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Developing Tools for Hydrological Extremes Warning Systems

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The problem to face the extreme natural events has in recent years received relevant attention from both the technical-scientific communities and the decision making authorities especially in the context of spatial planning and emergency management. A number of studies have reported significant changes in climate and associated effects all over the world. Climate change can affect the quantitative and qualitative status of water resources by altering hydrological cycles and systems which, in turn, affect variables including:
intensity and frequency of floods and droughts;
water availability and demand;
water quality, including temperature and nutrient content.
Existing European water policy on freshwater, coastal and marine management is already being faced in climate change. Apart from the Water Framework Directive published in 2000, the EU has issued further directives including the EU Floods Directive, the Water Scarcity and Droughts EU Policy, the ECs White Paper on Adaptation, a Community Approach on the prevention of natural and man-made disasters and a Guidance Document on river basin management in changing climate. Moreover a more comprehensive policy is being drafted as a Blueprint for Europes waters. The blueprint will be based on an evaluation of EU water policy, and will focus on three aspects: (1) implementation of the WFD, and especially the River Basin Management Plans, (2) success of the water scarcity and drought policy, and (3) vulnerability and adaptation of water resources to climate change.
Both at Community and National level, ISPRA is operating for water policy implementation, through the drafting of guidelines and the development of new technologies, and cognitive tools. Among these, the ISPRA hydro-meteorological forecast system is a chain of meteorological and marine models operational over the Mediterranean Basin that produce systematic, integrated hydro - meteorological and sea state forecasts over the entire Mediterranean area and in 2004 ISPRA started to collaborate with JRC, providing feedback to EFAS Report on Forecasted events. Moreover, ISPRA publishes on its web site a Drought Bulletin that is envisaged to be linked to EDO (European Drought Observatory) and to which several regional observatories are already linked.
A poster will visually describe the overall framework that is advancing at different levels on these challenges noting what great efforts are being made for the future.