

Drought management in Spain

9th World Water Forum

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“3C2. Develop the exchange of management experiences of water resources to deal with chronic scarcity of water and water-related disasters (including floods and droughts)”

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Introduction

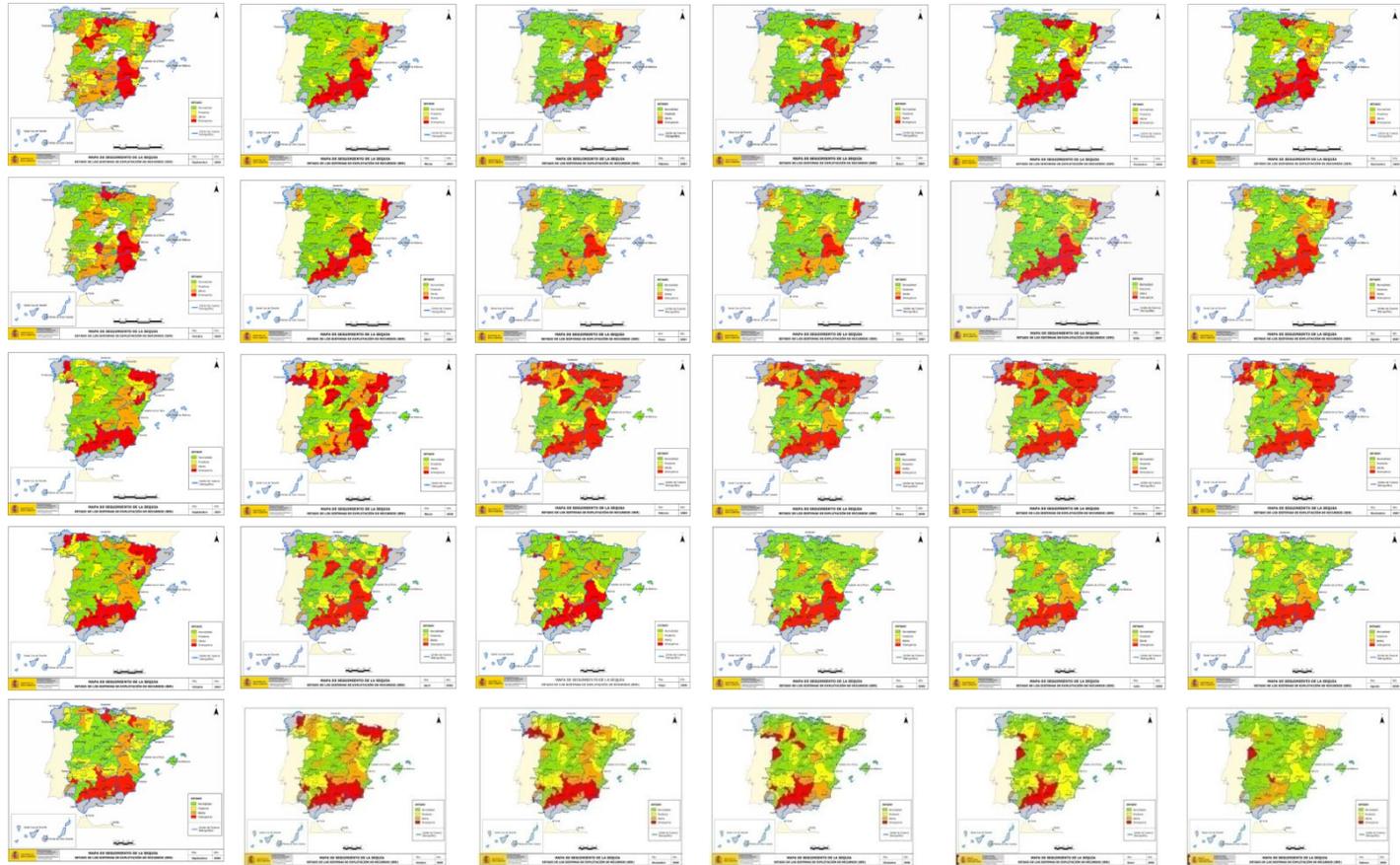
- **Climate and hydrological evidence and projections** show a **significant reduction in water resources** and a **greater frequency of droughts** in Spain.
- During **last century**, in Spain **droughts** were considered an **emergency situation** that must be **managed with extraordinary measures** and water resources.

Planned drought management

Law 10/2001 of the National Hydrological Plan established the bases for a planned management of droughts:

- **Ministry:** will establish a **global system of hydrological indicators** to **prevent drought situations** that will serve as a **general reference** for its **formal declaration**.
- **River Basin Organizations:** will develop **Drought Management Plans (DMP)**.
- **Public Administrations responsible for the supply of populations > 20,000 inhabitants:** they will develop **Emergency Plans** for drought situations.

Global System of Hydrological Indicators



The status maps have been published monthly since December 2005 on the website of the Ministry for Ecological Transition: www.miteco.es

Basic contents of the DMP

- **Characterization and diagnosis of droughts.**
- **System of indicators** for situations of prolonged drought and short-term scarcity.
- **Measures and actions** to be developed in the different phases of drought and scarcity.
- **Drought monitoring and post-drought reports.** Evaluation of socioeconomic and environmental impacts.
- **General framework for emergency supply plans to be elaborated by municipalities.**

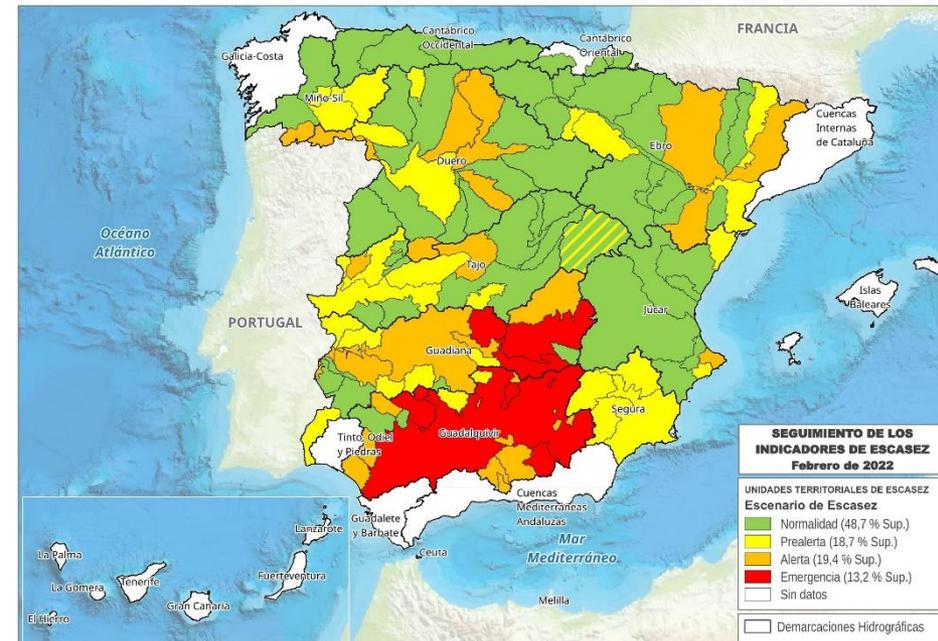
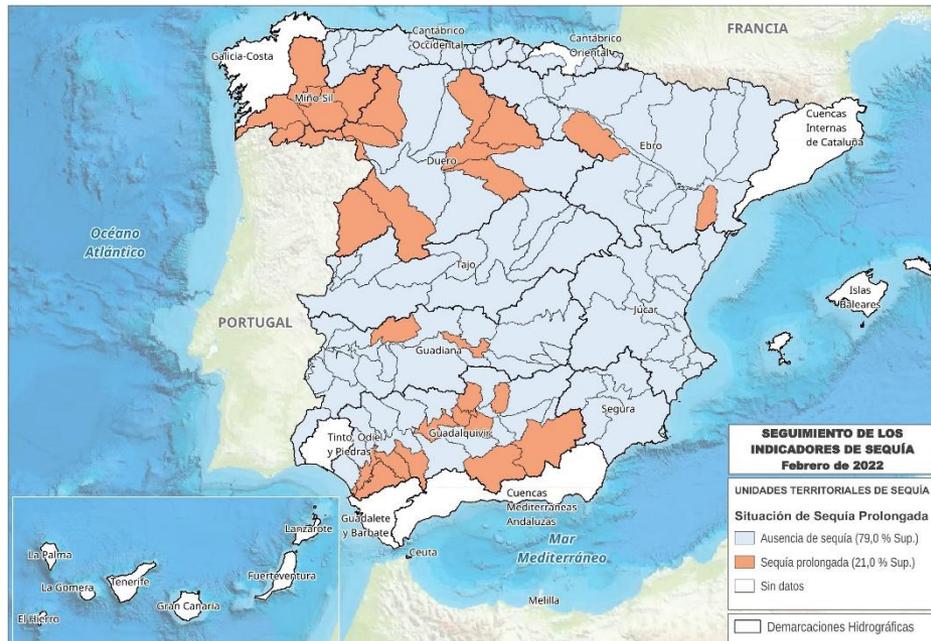
Double indicator system

Indicators of prolonged drought:

Identify persistent and intense situations of decreased precipitation, with reflection in the contributions in the natural regime.

Water shortage indicators:

Identify situations of difficulty in meeting demands due to current water shortages.



Actions and measures to apply

Actions that are activated in the prolonged drought scenario

Justified admission of temporary deterioration of the status of water bodies due to exceptional natural causes

Less demanding ecological flow regime

Water Scarcity Indicators

Status situations	Absence of scarcity	Shortage moderate	Shortage severe	Shortage serious
Scarcity scenarios	Normal	pre-alert	Alert	Emergency
Typology of actions and measures that activate	General hydrological planning and monitoring	Awareness, savings and monitoring	Management measures (demand and supply), and control and monitoring (art. 55 of the TRLA)	Intensification of the measures considered in alert and possible adoption of exceptional measures (art. 58 of the TRLA)

Thanks for your
attention