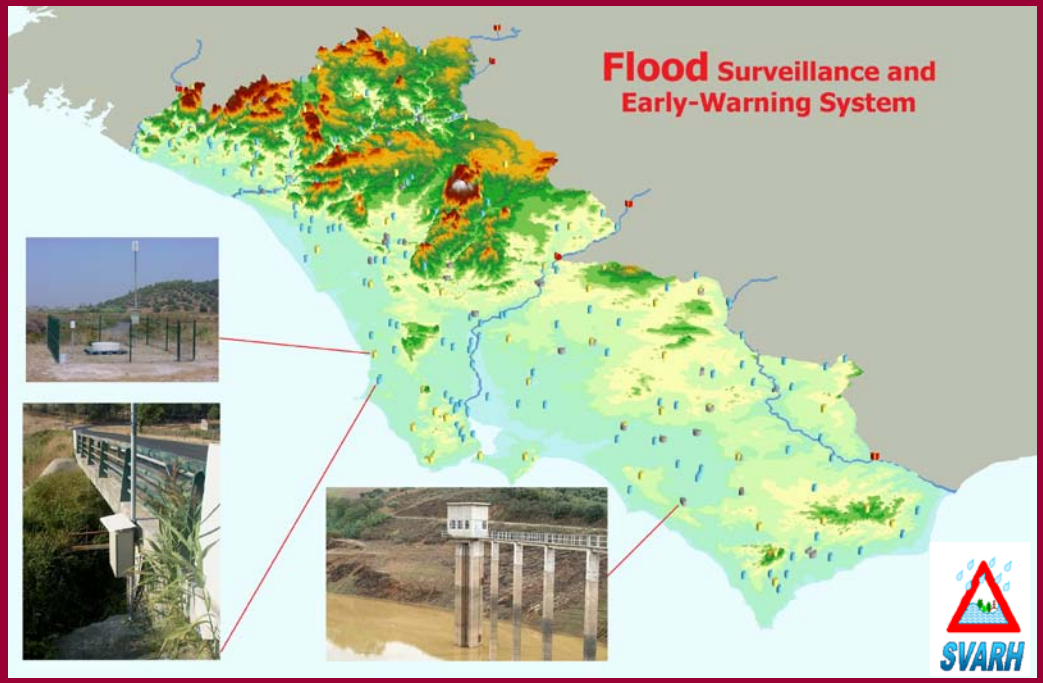
O Sistema de Vigilância e Alerta de Cheias

The Portuguese Institute for Water (INAG) is the institution within the Civil Protection Action Scheme that coordinates the water management both in normal mode as in risk situations, backed by all the hydrometeorological data in real time and the hydrological and hydraulic forecasts issued by conceptual models.



O INAG é o agente de Protecção Civil que coordena a gestão da água e, dentro desta, a gestão de cheias apoiada pela informação hidrometeorológica em tempo real e pela capacidade de previsão hidrológica e hidráulica de modelos matemáticos conceptuais.

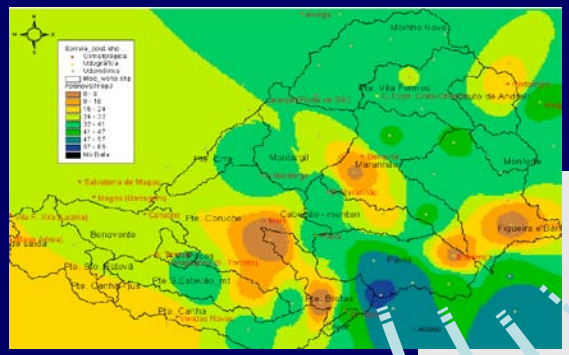
The Flood Surveillance and Warning System is a sub-set of the real time global water resources management scheme (SVARH) and is made up of four components:

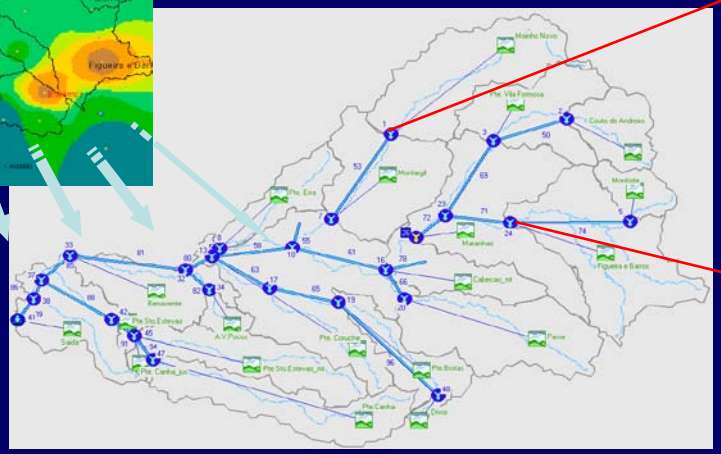
- sensors and teletransmission;
- protocol data from upstream country (Spain) and from reservoir operation (hydropower companies);
- Hydrological and hydraulic models;
- IT systems for storing validating and broadcasting hydrometeorological data.

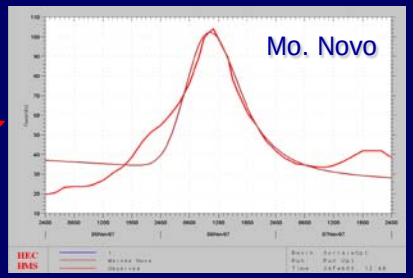
O Sistema de Vigilância e Alerta de Cheias é um subsistema do sistema de gestão em tempo real de Recursos Hídricos (SVARH) e possui quatro componentes:

- sensores e teletransmissão;
- informação sobre exploração de albufeiras portuguesas (EDP/CPPE) e espanholas (DGOHQA) e hidrometeorologia em Espanha;
- modelos hidrológicos;
- sistemas informáticos de armazenamento e disseminação de dados.

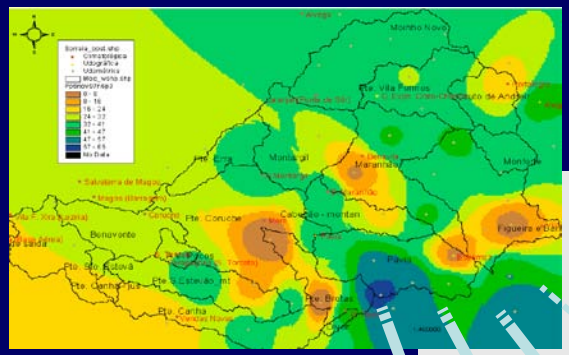
Hydrological and hydraulic forecasts are model outputs based on rainfall forecasts and soil moisture evolution assumptions

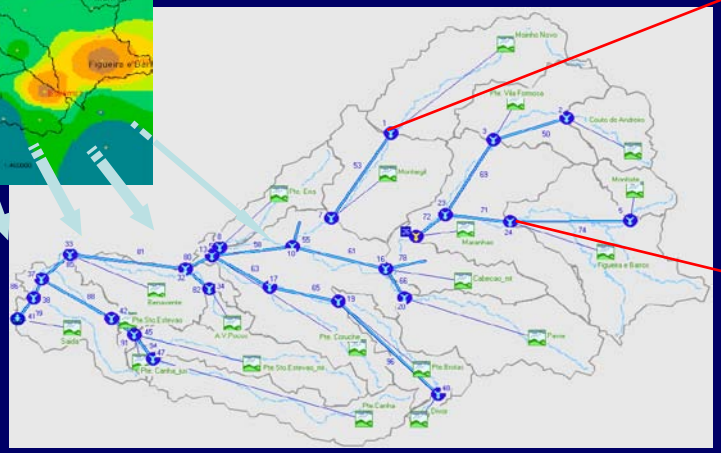


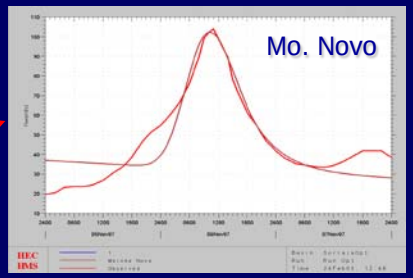


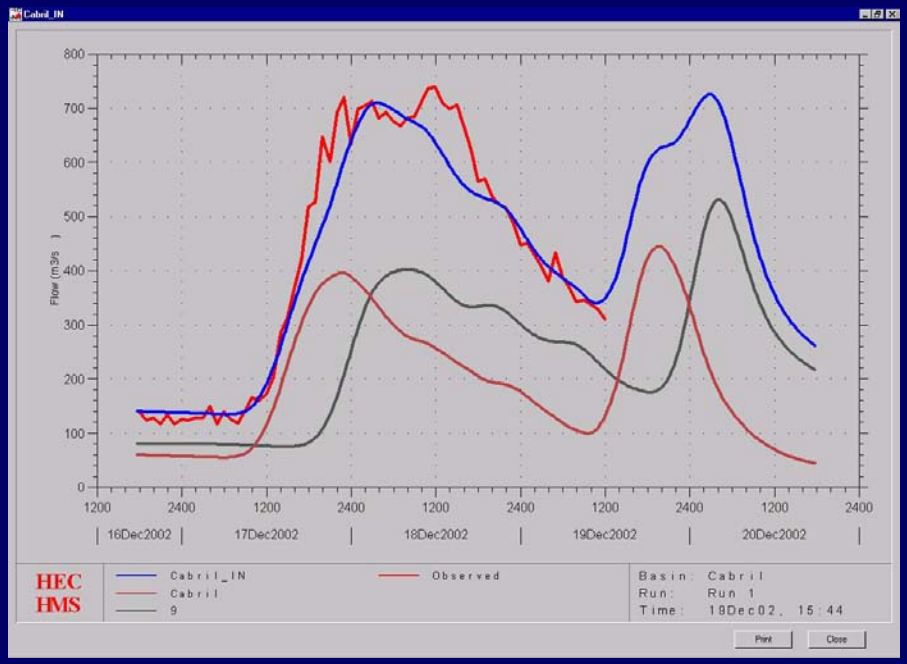


Através da previsão da precipitação e da medição da sua ocorrência e da evolução do estado de humidade dos solos são elaboradas as previsões hidrológicas e hidráulicas





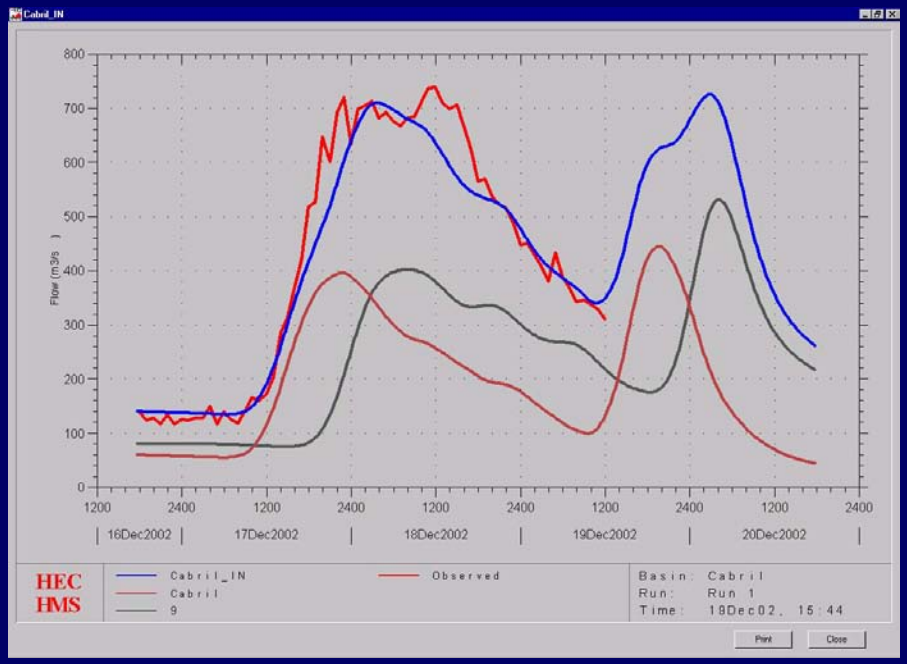




Forecasts of strategic hydrological variables are issued for critical points set as prioritary :

- Upstream of dams (flow);
- Urban areas (water levels);
- Hydrometric stream gages with telemetering capacity (flow and level).

Estimates for transboundary rivers include all the relevant information from the upstream country (Spain), according to the protocol included in the shared rivers convention

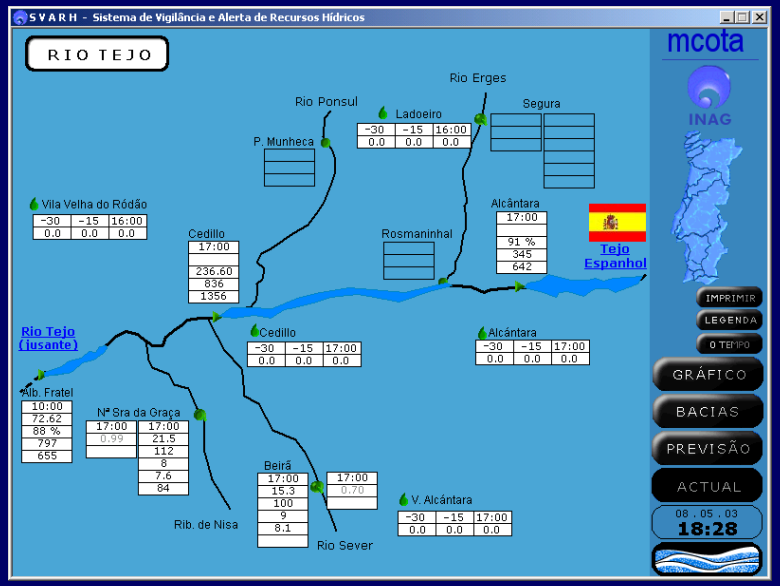


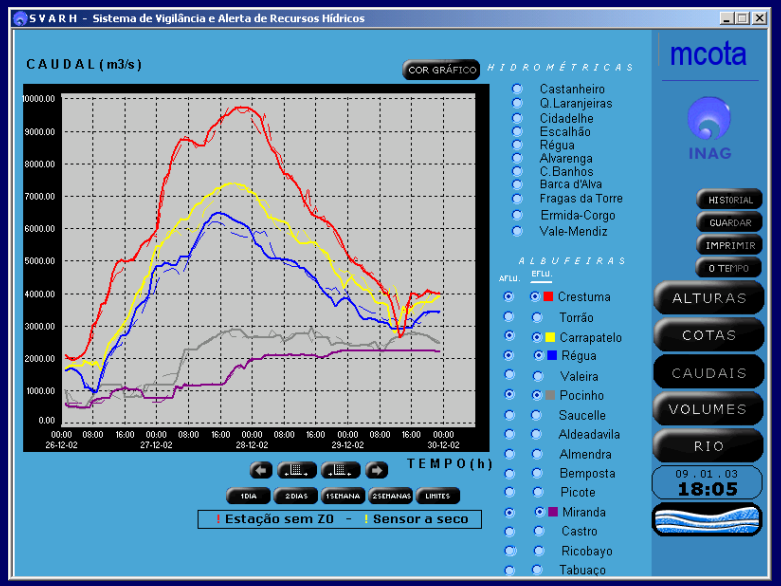
As previsões são estabelecidas prioritariamente para pontos críticos :

- montante de albufeiras (caudal);
- núcleos urbanos (cotas);
- estações hidrométricas da rede de vigilância (caudal e cota).

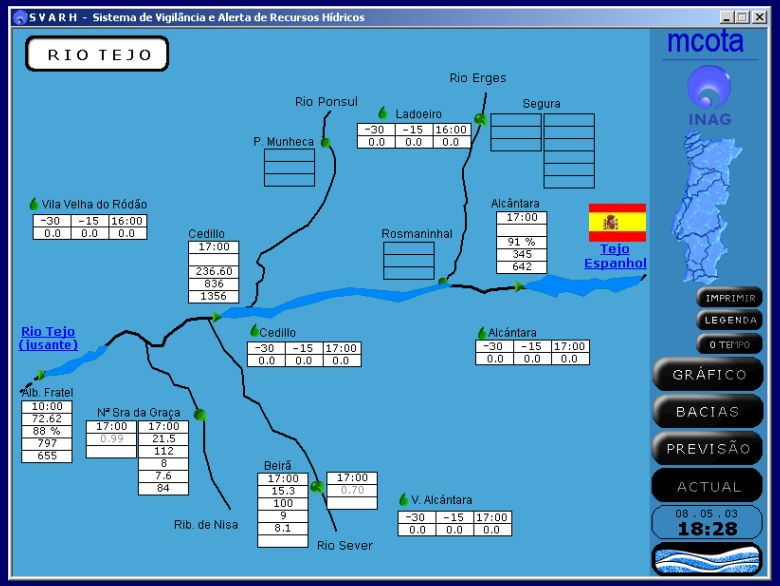
As estimativas para os rios internacionais incluem toda a informação relevante proveniente de Espanha, protocolada no âmbito da Convenção de Albufeira.

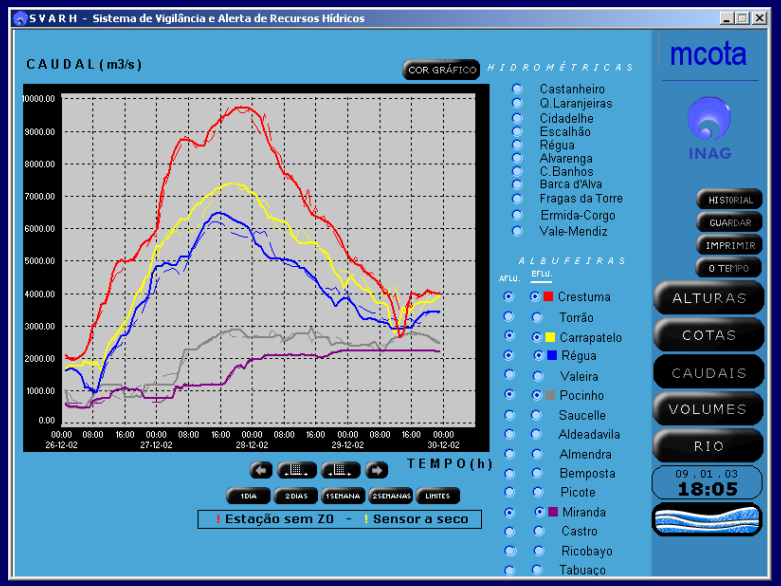
Hydrologic and hydraulic estimates are broadcasted to the National Civil Protection Agency center and his regional dependencies through the software RIOS.

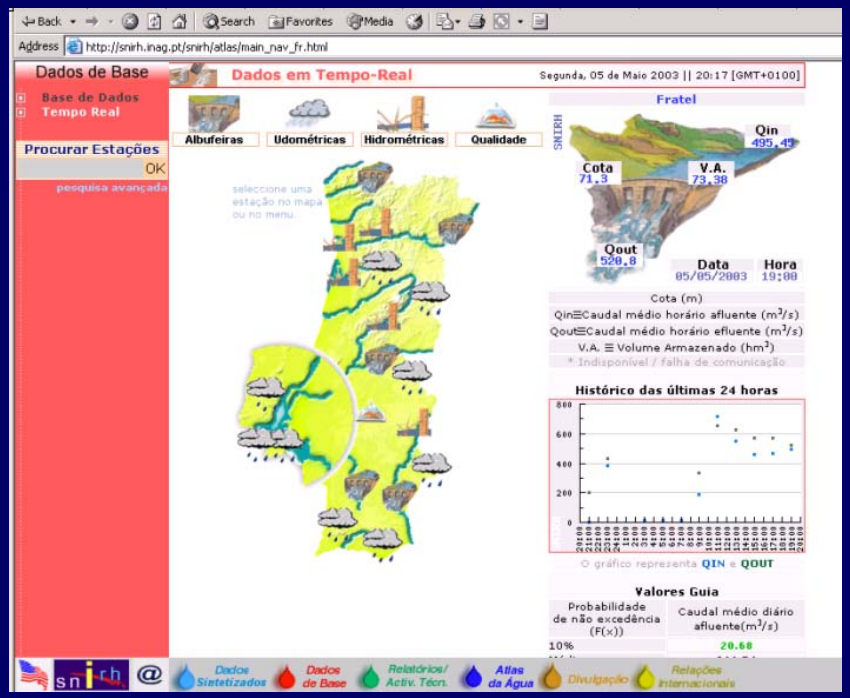




Os valores são disseminados para o Serviço Nacional de Bombeiros e Protecção Civil e seus Centro Distritais de Operação e Socorro através do programa RIOS.

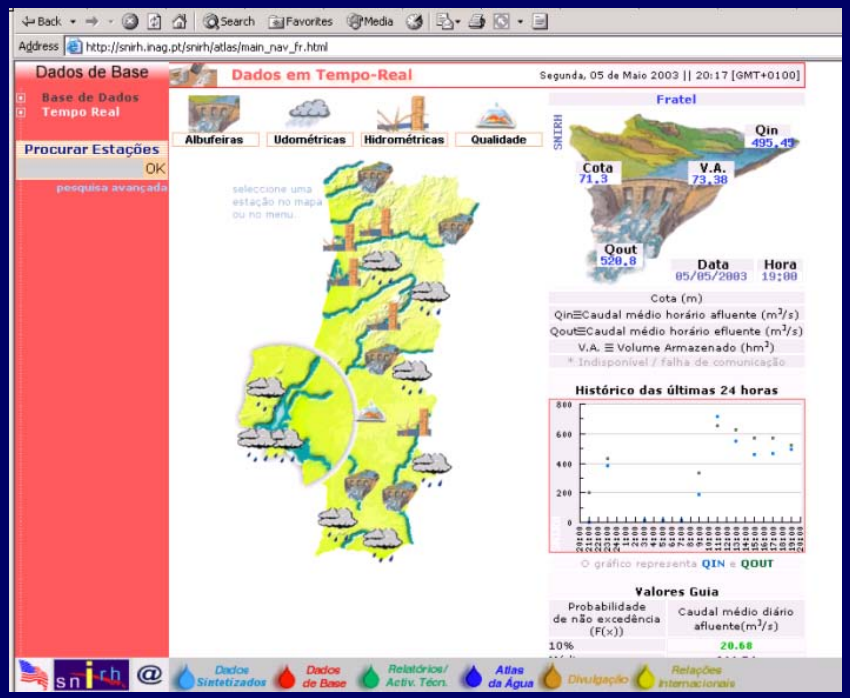






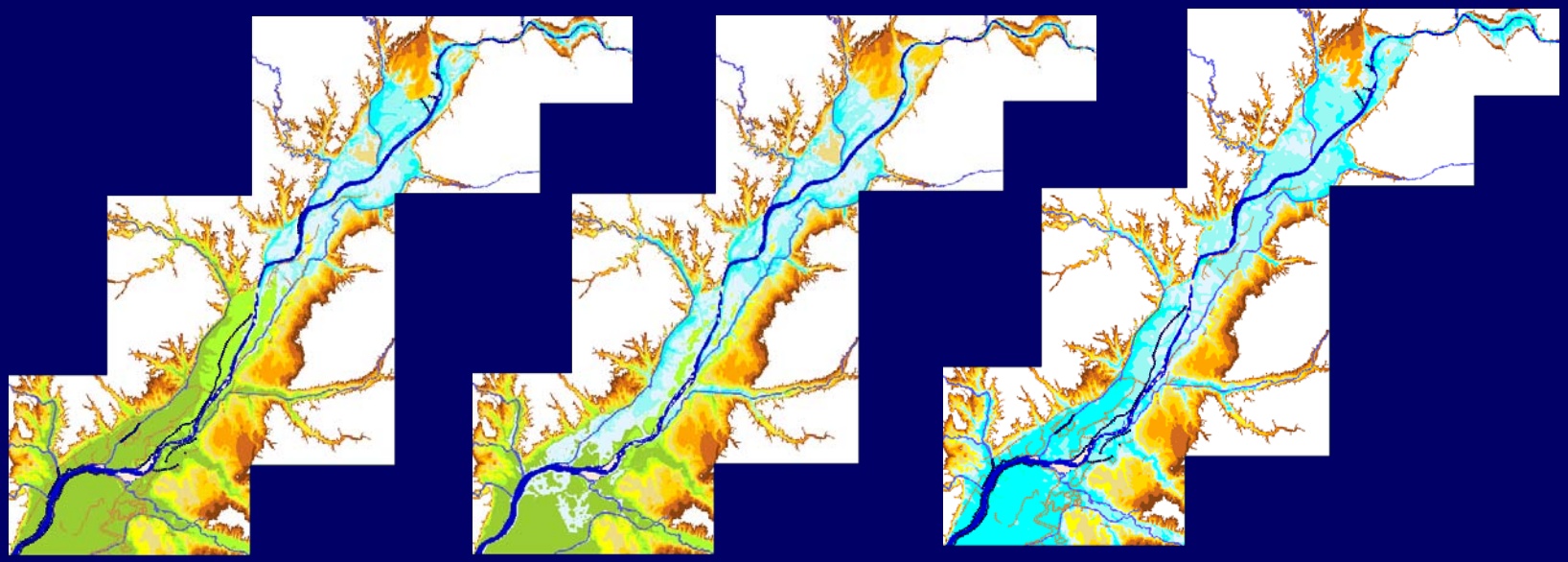
Information on key points such as international rivers close to the border, or more vulnerable urban areas like the town of Águeda, are available to the general public through the *site* of the National Water Resources Information System (SNIRH) (http://snirh.inag.pt).

This information contains:
Rain gage data;
Flow data;
Reservoir storage and flow data;
Water quality data.

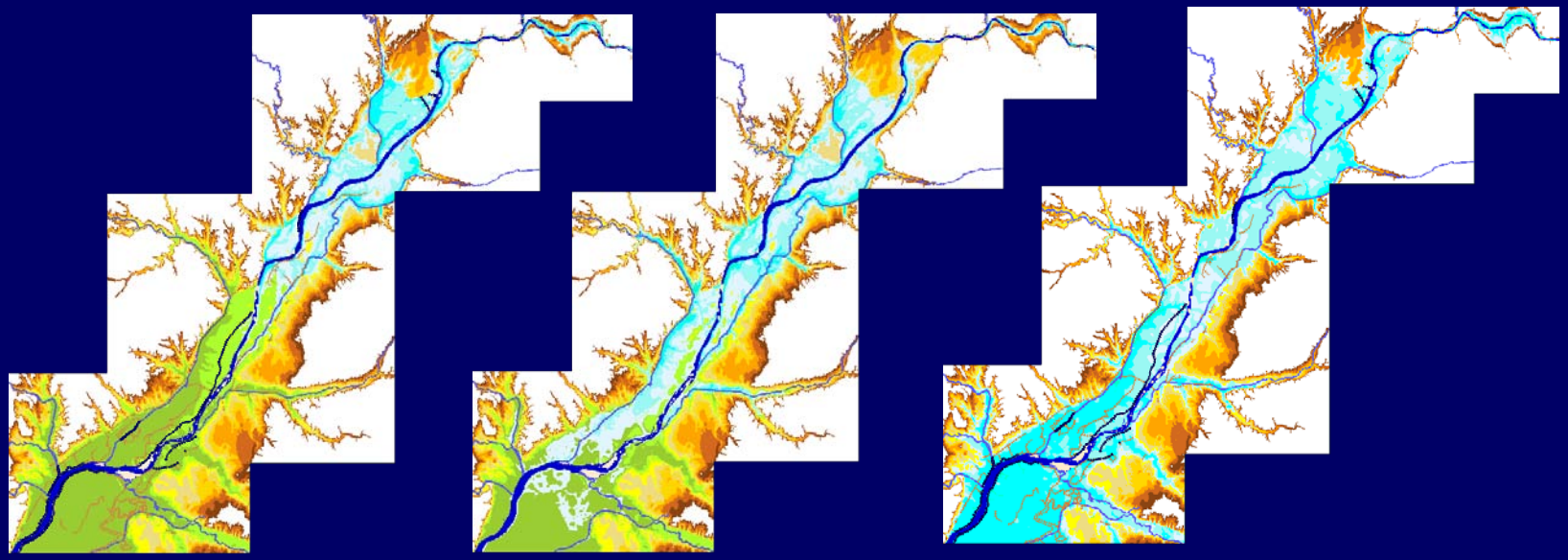


A informação de pontos notáveis do SVARH, como os rios internacionais na fronteira, ou núcleos urbanos mais vulneráveis como a cidade de Águeda, são também disseminados para o público geral através do *site* do SNIRH (http://snirh.inag.pt).

Dessa informação constam dados:
udométricos;
hidrométricos;
albufeiras;
qualidade da água.

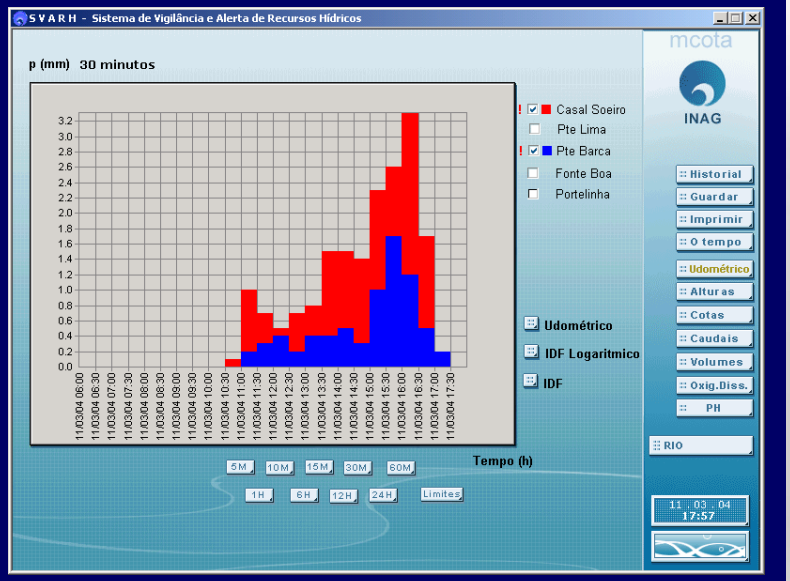


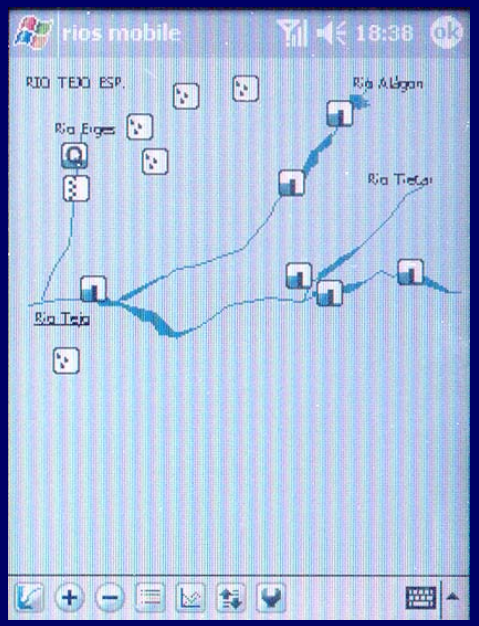
The hydraulic forecasts are coupled to GIS capabilities so that a full areal coverage of the flooded sites can be foreseen. Although not in real time still this flooded areas can be seen on the internet (http://mapas.inag.pt).



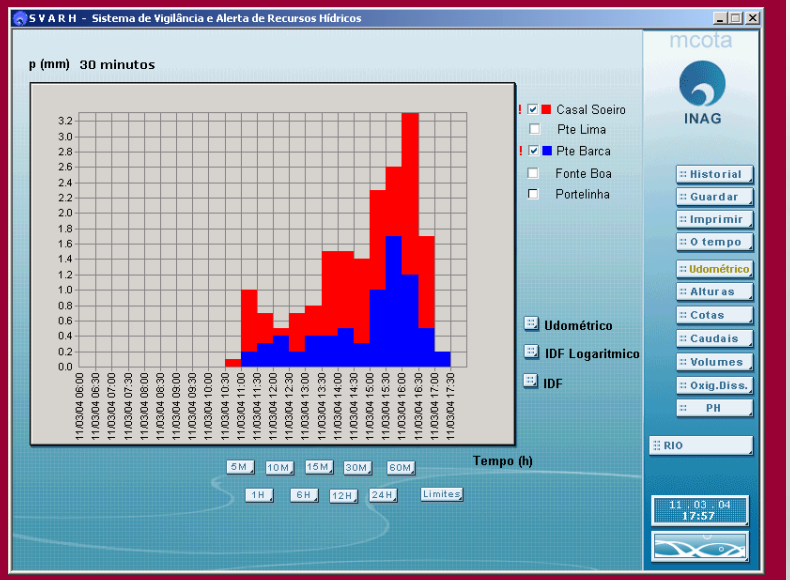
As previsões incidem ainda sobre áreas inundadas com a ligação entre modelos hidráulicos e Sistemas de Informação Geográfica. São também disseminados para o público geral através do *site* do SNIRH (http://mapas.inag.pt), em tempo diferido.

Broadcast can reach even remote operationals throught the active PDA cell-phones software. All the user's familiar screens and graphics are made available.





A disseminação de valores pode atingir mesmo locais remotos através de software específico para PDA. Todos os ecrans e gráficos são aí disponibilizados.



Portugal em Acção

MAOT

INAG
Tel.: + 351 21 8430000
E-mail: snirh@inag.pt
Site: http://snirh.inag.pt

Flood

Surveillance & Early-Warning System

SVARH

Portugal em Acção

MAOT

INAG
Tel.: + 351 21 8430000
E-mail: snirh@inag.pt
Site: http://snirh.inag.pt