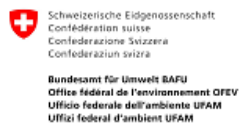




Global Workshop
on Droughts in Transboundary Basins
 26-27 February 2024, Geneva

Integration of Drought Policies in a TB context

Concepción Marcuello
 Directorate General of Water-Ministry for the
 Ecological Transition and the Demographic
 Challenge (Spain)



Drought Management at National level

Global system of hydrological indicators developed by the Ministry comprising:

In operation in 2009

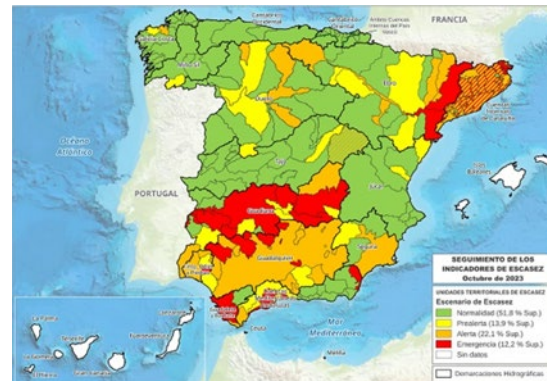
Drought Management Plans (DMPs) developed by River Basin Authorities

updated in 2018 and to be updated again in 2023

Drought Emergency Plans developed for **20,000+ inhabitant populations**.



Prolonged Drought map (Oct. 2022)



Water scarcity indicator map (Oct 2022)

Plans (DMP) – RBO level – Coordination at national level

Objective

Minimize the environmental, economic and social impacts of droughts – Risk assessment approach

Contents

- Featuring and diagnosis of previous droughts in the area.
- Monitoring indicator framework
- Response measures and actions to be developed throughout the different phases of drought and scarcity.
- Post-drought assessment of socioeconomic and environmental impacts.

RBM Planning and Drought Management in Spain

Separation between River Basin Management and Drought Management (“structural” vs. “occasional” situations)



River Basin Management Plan (RBMP)

- Goal: achieve the **good status of water bodies**, *meet water demands*, protect the public domain, enabling regional development.
- Evaluation of Pressures, Impacts, risks and status of water bodies, and setting of Environmental Flow requirements. Includes the Programme of Measures to achieve the environmental objectives
- Evaluation of water resources availability, demands and **allocations** through water balances.
- Considers infrastructure management rules to meet **supply guaranteed levels** (as set in regulation)
- Revised every 6 years. 3rd cycle, Jan. 2023
- Public consultation 6 months, workshops



Drought Management Plan (DMP)

- Complementary plan to the RBMP
- Goal: Minimize impact on users and ecosystems.
- Focused on temporary situations of drought and temporary scarcity
- Explicitly the conditions for the declaration of exceptional drought and clarify the administrative organization and coordination.
- Revised every 6 years. First plans approved in 2007. 3rd cycle, in public consultation.
- Public consultation 3 months, workshops

Drought Planning

DROUGHT

-

TEMPORARY SCARCITY

Hydrological Data

Precipitation

Precipitation, Groundwater levels, river flow, reservoir levels

Index calculation per territorial unit

Drought index (based on SPI) - IES

Water scarcity index - IEE

Scenario determination

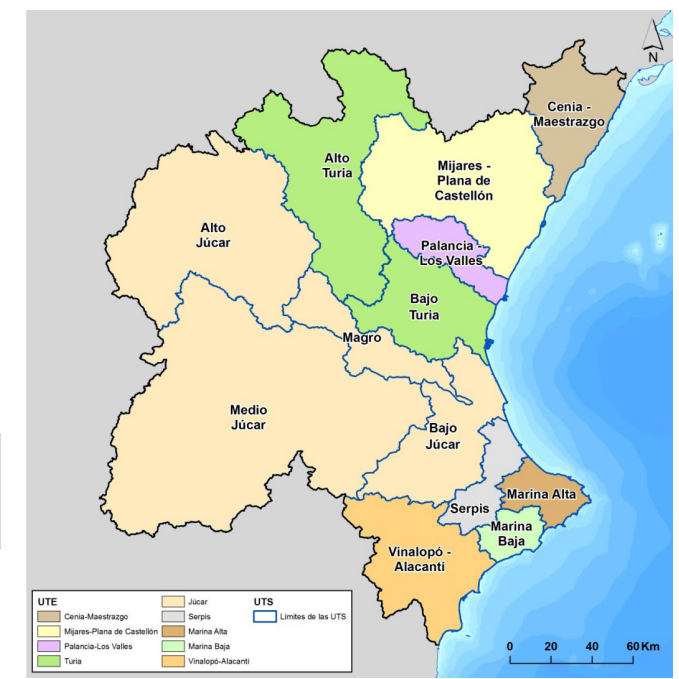
Normality / Scarcity

Normality / Prealert / Alert / Emergency

Measures

Temporal deterioration of status 4(6)
Reduction of environmental flows

Supply, demand, administrative coordination or environmental protection.



Drought Planning

WATER SCARCITY INDICATORS

Detect situations where potential problems to meet the demand may arise.

- Based on precipitation data, gauging stations, reservoir levels, groundwater level
- River Basin Organizations network of stations
- Reference period 1980-2018
- Indicators are weighed to build up to the territorial unit level
- Data should be available in a timely manner (10th day of the month)

SCARCITY INDICATOR	SCENARIO
0,75 – 1,00	NORMAL
0,50 – 0,75	
0,30 – 0,50	PRE-ALERT
0,15 – 0,30	ALERT
0,00 – 0,15	EMERGENCY

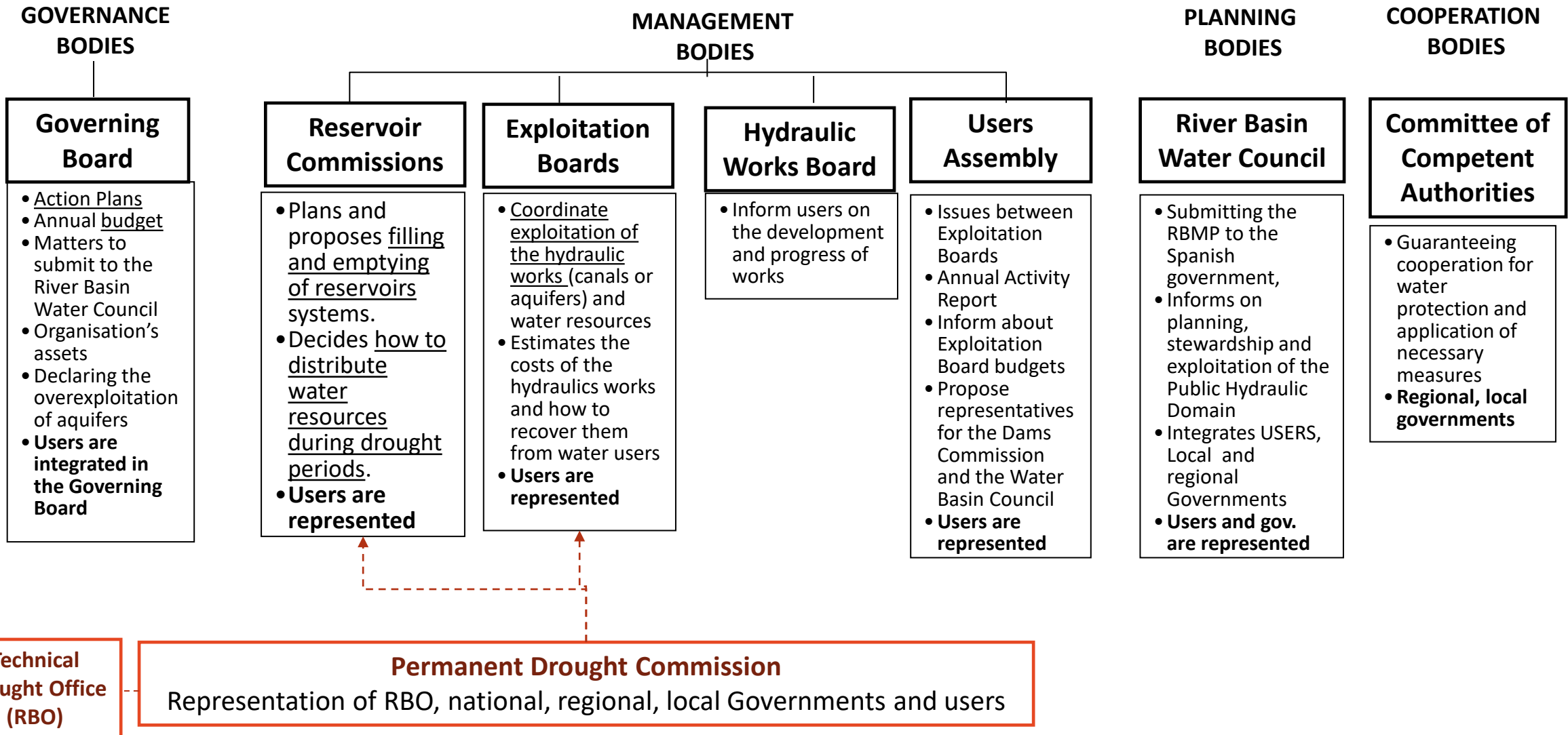


Cód. indicador	UTE	Indicator value	Coefficient	Value of IEE
VE04	Turia	0,66	0,08	0,60
EA01		0,93	0,09	
EE03		0,62	0,04	
EA02		0,64	0,09	
VE05		0,63	0,42	
PZ07		0,38	0,08	
PZ08		0,77	0,08	
PZ09		0,03	0,08	
PZ10		0,62	0,04	
EA03		Júcar	0,42	
EA04	0,55		0,20	
PZ11	0,53		0,03	
EA05	0,59		0,03	
EA06	0,46		0,03	
PZ12	0,06		0,03	
VE06	0,52		0,03	
PL03	0,48		0,03	
VE07	0,64	0,36		

Drought Planning

RIVER BASIN ORGANIZATION STRUCTURE

PRESIDENCY



Drought Planning - Responses

ACTIONS AND MEASURES

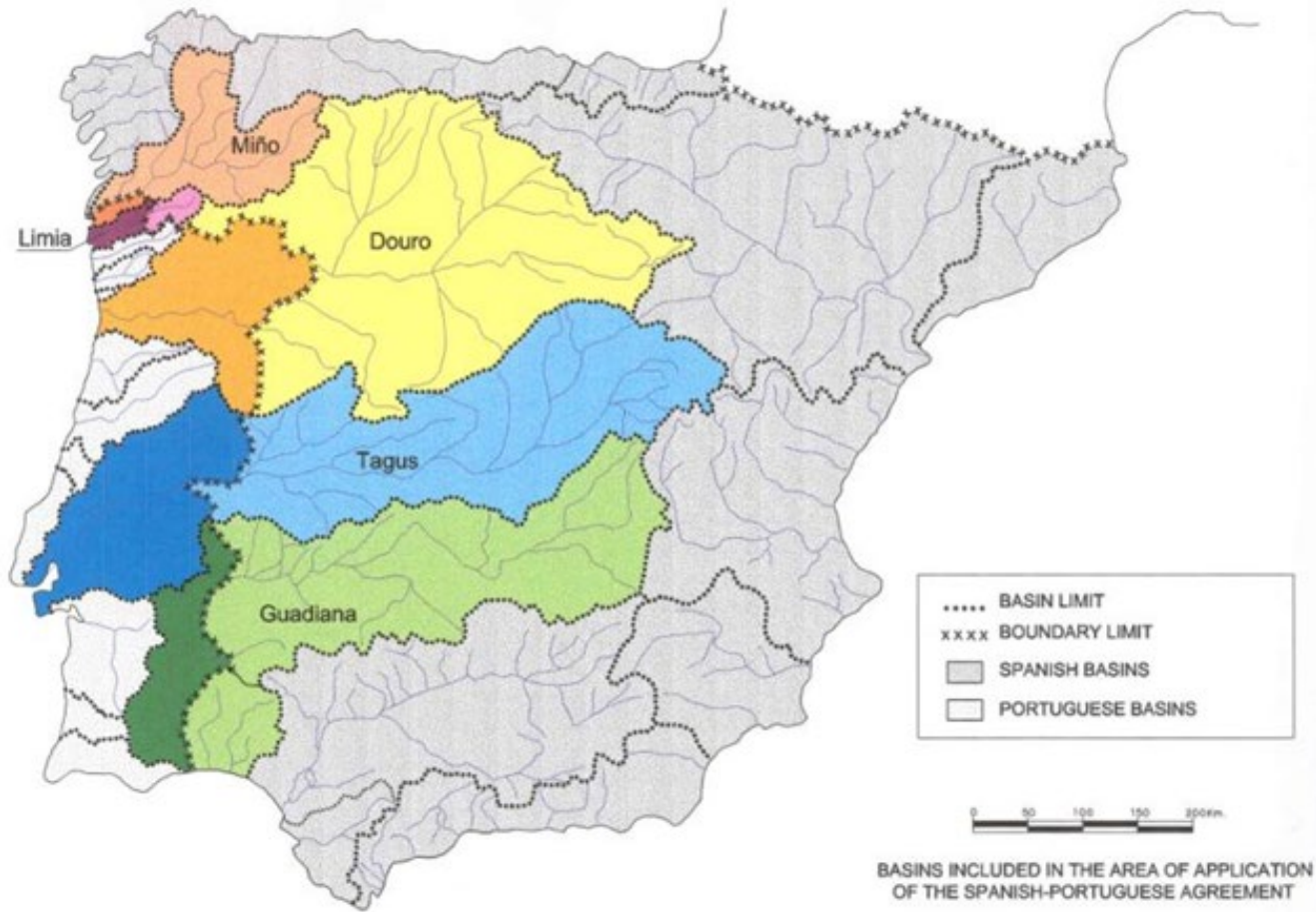
Water Scarcity Measures				
Situation	No Scarcity	Moderate Scarcity	Severe Scarcity	Extreme Scarcity
Scenario	Normal	Pre-Alert	Alert	Emergency
Typology of actions and measures	General Hydrological Planning, Monitoring	Communication and awareness raising, Monitoring Preparation	Management measures (supply and demand), Control and monitoring (Art. 55 Water act)	Strengthening of the measures, Possibility of exceptional measures (art. 58 Water Act)

- Their aim is to mitigate impact over water uses or the environment.
- These are temporary measures
- They are applied progressively, aiming to an early detection and action from the start of the episode.
- The goal of the measures is to manage exceptional situations, *not to solve structural imbalances*. Therefore, they do not include new infrastructure but in specific emergency situations.
- Measures can be classified in terms of their action point: supply, demand, administrative coordination or environmental protection.

Drought Planning - Responses

MEASURES AT RBO-LEVEL : PER TERRITORIAL UNIT

UTE 2 Mijares-Plana de Castellón		
Status	Examples of specific measures to adopt	Competent Authority
Prealert	Activate emergency plans for the supply systems of Almassora, Burriana, Castelló de la Plana, Vall d'Uixó, Onda, Vila-real and Consortium of Aguas de la Plana as well as those systems that in the future reach 20,000 equivalent inhabitants	Relevant Municipalities
	Analysis of the possibilities of using new resources contributed by reuse from the WWTP of Almenara, Almassora, Borriana, Xilxes, Llosa, Moncofa, Vall d'Uixó and Castelló de la Plana.	CHJ y GV
	...	CHJ y GV
Alert	Materialisation of the possibilities of new resources contributed by desalination from the IDAM of Oropesa and Moncofa	CHJ
	Restriction of up to 100% of the surface supply to the mixed irrigation systems of the Mijares, with respect to its surface consolidated demand, taking into account the application of the Bases Agreement for the Regulation of the Mijares River.	CHJ
	Reinforcement of monitoring actions for the conservation and protection of the resource and aquatic ecosystems considering the protection of wetlands, the protection of fluvial species and the impact of other measures on the natural environment, with special attention to the Marjal d'Almenara Wetland.	CHJ y GV
Emergency	...	
	Intensification of the possibilities of using new resources contributed by desalination from the IDAM of Oropesa and Moncofa.	CHJ
	Start of the restrictions to protect the available surface resources: between 15 and 25% of the supply to the traditional irrigations of the Mijares with respect to its consolidated demand.	CHJ
	Restriction of up to 100% of the surface supply to the mixed irrigations of the Mijares, with respect to its surface consolidated demand, taking into account the application of the Bases Agreement for the Regulation of the Mijares River.	CHJ
	Start of saving measures to protect the underground resources available in bodies of groundwater in poor quantitative state, especially in Plana de Castelló: reduction of up to 15%.	CHJ y users
...		



Shared Surface:

264.560 km²

 **22 %**

 **78 %**

- ✓ Spain and Portugal: Members of the UE, common env. acquis
- ✓ Directive 2000/60/EC, *establishing a framework for Community action in the field of water policy*, applies on both sides
- ✓ Albufeira Convention 1998 – Implemented by the CADC
- ✓ Reviewed in 2008: includes quarterly flow regime
- ✓ ES-PT anual Summits: Address water under the CADC umbrella.

RBM Planning and Drought Management in shared basins



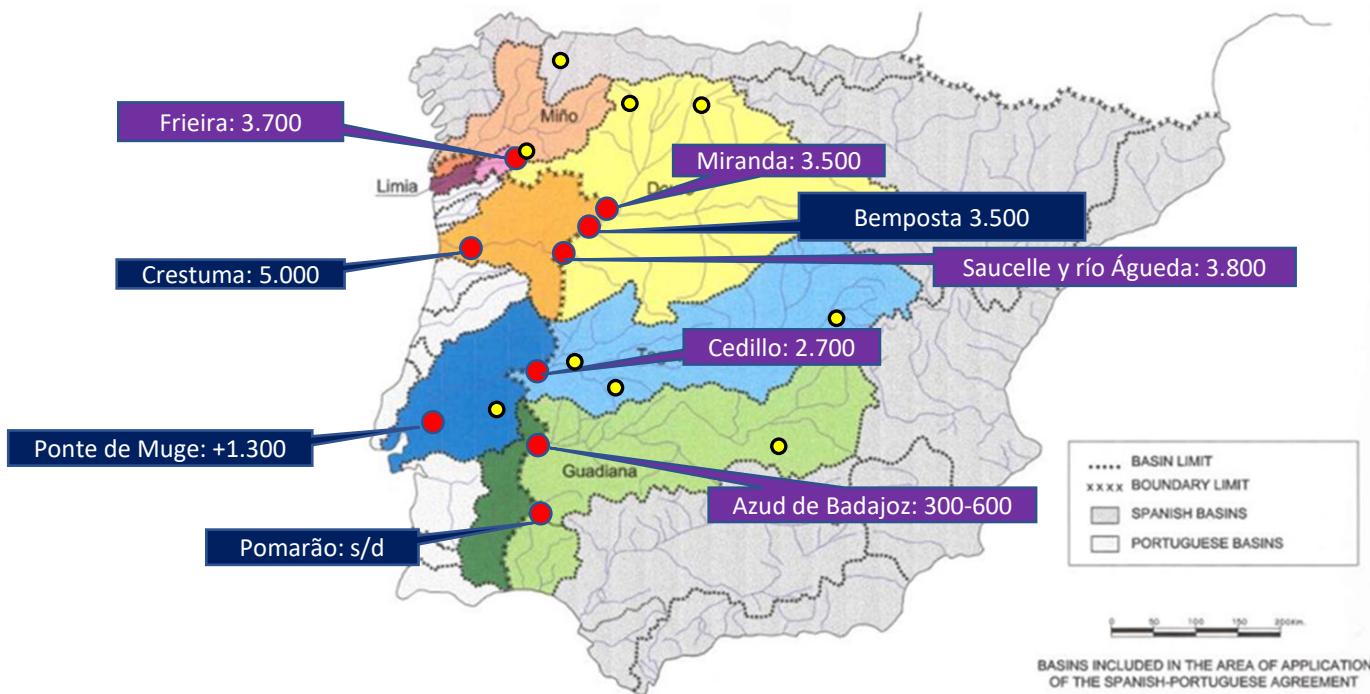
River Basin Management Plans for the TF basins

- Transboundary consultations for all shared waterbodies
- Evaluation of Pressures, Impacts, risks and status of each waterbody, and
- Setting of Environmental Flow requirements.
- Includes the Programme of Measures to achieve the environmental objectives



Drought Management Plans for TF basins

- Exchange of hydrometeorological and status information
- Need for further harmonized approach to prolonged drought and water scarcity situations
- Setting of common set of indicators is needed for the whole transboundary space



- In the year 2021/22 there were difficulties with the compliance of the hydro-meteorological conditions due to lack of precipitation.
- February 2022 onwards: multiple meetings held between Spain and Portugal at all levels
- Monitoring at monthly scale
- XXII plenary meeting CADC meeting (Feb. 2022): New working group on droughts
- The “Spanish approach” has worked well for the Minho-Limia Basin

