Iberian Trans-boundary Water Management

IB-TWM

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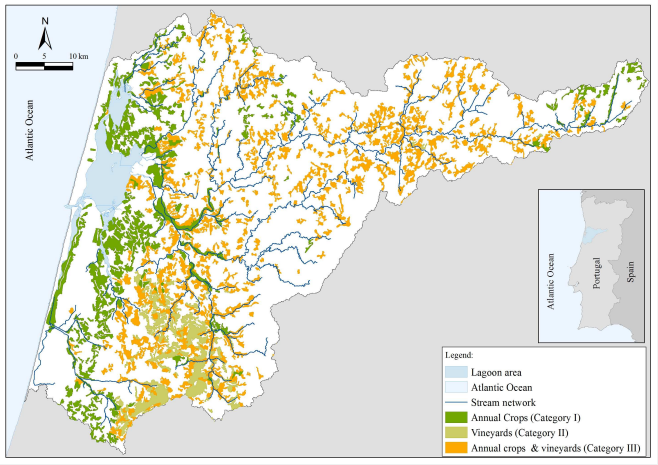
Iberian Trans-boundary Water Management (IB-TWM): experiences from the past and approaches for the future

The application of SWAT to the Vouga catchment is at an advanced stage - currently undergoing an iterative calibration process. First results have been presented at international conferences (Ibérico VII; SWAT 2011) and submitted to international journals (JEQ)

Using SWAT to estimate DIN water pollution abatement cost functions in Central Portugal

To warrant sustainable economic development of coastal regions we need to balance marginal costs from coastal catchment water pollution abatement and associated marginal benefits from coastal resource appreciation. Diffuse-source water pollution abatement costs across agricultural sectors are not easily determined given the spatial heterogeneity and the available range of best agricultural practices (BAPs) for water quality improvement. We demonstrate how the Soil and Water Assessment Tool (SWAT) can be used to estimate diffuse-source water pollution abatement cost functions across agricultural land use categories – based on a stepwise adoption of BAPs for water quality improvement and, corresponding, SWAT-based estimates for agricultural production, agricultural incomes, and water pollution deliveries. Results for the case of Dissolved Inorganic Nitrogen (DIN) by the key agricultural categories in the Vouga catchment, show that no win -win agricultural practices are available within the assessed BAPs for DIN water quality improvement.



A specific application of SWAT is prepared for the Cértima catchment, to assess and compare the cost-effectiveness of nitrogen management practices across key agricultural land use categories

Identified best practices for nitrogen (N) management (including reduced N application rates, split N application and/or slow release N application) are assessed using plot-scale land use and management practice information, catchment-scale water quality modeling and integrated financial-economic analysis.

The application of SWAT to the Minho catchment is in preparation!

Data compilation has started (using Portuguese and Spanish sources), focusing on topography, land use, soil type, lithology, geology, climate, hydrology, water quality, stream network and reservoir data.

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CESAM Centre for Environmental and Marine Studies
ARH Centro Administração da Região Hidrográfica do Centro I.P.
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