



“Quantitative Problems, Workshop II”

OVERVIEW DROUGHT PLANNING AND MANAGEMENT IN SPAIN

**IV Europe-INBO meeting
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Quantitative problems

- Scarcity and droughts are becoming a major socio-economic problem of European dimension: urban supply, agriculture, environmental needs being affected.
- **Water Framework Directive: takes into account prolonged droughts, but does not specify measures. MS need to have a common approach and share solutions when approaching scarcity.**

Management alternatives for droughts

a) As emergency situation

Considering it as a crisis situation, which has to be tackled using extraordinary resources.

b) Within the general planning framework

Making an analysis of the existing risk, and introducing droughts in the general planning strategies as a different scenario.

In Spain, traditionally, droughts have been managed as emergency situations.

Drought management as emergency situation

EVV

Spanish Water Law (TRLA), in **art. 58**, foresees in extraordinary drought situation the adoption, by the Government, of necessary measures to overcome these situations, related to the use of the public water domain.

Specific decrees of urgent extraordinary measures.

Bases for drought planned management

Law 10/2001, July 5, of the Hydrological Water Plan, establishes the bases for the drought planned management.

Article 27. Drought management

Section 1. The Ministry of Environment, for the intercommunitary basins, in order to minimize environmental, economic and social impacts of eventual drought situation, will establish a global hydrologic indicators system that will allow foreseeing these situations, and will serve as general reference for river basin organizations for the **formal declaration of emergency situations and eventual drought**. This declaration will imply the entry into force of the Special Plan referred in the following section.

Bases for drought planned management

Hydrological National Plan Article 27. Drought management

Section 2. **Basin Organizations** will develop (in 2 years) **special action plans** for alert situations and **eventual drought** (exploitation rules and measures)

Hydrological National Plan Article 27. Drought Management

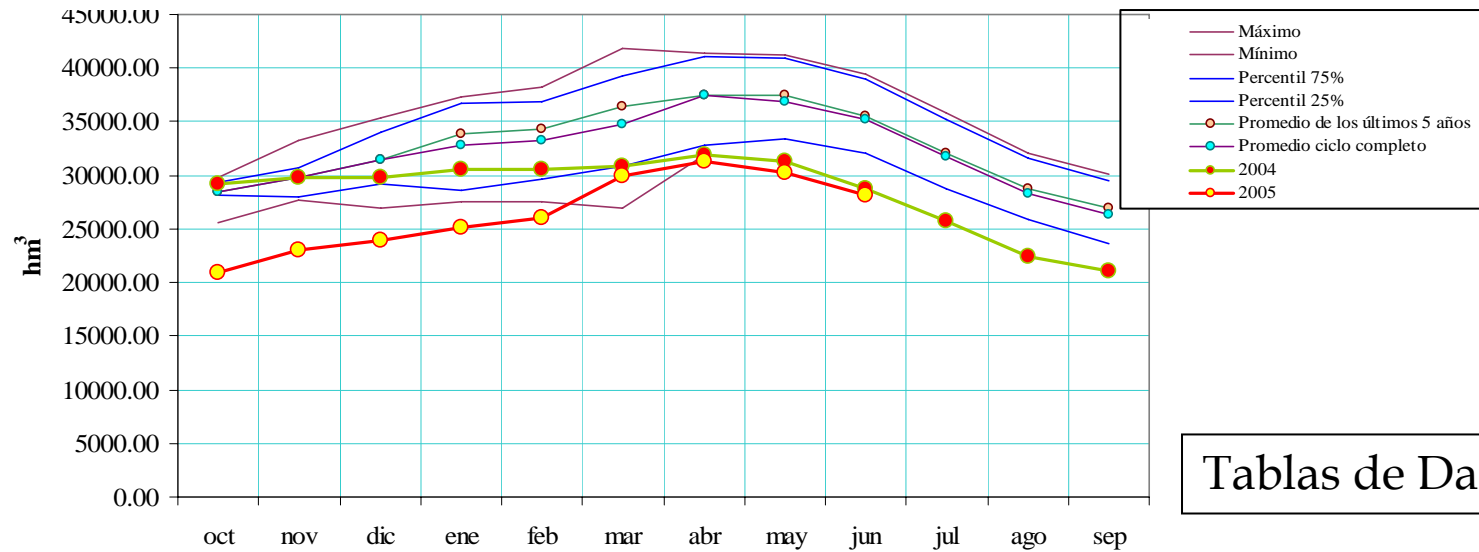
Point 3. **Public Administrations** responsible for **public urban supplying**, for town of or above **20,000 inhabitants**, will provide: **Emergency Plan for drought** situations (taking into account rules and measures planned in Special Plans) to be applied within four years.

Current drought (2004 - ?)

- The current drought started at the beginning of the 2004 hydrologic year, continuing throughout all Spanish territories during the present hydrologic year.
- Currently droughts are mainly affecting the following areas: Guadiana river head, the Júcar and Segura river basins, and some areas of the Tajo and Guadalquivir.

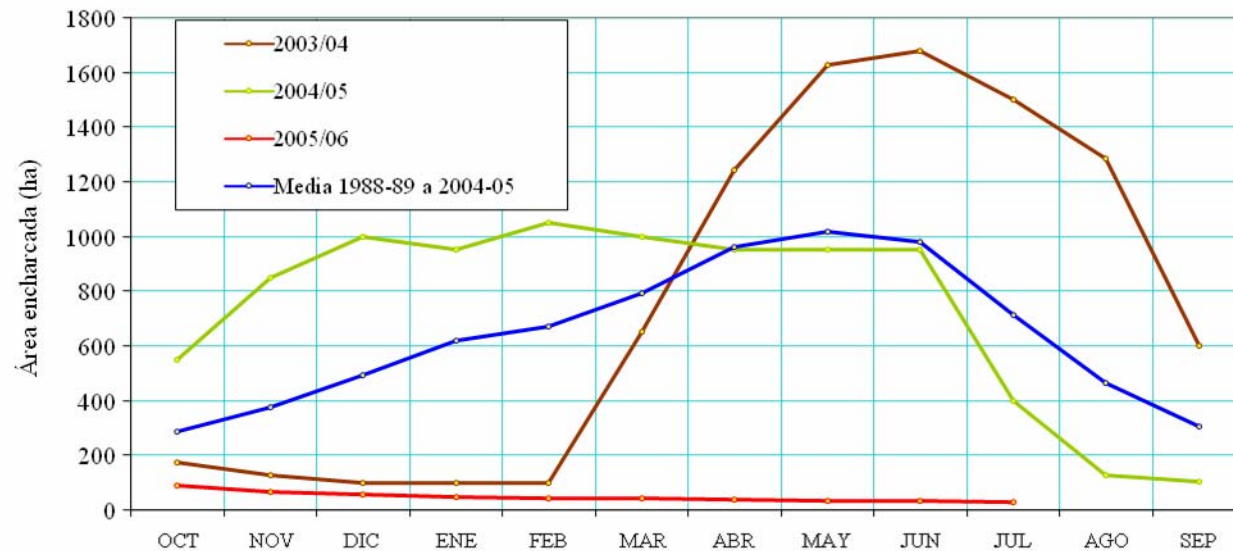
Trends of reservoirs and wetlands

Evolution within the hydrological year

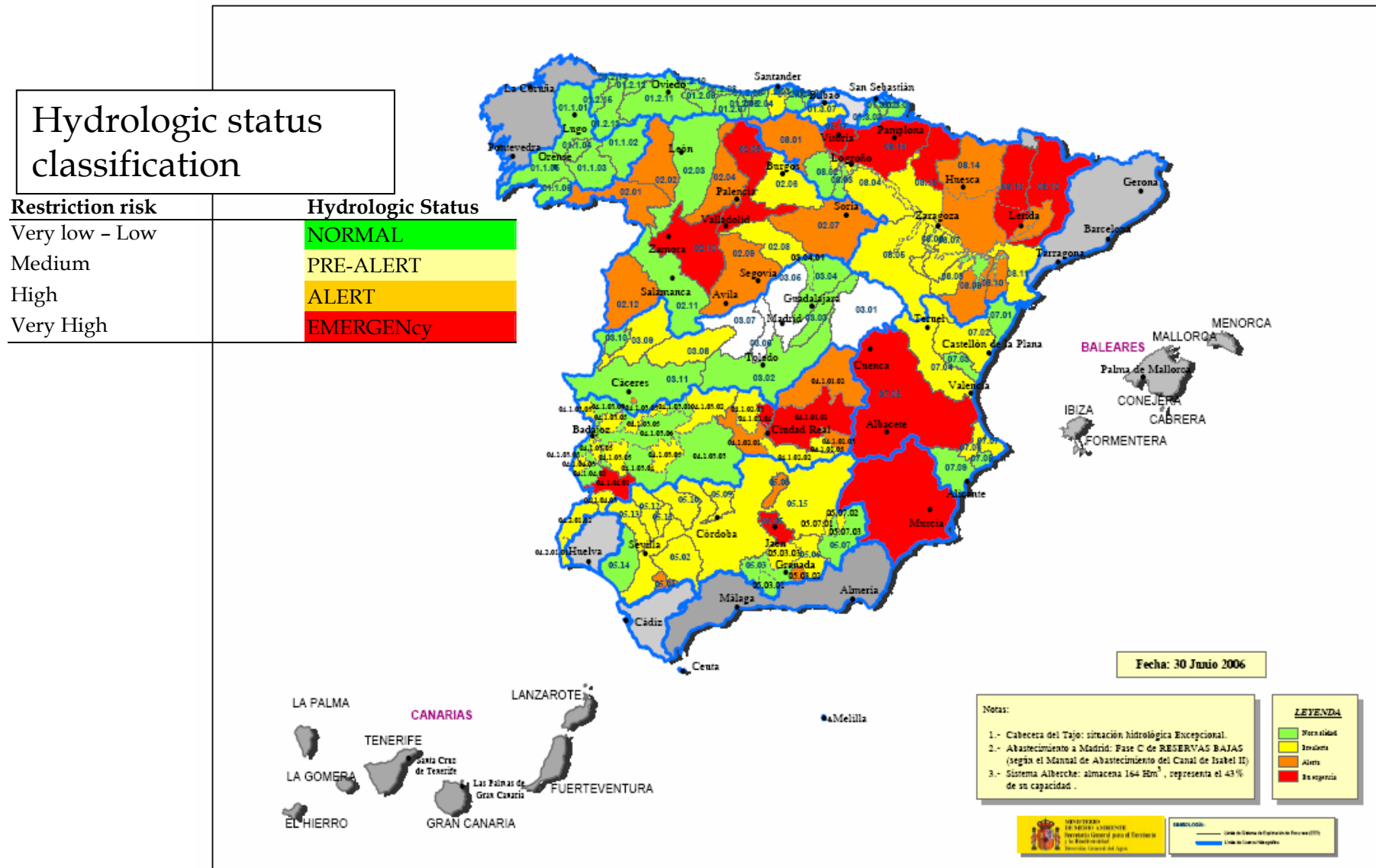


Tablas de Daimiel wetland

Spanish reservoirs



Hydrological status of exploitation systems



Special drought plan

Objective

Anticipate to droughts, foreseeing solutions to supply demand and comply with environmental requirements.

Bases for the Special Drought Plan. Plans must be based on:

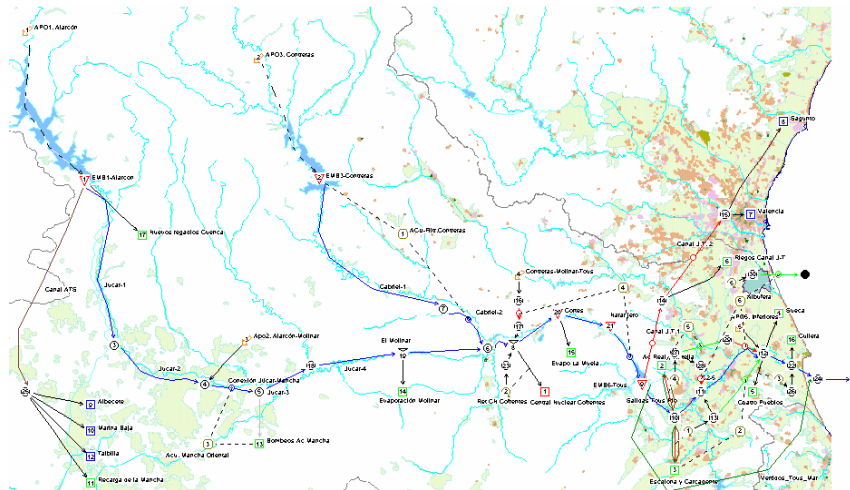
- a) Knowledge of the resources system and its elements capacity to be forced in scarcity situation.
- b) Knowledge of the demands system and its vulnerability against droughts
- c) Indicators system for identifying drought situations.
- d) Application of measures to reduce drought impact according to the indicators status
- e) Adaptation of the administrative structure for its follow-up and coordination among involved administrations.
- f) Plan for public information

Status

Special Drought Plans are being finished by the river basin organizations.

Main measures to apply during drought situation

- Exploitation rules, savings and use restrictions
- Joint management of surface water and groundwater: drought wells
- Non-conventional resources: reuse of treated wastewaters in agriculture
- Water markets.



Use of models to define exploitation rules and use restrictions



Emergency measures: use of drought wells

Emergency Urban Supply Plans > 20000 hab.

Objective

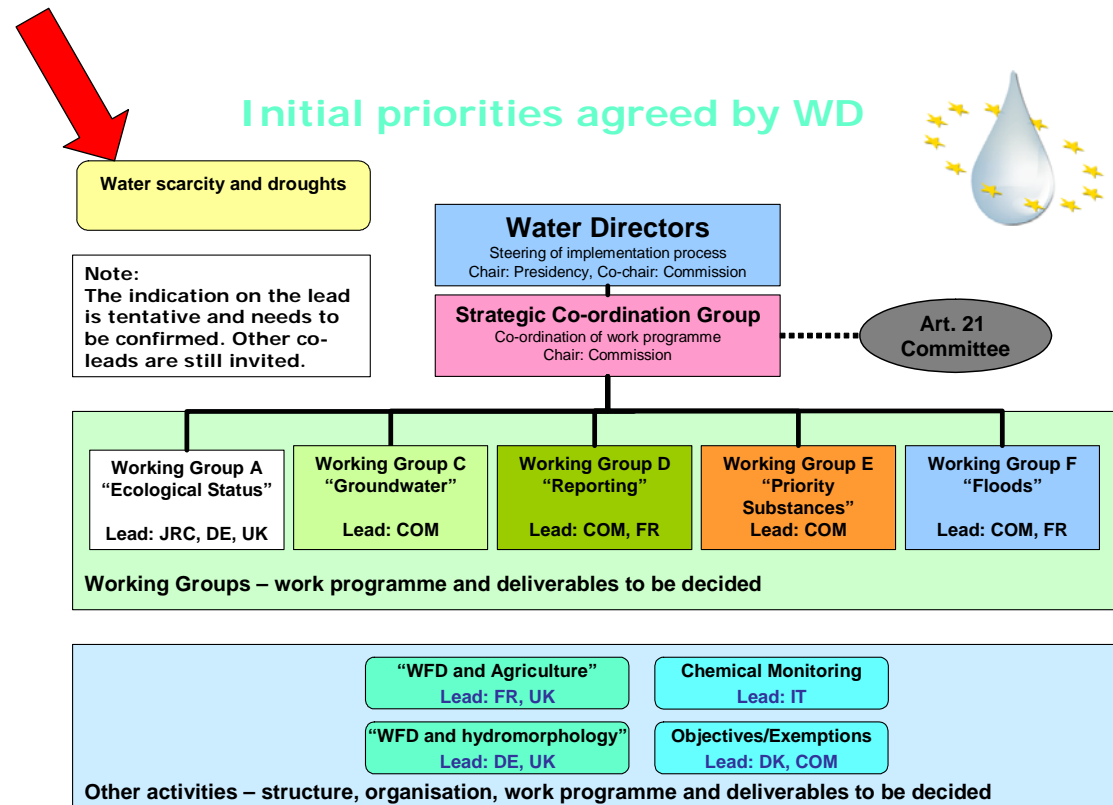
Management of droughts to guarantee population supply

Bases of the Emergency Plan

- Assessment system and control of non-supply risk
- Application of measures according to indicators statuses
- Demand management
- Supply actions

EC: Water Scarcity and Droughts Working Group

- Group co-lead by EC, France, Italy and Spain.
- Objectives: to determine how member states can comply with WFD under scarcity and drought events and establish a common strategy.
- Currently working on document that gathers situation on most affected countries to be presented to Water Directors in December meeting.



Status: 02.06.2006