

Water governance in Spain

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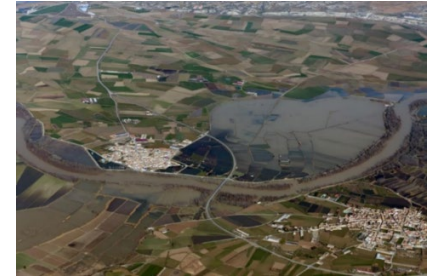
Ministry for Ecological Transition and
Demographic Challenge

Water Governance in Spain

A bit of context

Water demand

- Population: **45 M inhabitants + 64 M tourists.**
- Irrigated areas: **3,5 M Hectares**



Hydrological regime

- Extremely irregular.
- Very fragile balances between resources, water demands and environmental needs.
- Situation aggravated by climate change.



Water policies and governance developed in a climate change adaptation framework

Water Governance in Spain

Infrastructure | Dams & Reservoirs



1.200 large dams (capacity 56,000 hm³)

- Safety Standards for Dams and Reservoirs (Royal Decree 264/2021). It updates regulations and unifies all former disperse regulations.

The large number of existing dams in Spain and its high average age requires efforts for maintenance and rehabilitation, keeping them in good operating condition and safety.

Water Governance in Spain

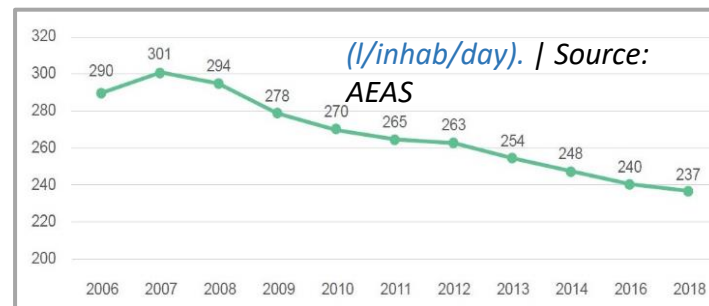
Infrastructure | Efficiency in water use

Urban water cycle

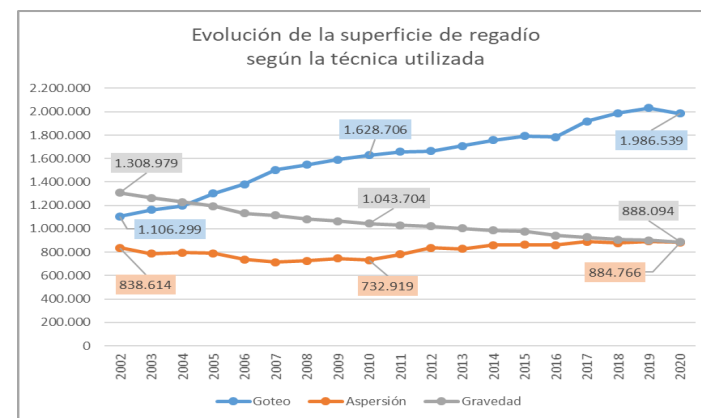
Significant improvement in efficiency

Drip Irrigation

Important increase in drip irrigation



Urban water consumption.
Source: AEAS

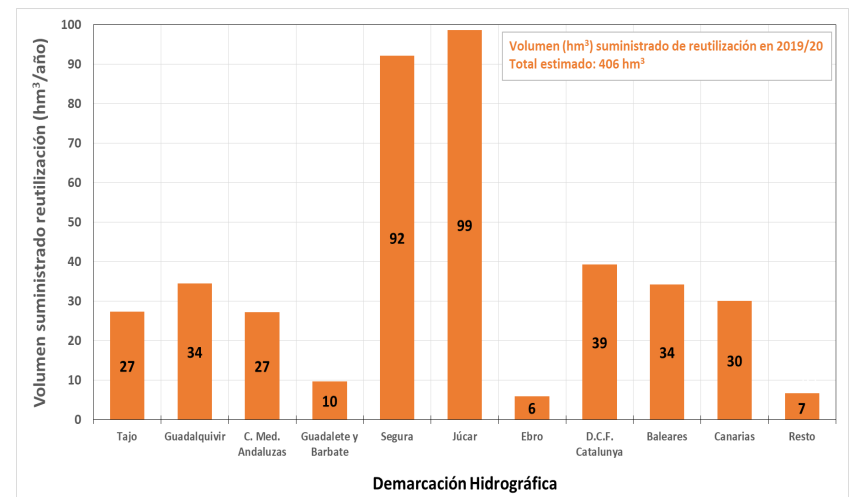
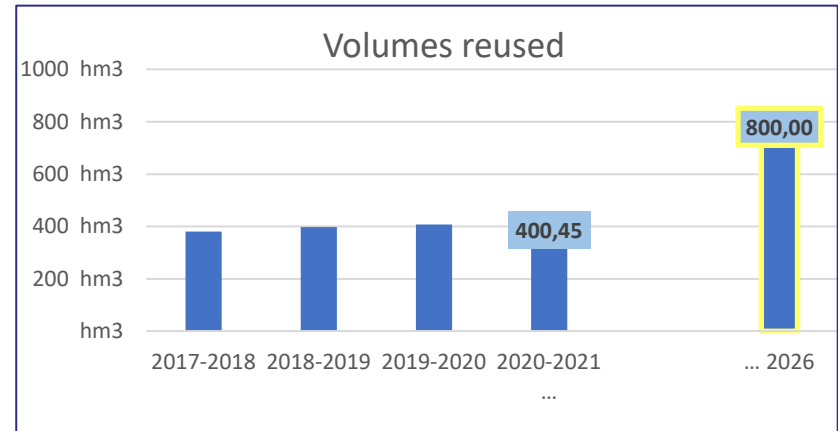


Survey on Crop Areas and Yields
Survey | (ESYRCE) del MAPA.

Water Governance in Spain

Non Conventional Resources | Water reuse

- Spain reuses a volume over 400 Hm³/year, which is **≈10% of treated wastewater**.
- But the volumes of reused water have not increased in recent years due to regulatory, financial and technical barriers.
- Water Law has been modified in 2023 to solve these problems and adapt to UE Regulation.

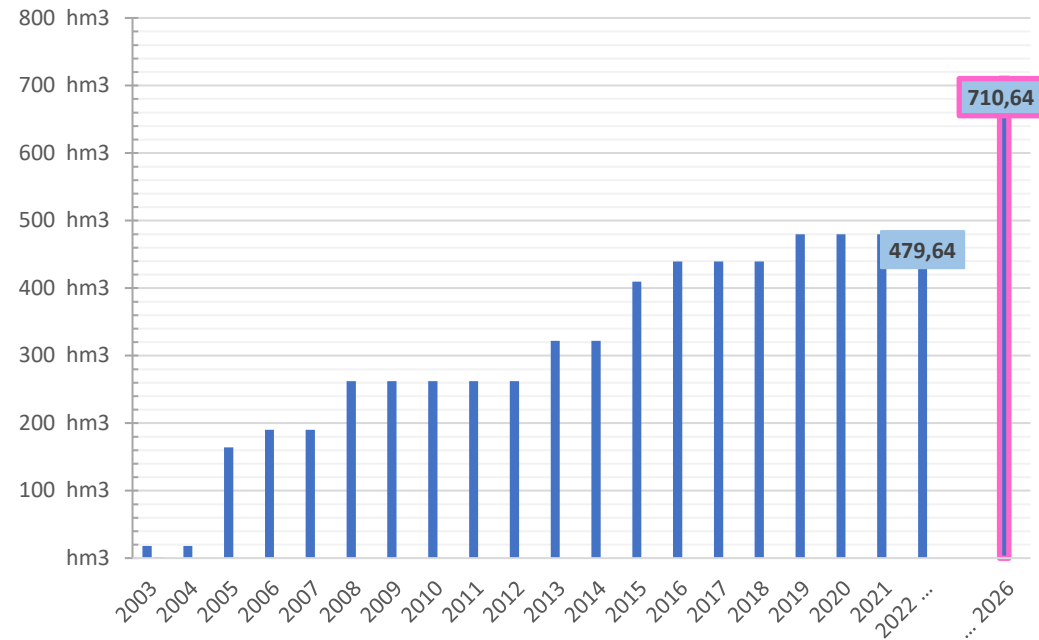


Water Governance in Spain

Non Conventional Resources | Desalination

- Spain relies on desalination to meet water demands on islands and Mediterranean coast, even for irrigation. **500 Hm³/year**
- **4th country in the world** in installed desalination capacity.

DESALINATION: Installed capacity AGE



Non Conventional Resources | Desalination

Almería: **180,10 M€** (102,10 M€ + Photovoltaic plant 78 M€). Increment of **39 hm³/year**



IDAM Bajo Almanzora

15 - 20 hm³/year

Construction: 27,8 M€

Photovoltaic plant: 17 M€



IDAM Carboneras

42 - 51 hm³/year

Construction: 23 M€

Photovoltaic plant : 31,10 M€



IDAM Campo de Dalías

30 - 40 hm³/year

Construction: 51,30 M€

Photovoltaic plant : 29,90 M€

Murcia + Alicante: **297,70 M€** (139 M€ + Photovoltaic plant 158,70 M€). Increment of **70 hm³/year**



IDAM Águilas

60 - 70 hm³/year

Construction: 29 M€

Photovoltaic plant : 46 M€



IDAM Valdelentisco

50 - 70 hm³/year

Construction: 48,20 M€

Photovoltaic plant : 43,70 M€



IDAM Torrevieja

80 - 120 hm³/year

Construction: 61,80 M€

Photovoltaic plant : 69 M€

Water Governance Framework

Basic Principles

- Stable legal and institutional framework
- Basin management through RBO
- Integrated Water Resource Management
- Environmental flows are a restriction for water uses
- Water allocation assessed and defined through the RBMPs
- Measures to reach water planning goals in RBMPs
- Users' & stakeholders' active participation in water management
- Enhance water management through digitalization

Water Governance in Spain

A bit of history

March 5th, 1926

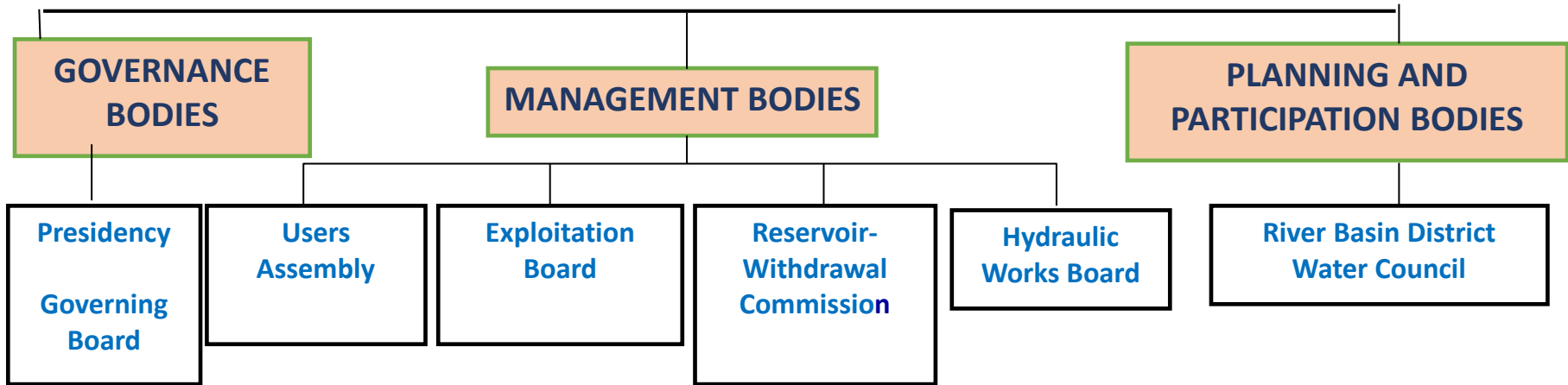
- Creation of the Hydrological Confederation of the Ebro river.
- In the beginning it was an original associative formula between Administration and users to foster hydraulic works.



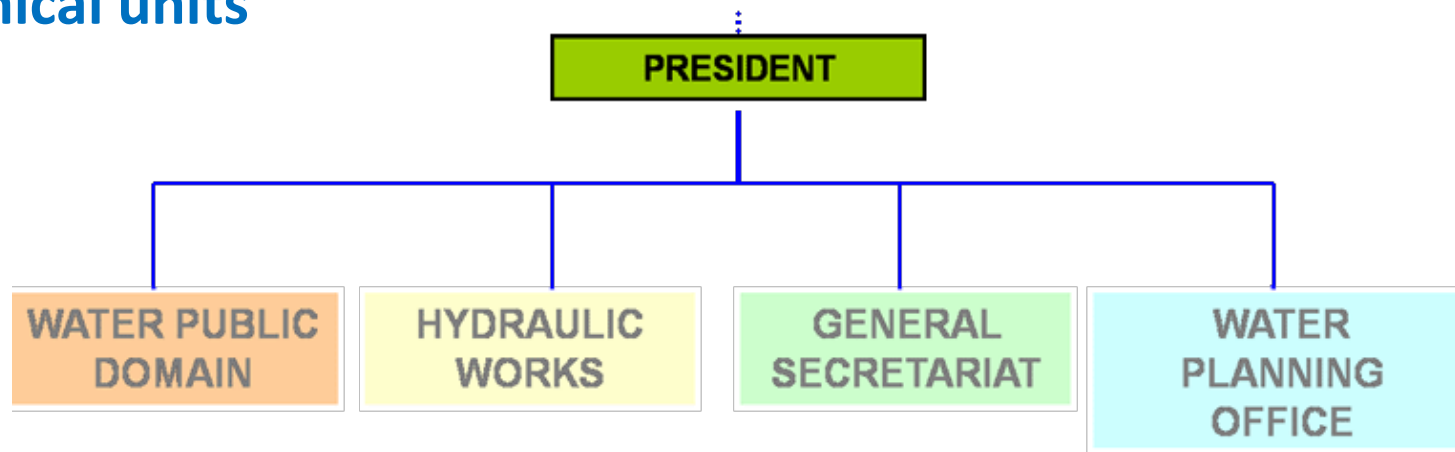
Water Governance

River Basin Organizations

Main bodies



Technical units



Water Governance

Albufeira Convention

Transboundary basins

46% of the surface of the Iberian Peninsula.

Albufeira Convention

Signed in 1998 to improve cooperation between Portugal and Spain on water issues. Revised in 2008.



Spanish-Portuguese joint river basin districts

Water Governance principles

Water allocation and environmental flows

- To issue any water permit there must be a previous water allocation contemplated in the River Basin Management Plans (RBMP)s.
- Spanish regulation establishes environmental flow requirements prior to any water uses.
- Such Environmental flows are determined in the RBMPs: minimum/maximum seasonal flows, flow change rate and flood flows.

Water Governance principles

Enhance water management and accountability through digitization



Strategic Project for Economic Recovery and Transformation:

Water Cycle Digitalization 2.000 M€ from National Budget

3,000 M€

- Digitalization of River Basin Authorities.

225 M€

- Grant tender to fund water's users digitization programs

1,700 M€

Main Instruments to develop water policies

River Basin Management Planning - RBMP | 2023

Flood Risk Management Plans – FRMPs | 2023

Drought Management Plans – DMPs | 2023

River Restoration Strategy - ENRR | 2023

Groundwater Action Plan – PAAS | 2023

Instruments to develop water policies

River Basin Management Planning - RBMP

Objectives

- Waterbody environmental protection
- Establish water allocations to water uses

Main issues addressed

- Climate change, environmental objectives, water body status, water security, program of measures (sanitation, diffuse pollution, river restoration, ...),...

Investment

- 23,000 M€ (8,600 M€ State)

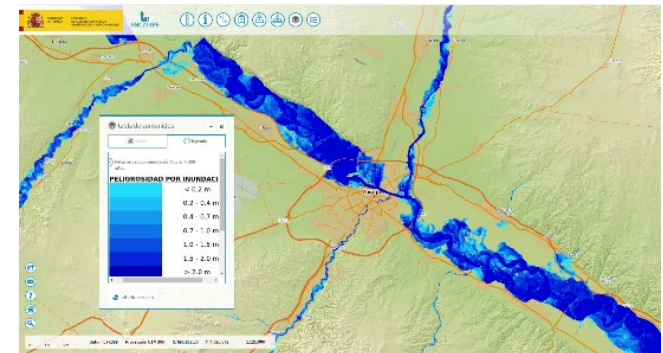


River Genil's Natural Reserve

Instruments to develop water policies

Flood Risk Management Plans – FRMPs

- The flood risk management plans (FRMPs) provided by the EU Flood Directive is a milestone in the water policy in Spain.
- Population is to be informed through hazard and risk maps available on the Ministry's [website](http://sig.mapama.es/snczi). Created in 2015, allows consultation of flood hazard maps in Spain <http://sig.mapama.es/snczi>



Hazard map of the Ebro River in Zaragoza (100-year-return period)

Instruments to develop water policies

Drought Management Plans - DMPs

Drought Management Plans (DMPs)

Developed by River Basin Authorities

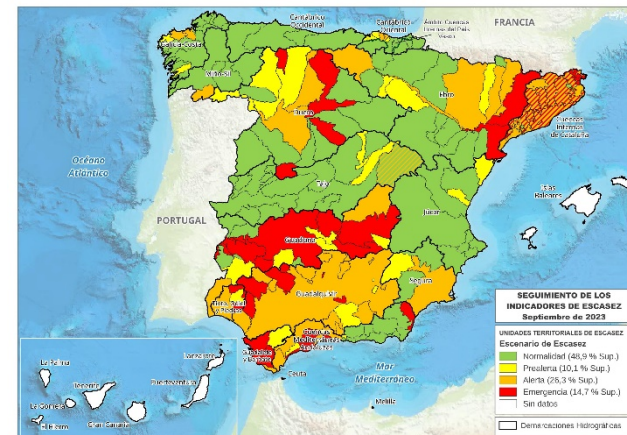
Drought Emergency Plans

Developed for 20,000+ inhabitant populations.

Drought Observatory

(in operation since 2009)

Global data system of hydrological indicators developed by the Ministry



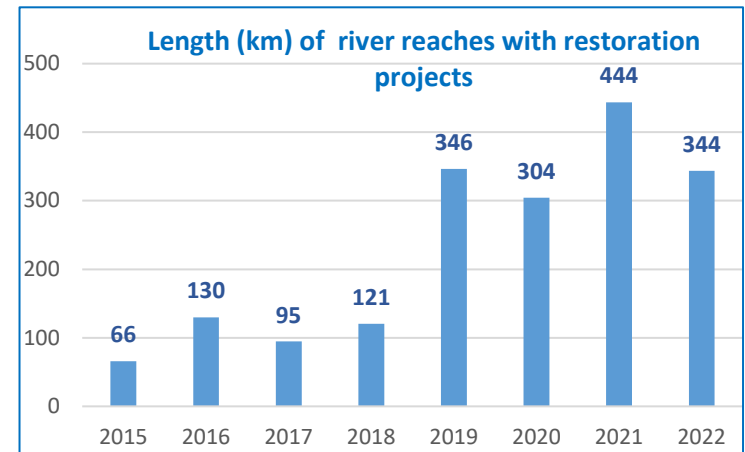
Water scarcity indicator map
(September 2023)

Instruments to develop water policies

River Restoration National Strategy - ENRR

Objectives

- Enhance longitudinal continuity
Removal/adaptation of obstacles
- Foster Nature-Based Solutions.
- Recover riparian vegetation.
Shaded areas
- Re-naturalization of river in urban reaches.



Instruments to develop water policies

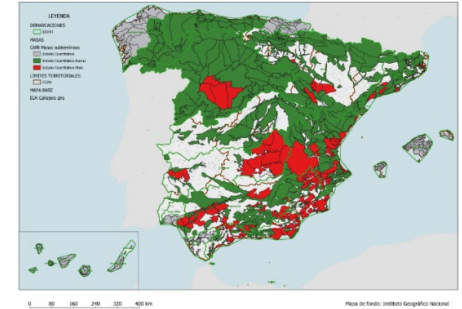
Groundwater Action Plan - PAAS

2 in 5 groundwater bodies are not in good status due to:

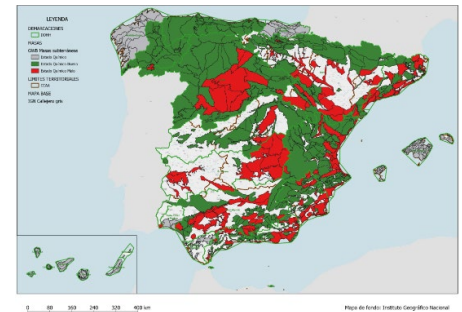
- Overexploitation.
- High concentrations of nitrates.

Groundwater Action Plan will:

- Improve knowledge: aquifer characterizations
- Monitoring networks
- Hydrodynamic and quality numerical models
- Relationships water use and water body status.
- A better governance
- Investments planned: 500 M€



Quantitative status



Chemical status

RD 47/2022, of January 18, on the protection of waters against diffuse pollution produced by nitrates from agricultural sources.

