Bringing together hydrologic models and Earth Observation data with water users through the WebGIS tool SPIDER in the context of the SIRIUS project

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Scientific expertise on irrigated agriculture or hydrological modelling has achieved advance models with tested results. However, real connexions between this knowledge and its applications, and water end-users (either water managers on the field, or water policy makers) need a meeting point.

According with the main aim of Global Monitoring for Environment and Security (GMES) in order to provide global, timely and easily accessible information in applications like land and water management, the EU-project SIRIUS (Sustainable Irrigation water management and River-basin governance: Implementing User-driven Services, www.sirius-gmes.es), is linking hydrologic models and Earth Observation data with water users, through the webGIS tool SPIDER (System of Participatory Information, Decision support and Expert knowledge for River basin water management).

The models employed are AQUATOOL (http://www.upv.es/aquatool/) and HidroMORE+® (http://www.hidromore.es/). AQUATOOL is a Decision Support System (DSS) for the management of the water resources in a river basin which integrates in a comprehensive way all relevant water elements and its interactions, in order to provide different scenarios that incorporate water offers and demands. On the other hand, HidroMORE+® computes spatially distributed water balance components remote sensing driven, in large areas at high spatial and temporal resolution. Mainly applied to irrigation practices, HidroMORE+® is aimed to monitories the crop evolutions and water demands. Either AQUATOOL products such scenario reports, or HidroMORE+® products such time series of the water balance components can be integrated in SPIDER, which has been designed to display all these types of products.

However, a general feature of models is that they often provide too many parameters, which makes it very difficult for non-experts to understand. Then, it is needed to select among the output variables those that provide maximum useful information, according to the users requirements so a participatory process is required. At this point, SIRIUS is working closely with public and private water management organizations to obtain reliable input data.

So far SIRIUS offers through SPIDER different water products attending to the water end-user, such as maps of irrigated areas, water consumption and different sub-river basin scenario reports. These reports are designed to be used to support decisions about water management in case of drought management having into account all relevant water elements of the sub-river basin. The aim of designed tools is to facilitate a participatory process to made decisions, because we have learned from experience that this type of process is a necessary condition besides of technical support.