

Institutional settings for developing shared water information systems

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Abstract:

Water resources are essential for economic and social development, for human health and for preserving our environment. These resources are now threatened by both human activities and the effects of global warming. Climate change is accentuating the pressure on this vital resource due to water abstraction for drinking water, agriculture, industry, energy as well as numerous pollutions. Today, it is unanimously recognised that water resources managers need to define and implement climate change adaptation plans. These plans are necessary to avoid human, economic and environmental disasters, before it's too late. The preparation and implementation of such adaptation plans requires not only the availability of reliable data and indicators on the status of water resources and their uses but also hydro-meteorological forecasts and accurate monitoring networks. In many countries, the data essential for good water management are still lacking or incomplete, of poor quality, heterogeneous and dispersed between many stakeholders, poorly maintained and badly exploited. This information is essential to enable the authorities and representatives of water-affected economic sectors, as well as the civil society, to establish a common vision and consider the action to be taken in multiyear plans and programs, including for risk prevention, water demand management, pollution control, recycling and groundwater recharge or use of non-conventional resources. To respond to this need, Integrated Water Information Systems must be reinforced or established when necessary. This requires the strategic mobilization of suitable human and financial resources, as it is a fact that we cannot manage what we cannot measure.

The concept of integrated information system is similar to the concept of integrated water resources management. It relies on a cross-sector and inclusive approach, commonly called shared information system¹. It is based on 3 pillars: institutional cooperation, content (data) and technical infrastructure. The institutional cooperation is usually a prerequisite before being able to work on data management and to develop the suitable ICT infrastructure. For a long term cooperation, a regulatory framework is often necessary as an enabling environment. This paper will compare the status of various water legislations in relation to information management for Mediterranean countries involved in an initiative of the Union for the Mediterranean called Med Water Knowledge Platform. The translation of these legal text into technical WIS architecture will also be discussed.

Another key issue, when the institutional cooperation has been fixed, is to mobilise the funds necessary for the design, specification and implementation of such systems. An economical analysis of monitoring activities (data collection) compared to data storage, treatments and diffusion, can provide a suitable tool to appreciate the value of a WIS.

Keywords : institutional cooperation, data exchange, economical analysis, water information systems, integrated water resources management

¹ European Commission (EC) Communication 'Towards a Shared Environmental Information System (SEIS), fev. 2008