Merging Hydrologic models and EO data for reliable information on Water - MyWater

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In the entire world we are experiencing changing water resources needs mainly as a result of changes in land use. In developing countries the occupation of natural landscapes by agriculture is a major cause; economical reasons pushed by world trade globalization play also a major role. In both cases further global changes are expected as a result of climate change.

Water availability is essential for socio-economic activities and citizens expect catchment managers to take the necessary measures for assuring quantity and quality for direct and indirect human consumption. The knowledge of the processes determining water fate, actual reserves and the capacity to forecast water consumption are essential for catchment manager's decision making.

Land use change drives the modification of three interdependent global variables of the watershed: evapotranspirated water, biomass production and soil organic matter content. The assessment of the consequences of land use changes requires the capacity for studying those global variables on an integrated way. Catchment models can simulate those interactions together with all the processes that determine plant dynamics and are major tools for integrated studies, essential to decision makers.

Earth observation satellites can be used to identify LCLU, measure evapotranspirated water, Leaf Area Index (LAI) (from which can be derived Biomass production using catchment models) and soil moisture (which is affected by organic matter in the soil). On the other hand catchment models can estimate of all this parameters and allow confirming or complementing the satellite data. These models calculate soil moisture based on infiltrated water, soil properties and evapotranspiration

The MyWater is a FP7 project financed by EU for stimulating the development of GMES services. This project has started in 1 of January 2011. MyWater aims at developing a water management system integrating satellite data, models and in situ data in order to improve knowledge and create the forecasting capabilities necessary to catchment managers, and at the same time optimizing the ratio cost/benefit of water resources monitoring.

The specific products of the project are:

• A webGIS data tool, used for managing data required for implementing models and exploiting their results;

• Tools for improving operational model exploitation;

• Training and technological transfer, essential for disseminating the use of MyWater tools.

The MyWater training and technological transfer activities will be essential for disseminating the use of MyWater tools. These activities are more efficient if the consortium includes teams representative of the type of users expected. For that reason the consortium includes European, African and Latin-American teams to work in selected case studies (Portugal, Greece, Netherland's, Mozambique and Brazil).

In this presentation the project main tools and technologies will be presented using has example the Portuguese case study.