and involvement via a series of thematic stakeholder meetings (including all key basin actors; national and regional government departments, Guadiana Water Authority, water user associations, farmer unions, environmental conversation groups)
- 2) Training and dissemination of NeWater knowledge
- 3) Development of hard-science approaches focused on the development of adaptive management tools requested by stakeholders (e.g. hydrological and agroeconomic modelling) with the aim of analyzing policy scenarios and their socio-economic impacts on farms, considering the environmental, social and economic vulnerability of main actors involved in water use
- 4) Application of Bayesian networks for developing stakeholder process to test different management options and to assess their consequences, e.g. tradeoffs between agriculture and environmental sustainability
- 5) Estimation of the Water Footprint of the whole Guadiana basin by including transboundary cooperation between riparian states

(ADDITIONAL INFO ON WWW.NEWATER.INFO)

ABOUT TWIN2GO

Twin2Go reviews, consolidates, and synthesises research on adaptive and integrated water resources management in basins around the world. The aim is to draw insights relevant to policy and research on issues around adaptive water governance in the context of climate change, and to make them transferable to other basins. Twin2Go further promotes sharing of research results with practitioners and high level decision makers through effective dialogue.



