

EU Green Week  
**PARTNER EVENT**

# Strengthening Regulatory Frameworks for Water & Sanitation Resilience

Online Event  
04 June 2024

#WaterWiseEU



# Webinar information

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# Webinar information



- **'Chat' box:** please use this for general requests and for interactive activities.
- **'Q&A' box:** please use this to send questions to the panelists. (We will answer these during the discussions)



# Objectives

- The objective of this webinar is to address the following questions:
  - Adaptive regulatory strategies: how can regulatory frameworks adapt to the dynamic challenges of water management in pursuit of greater resilience ?
  - Technology integrations: how can technological advances enhance regulatory processes aimed at greater water resilience?
  - Cross-sectoral collaboration: how can institutional arrangements and cross-sectoral collaboration among regulators, utilities and communities contribute to achieve resilience goals?



# Water and Sanitation Resilience

- Resilience is the key of this webinar.
- But what it means resilience for the water and sanitation sector?



# Water and Sanitation Resilience

- The United Nations Office for Disaster Risk Reduction (UNDRR) defines it as:
  - The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and reservation of its essential basic structures and functions through risk management.



# Water and Sanitation Resilience

- In “Water resilience in the Anthropocene”, Falkenmark, Wang-Erlandsson and Rockstrom define it as:
  - The capacity of socio-ecological systems to deal with shocks, adapting to changing conditions and transforming in situations of crisis are fundamentally dependent on the functions of water, e.g. to regulate the Earth’s climate, to support biomass production and to supply water resources for human societies.



# Relevant materials

- Publications

- IWA & IDB “Regulators and the Application of the Human Rights to Drinking Water and Sanitation in Latin America and the Caribbean” – available here: <https://iwa-network.org/publications/>
- IWA’s Lisbon Charter – available here: <https://iwa-network.org/publications/the-lisbon-charter/>
- IWA’s Manual on the Human Rights to Safe Drinking Water and Sanitation for Practitioners – available here: <https://iwa-network.org/publications/manual-on-the-human-rights-to-safe-drinking-water-and-sanitation-for-practitioners/>





# Moderator and Speakers



**Robert Bos**  
IWA, Switzerland  
(Moderator)



**Batsirai Majuru**  
WHO, Switzerland



**Vera Eiró**  
ERSAR, Portugal



**Yvonne Magawa,**  
ESAWAS, Zambia



# Agenda

- **Introduction**  
*Robert Bos, IWA, Switzerland*
- **Strengthening cross-sectoral collaboration for water resilience – a wider perspective**  
*Batsirai Majuru, WHO, Switzerland*
- **Case 1: ESAWAS**  
*Yvonne Magawa, ESAWAS, Zambia*
- **Case 2: ERSAR**  
*Vera Eiró, ERSAR, Portugal*
- **Q&A Panel Discussion**  
*Speakers & Moderator*
- **Close**  
*Robert Bos, IWA*



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# Strengthening cross-sectoral collaboration for water resilience – a wider perspective

*Batsirai Majuru*  
*WHO, Switzerland*

#WaterWiseEU



# Outline

- Need for common definition and monitoring framework
- Current efforts
- Challenges
- Role and input of regulators



# Did somebody say resilience..?

- Do we have a sound, agreed normative definition and monitoring with core indicators that would support decision-makers to monitor progress, evaluate impact, and ensure accountability?

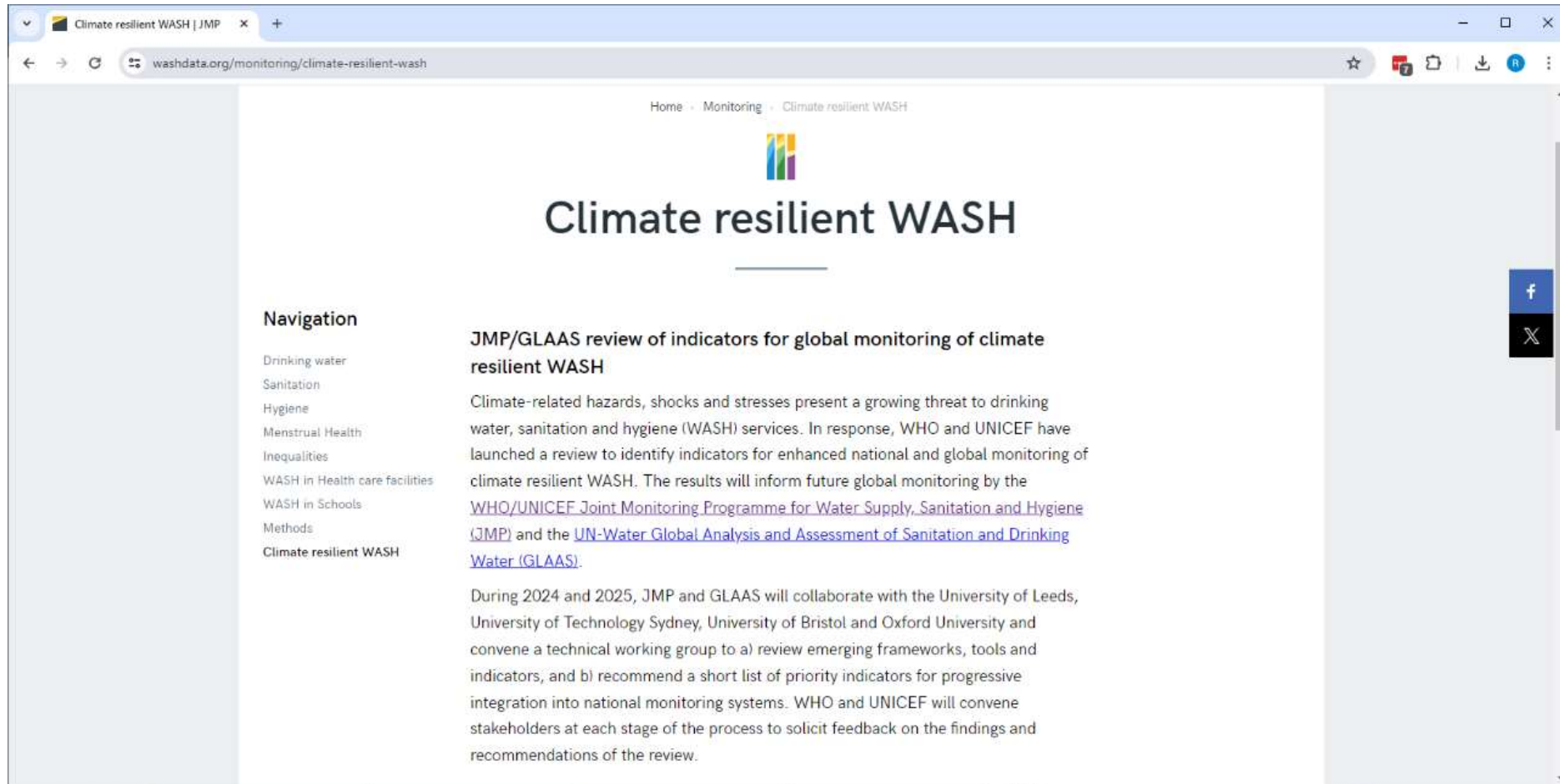


# Why definitions and monitoring frameworks matter

- Benefits of having a globally agreed set of core indicators:
  - Consistent tracking of water, sanitation and hygiene (WASH) resilience in a country over time and across countries
  - Better harmonization among collaborators, development partners and countries



# Current efforts to develop indicators for climate resilient WASH



Home > Monitoring > Climate resilient WASH

## Climate resilient WASH

**Navigation**

- Drinking water
- Sanitation
- Hygiene
- Menstrual Health
- Inequalities
- WASH in Health care facilities
- WASH in Schools
- Methods
- Climate resilient WASH

### JMP/GLAAS review of indicators for global monitoring of climate resilient WASH

Climate-related hazards, shocks and stresses present a growing threat to drinking water, sanitation and hygiene (WASH) services. In response, WHO and UNICEF have launched a review to identify indicators for enhanced national and global monitoring of climate resilient WASH. The results will inform future global monitoring by the [WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene \(JMP\)](#) and the [UN-Water Global Analysis and Assessment of Sanitation and Drinking Water \(GLAAS\)](#).

During 2024 and 2025, JMP and GLAAS will collaborate with the University of Leeds, University of Technology Sydney, University of Bristol and Oxford University and convene a technical working group to a) review emerging frameworks, tools and indicators, and b) recommend a short list of priority indicators for progressive integration into national monitoring systems. WHO and UNICEF will convene stakeholders at each stage of the process to solicit feedback on the findings and recommendations of the review.



# UNFCCC Global Goal on Adaptation



The screenshot shows the UNFCCC website's navigation bar with the United Nations Climate Change logo and search options. The main navigation menu includes Home, SB 60, Process and meetings, Topics, Calendar, Climate action, Documents and decisions, About us, and News. The breadcrumb trail is Topics > Adaptation and resilience > Workstreams. The page title is "Global goal on adaptation." with sub-sections for Overview, Workshops, and Background. The Overview section contains the following text:

The 2015 Paris Agreement, Article 7 established, for the first time, a **global goal on adaptation**, to **enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change**, "with a view to contributing to sustainable development and ensuring an adequate adaptation response" in the context of the mitigation goal of keeping temperature rise to a maximum of 2°C or 1.5°C.

To better understand, conceptualize and ultimately achieve this goal, the countries that were signatories to the Paris Agreement (collectively, the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement, or the CMA) established the **Glasgow-Sharm el-Sheikh work programme on the global goal on adaptation** at COP 26 in Glasgow in 2021, to be carried out by the **Subsidiary Body for Scientific and Technological Advice (SBSTA)** and **Subsidiary Body for Implementation (SBI)**.

At **CMA 4**, Parties initiated the development of a framework for the global goal on adaptation, to guide the achievement of the global goal on adaptation and the review of overall progress in achieving it with a view to reducing the increasing adverse impacts, risks and vulnerabilities associated with climate change, as well as enhance adaptation action and support. The development of the framework, and in particular the discussion on targets for the global goal was a major focus area of the work programme throughout 2023.

At **CMA 5**, Parties adopted the UAE Framework for Global Climate Resilience, as part of the UAE Consensus. The framework includes a range of thematic and dimensional targets for climate adaptation and resilience and provides a platform for increased implementation of adaptation actions on the ground.

CMA 5 also established a two-year UAE – Belém work programme, on the development of indicators for measuring progress achieved towards the targets outlined in the framework.





# Challenges

- Scope and boundaries
  - Resilience of what?
  - Resilience to what?
  - Resilience for what purpose?
- Measurability, comparability



# JMP/GLAAS process

- Academic partners (Leeds, Bristol, Sydney, Oxford) + expert working group
- Phase 1 (2024): Expansion of the knowledge base
  - Evidence reviews
    - Resilience monitoring in WASH-adjacent sectors (infrastructure, health, agriculture)
    - Emerging tools and indicators for resilience in the WASH sector
    - Indicators of resilience in drinking water supply (utility, non-utility piped, non-piped)
    - Indicators of climate resilience in sanitation and hygiene
  - Working framework for defining resilient WASH indicators, long list
- Phase 2 (2025): Focus on measurability, fitness to task
- Public consultations, prioritization and shortlisting, final report



# Other processes

- Global Goal on Adaptation
  - Water and sanitation: first of seven targets agreed at COP 28
  - “UAE-Belém work programme” on indicators over 2024-2025
- Sanitation and Water for All (SWA) Climate Task Team
  - Towards a definition of climate resilient WASH services
  - Proposed framework
- UN-Water Expert Group on Climate Change
- 2024 Summit of the Future
- ++



# Examples of climate-sensitive targets set under the UNECE Protocol on Water and Health

- Norway set a target on all water and wastewater plants serving more than 50 people having an adequate environmental management system that includes a risk analysis in which climate impacts are considered.
- Luxembourg set a target on building rainwater retention basins and storm water basins.
- Ukraine set a target on developing a national strategy for the reuse of wastewater in conditions of climate change until 2030, along with the relevant regulatory acts.



# Implications for regulators

- Engage with the ongoing processes to develop definitions and indicators
  - Share emerging tools and indicators for inclusion in JMP/GLAAS review
  - Participate in stakeholder consultations on tools and indicators
- Increase information and experience sharing on approaches, metrics and tools with other regulators



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# Case 1 - ESAWAS

*Yvonne Magawa  
ESAWAS, Zambia*

#WaterWiseEU



# About ESAWAS

- Association of Water Supply and Sanitation (WSS) Regulators formed in 2009, from the Eastern and Southern African region .
- **Two-fold objectives:**
  - Capacity building and information sharing
  - Regional regulatory cooperation - identify and encourage the adoption of best practices to improve the effectiveness of WSS regulation in the region
- **Governed by a Constitution and legally registered in Zambia.**
- **From twelve Members to Continent-wide**



# Role of Regulatory Frameworks in Water Resilience

Water Catchment  
protection

Tariff design – promote  
conservation

Reduce NRW

Recycle/Reclaim water  
considerations

Inter-agency collaboration  
Environment + Services +  
Resource Regulators

Service Resilience and  
Emergency Preparedness  
tools





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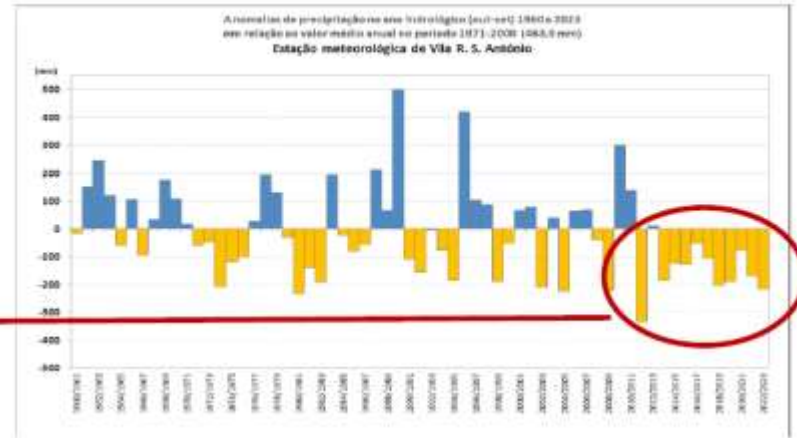
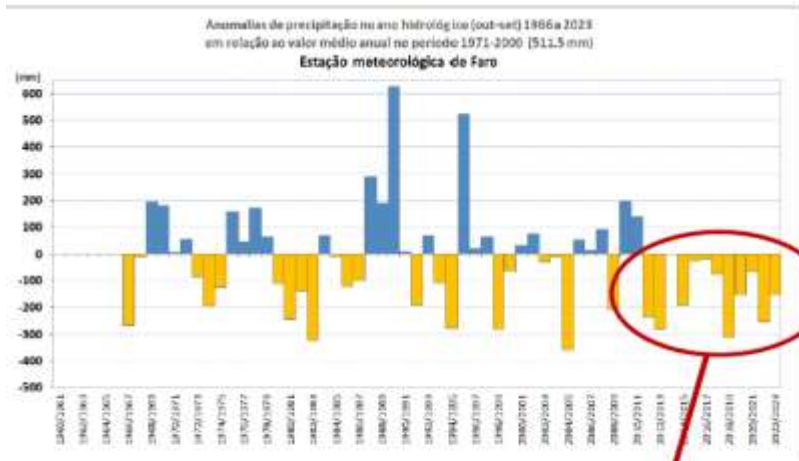
# Case 2 – ERSAR

*Vera Eiró*  
*ERSAR, Portugal*

#WaterWiseEU



# Water scarcity in the Algarve (South of Portugal)



9 to 10 years in a row with rainfall under average

Source: IPMA



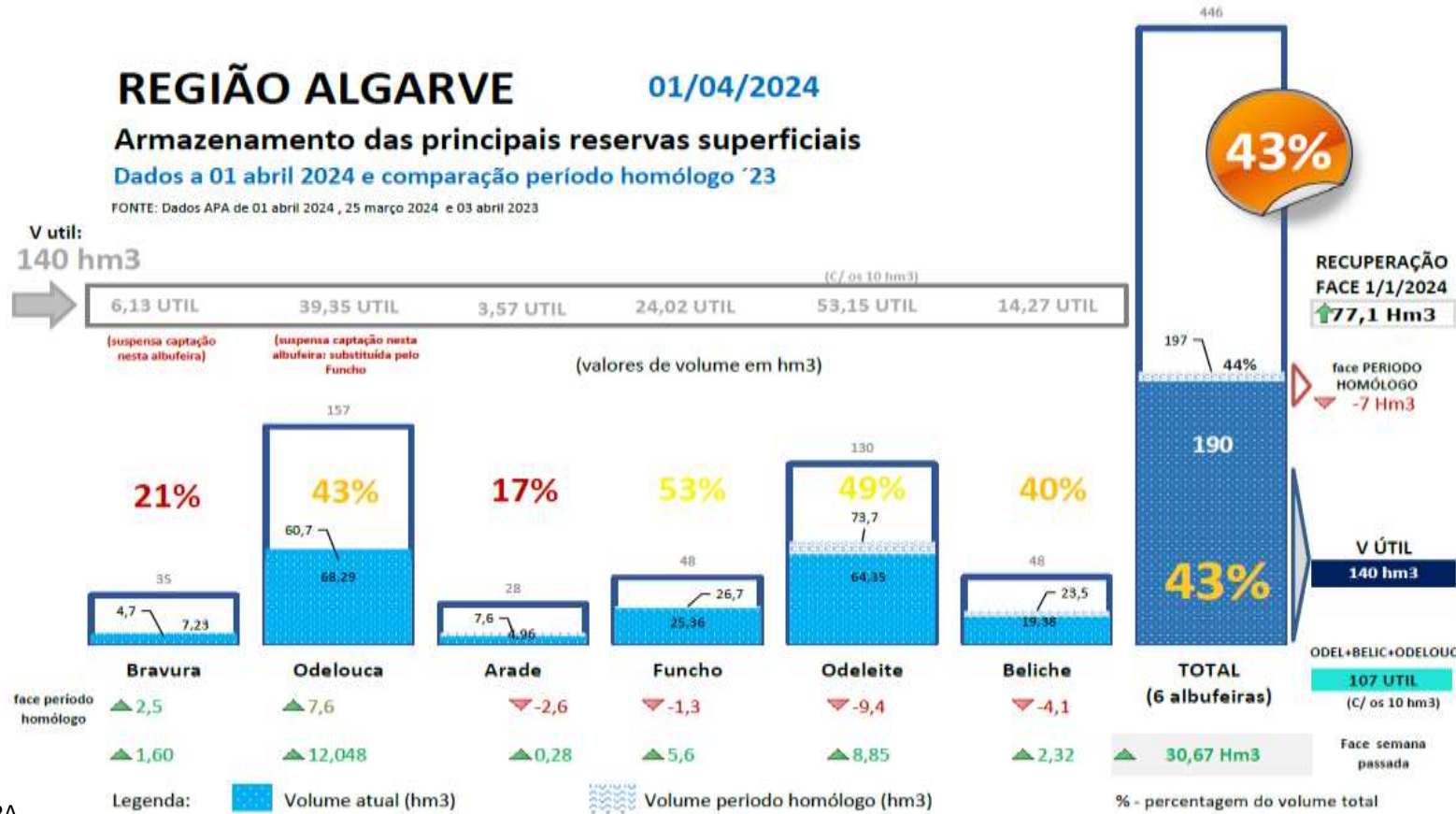
# Water scarcity in the Algarve (South of Portugal)



Source: IPMA



# Water scarcity in the Algarve (South of Portugal)



Source: APA



# Institutional framework – ERSAR

- Portuguese regulation:
- **National level** (mainland).
- Regulating **all the utilities**, for urban water and waste services, regardless of the governance model (State-owned, municipal-owned and private).
- Behaviour regulation / Structural regulation.



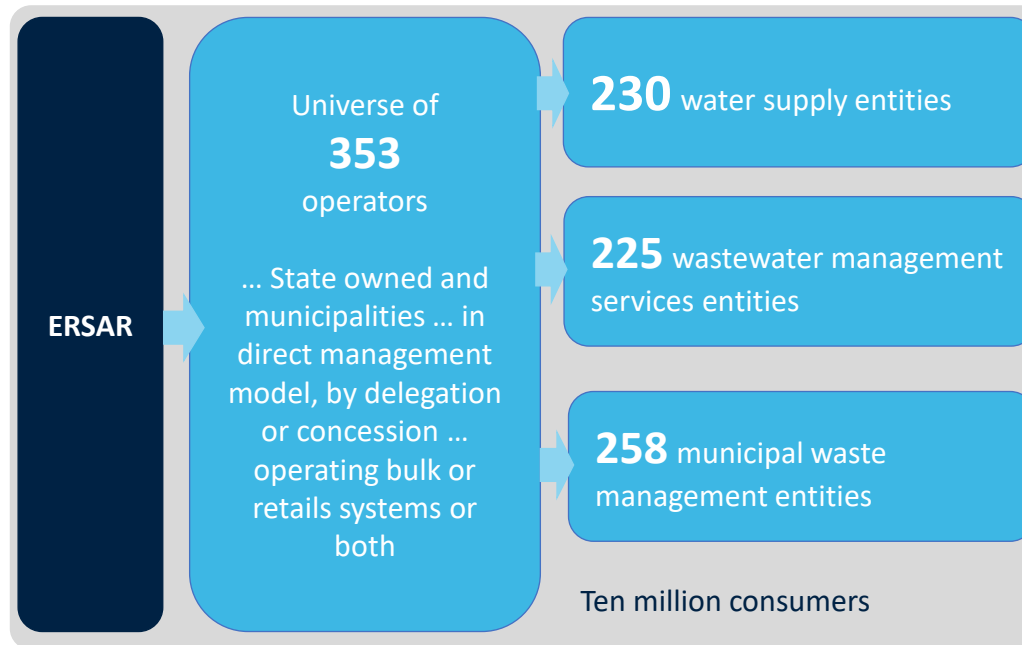
## Portugal

Population: 10.3 million

Area: 92,212 km<sup>2</sup>

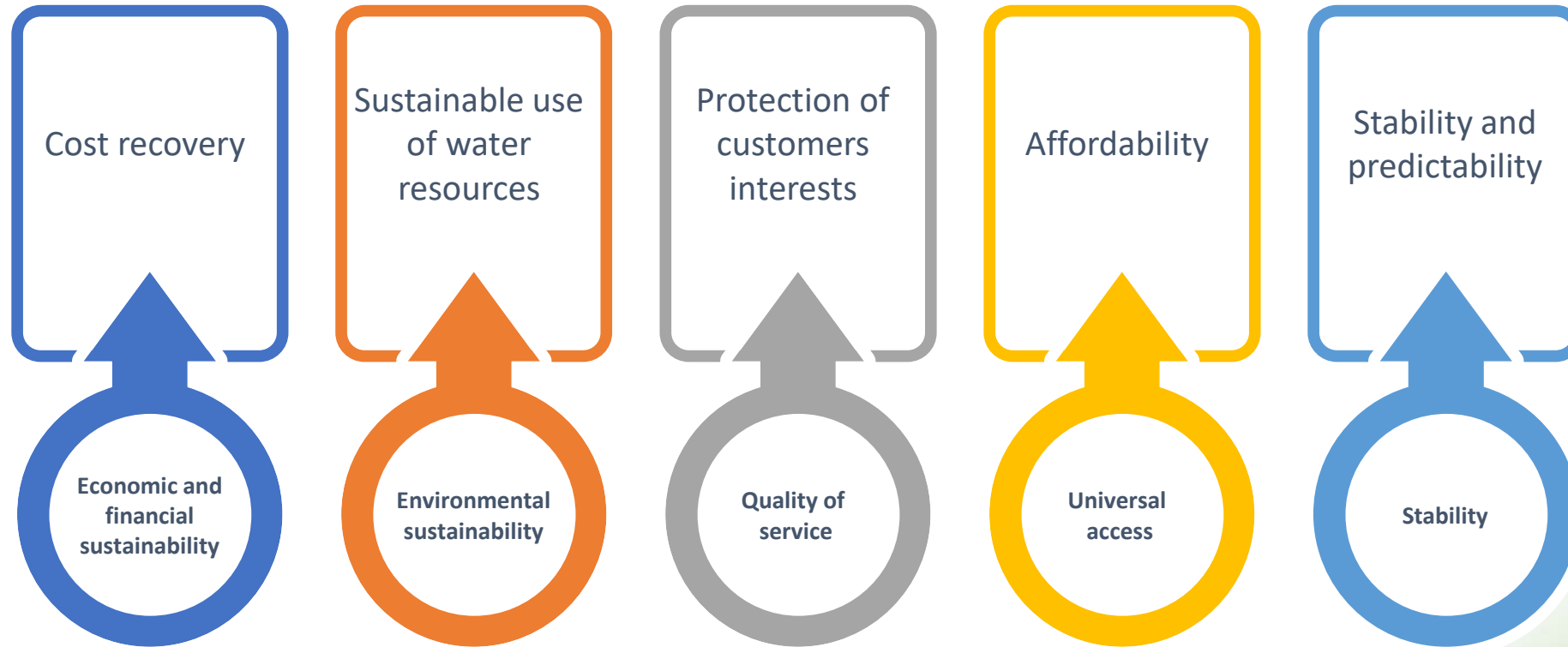
GDP per capita: ~20,000 Euro

The **size and diversity** of the regulated operators is vast, spanning state owned companies and numerous municipalities



# Institutional framework – ERSAR

## Regulatory principles



Source: Adapted from ERSAR's Tariff Recommendation for Water Services (n.º 1/2022)



# Closing the loop

The need to reduce water consumption – Awareness campaigns

- Stakeholder engagement and governance
- Promoting efficiency
- New water sources

*“one minute a day, let’s close the tap to the drought”*

Um minuto por dia,  
vamos fechar a torneira à seca.



*“water is life  
don’t waste it”*



# Closing the loop

## The need to reduce water consumption – Stakeholder engagement

### Municipalities



- 278 (308) municipalities
- Very different in size, population, development and economic levels, orography, ...
- Different political affiliation

### Agriculture & Industry

- Industry, +/- 10%
- Agriculture consuming +/- 70% of water



### Entities / Companies

- Around 240 entities
- Also different in size, ...
- Different legal status



### Consumers

- 10,3 millions





# Closing the loop

Economic regulation in the management of water scarcity

ECONOMIA • AMBIENTE

## ERSAR diz que seca no Algarve vai piorar e pede união entre municípios para aumentar preço da água

A ERSAR recomenda que todos os municípios do Algarve apliquem uma diferenciação tarifária, já que se trata de um "problema à escala regional".

**ERSAR says that the drought in the Algarve will worsen and calls for union between municipalities to increase the price of water.**

ERSAR recommends that all municipalities in the Algarve apply a differentiation in tariffs as this is a "problem of regional scale"



# Closing the loop

## Economic regulation in the management of water scarcity

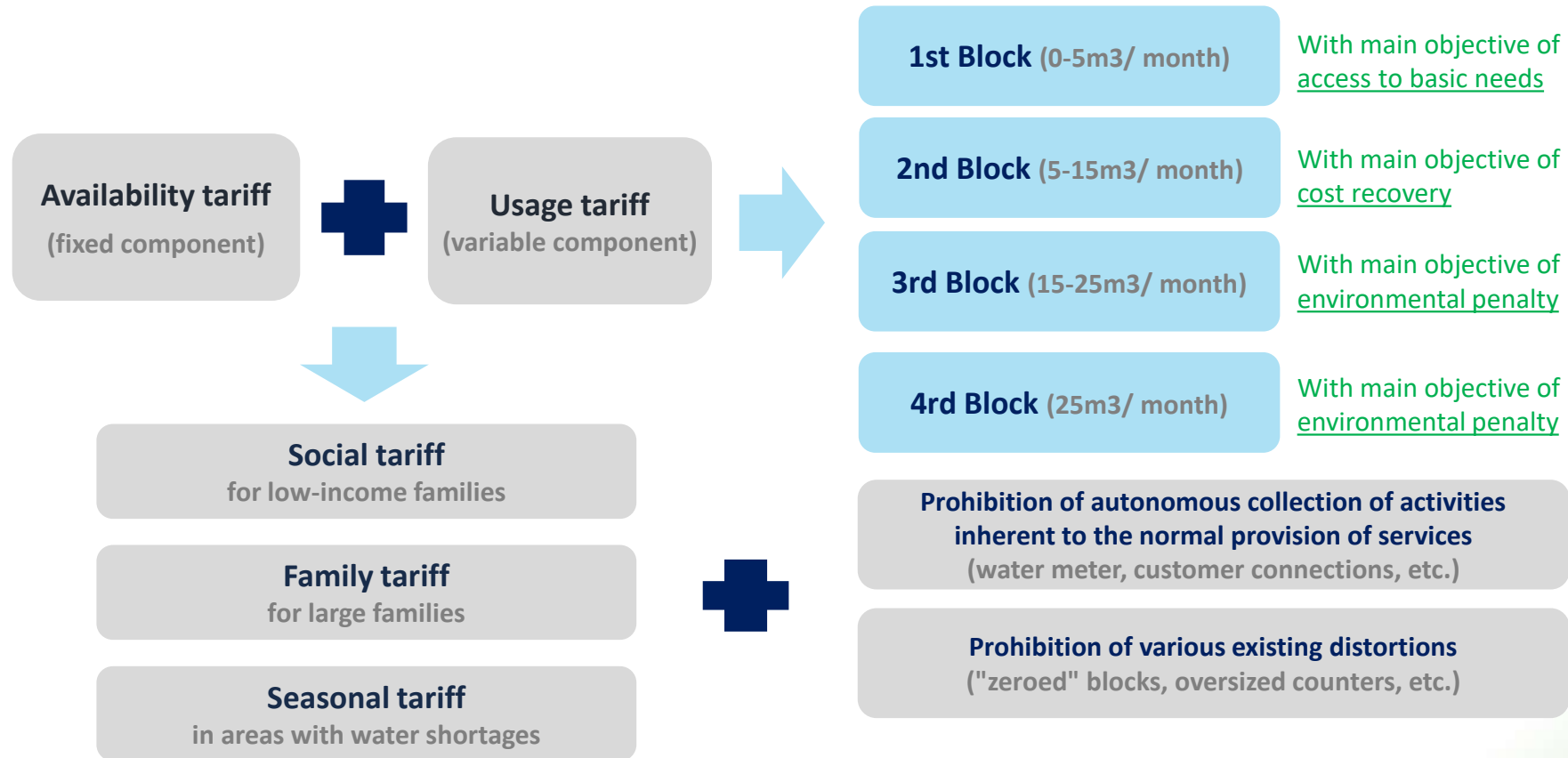
- The critical situation: water available for human consumption till September 2024
- The creation of the Drought Committee (... including ERSAR)
- Directives from the Drought Committee
- Decisions made by main stakeholders (including Government)

Directives from the Drought Committee (short term)		Decisions made by main stakeholders (short term)	
Human consumption	15% reduction	Human consumption	15% reduction
Tariffs	15% to 50% increase	Tariffs	15% to 50% increase
Agriculture & Manufactures	75% reduction	Agriculture & Manufactures	25% reduction
Tourism sector	15% reduction	Tourism sector	15% reduction



# Closing the loop

## Economic regulation in the management of water scarcity



Source: Adapted from ERSAR's Tariff Recommendation for Water Services (n.º 1/2022)



# Closing the loop

## Economic regulation in the management of water scarcity

- **Seasonal tariffs** are meant to **encourage efficient consumption** when water is less available (and only during that period).
- Can be applied in regions where there is a distinct wet and dry seasons, with insufficient capacity in the dry season that can be fulfilled with excess of water in the wet season (worsened in tourist areas where there is extra demand). Can be applied during drought periods (but, for what drought severity?).
- **Plan for additional capacity** that is needed to match supply with demand in the dry season (Underground water vs surface water).



Need to ensure that the cost of water (seasonal tariff) is clearly linked to rainfall seasonality, meaning production capacity utilization would be impacted by rainfall only



# Closing the loop

## The resilience investments – Recovery and resilience plan

### OBJECTIVES:

TO IMPROVE WATER RESILIENCE IN THE REGION BY ADAPTING TO CLIMATE CHANGE

TO DIVERSIFY ECONOMIC ACTIVITY

200 M€

FINANCED BY THE RECOVERY AND RESILIENCE FACILITY OF THE EU

30 HM<sup>3</sup>/YEAR

IN ADDITIONAL RESILIENCE



#### SM 1 – REDUCTION OF WATER LOSSES IN THE URBAN SECTOR

Intervene in water networks to identify and reduce water losses

35  
M€



#### SM2 – REDUCTION OF WATER LOSSES AND INCREASE IN EFFICIENCY IN AGRICULTURE

Introduce meters in all non-metered irrigation perimeters and reduce water losses

17  
M€



#### SM 3 – REINFORCE THE GOVERNANCE OF WATER RESOURCES

Intervene in water networks to identify and reduce water losses

5  
M€



#### SM 4 – PROMOTE THE USE OF RECLAIMED WATER

Improve the treatment quality and build reclaimed water pipes to bring water to non-potable water consumers.

23  
M€



#### SM 5 – INCREASE THE EXISTING CAPACITY OF RESERVOIRS AND BUILD NEW SOURCES OF WATER

Ensure the connection between different networks and having a new abstraction upstream to ensure resilience.

75  
M€



#### SM 6 – PROMOTE SEA WATER DESSALINATION

Introduce meters in all non-metered irrigation perimeters and reduce water losses

93  
M€  
\*

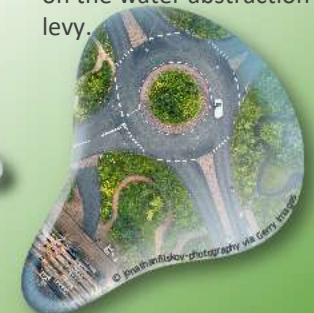


### REGULATOR'S CONCERNS

Who pays for the additional costs on urban systems to ensure additional resilience?

Urban users cannot be called solely to pay for the additional resilience.

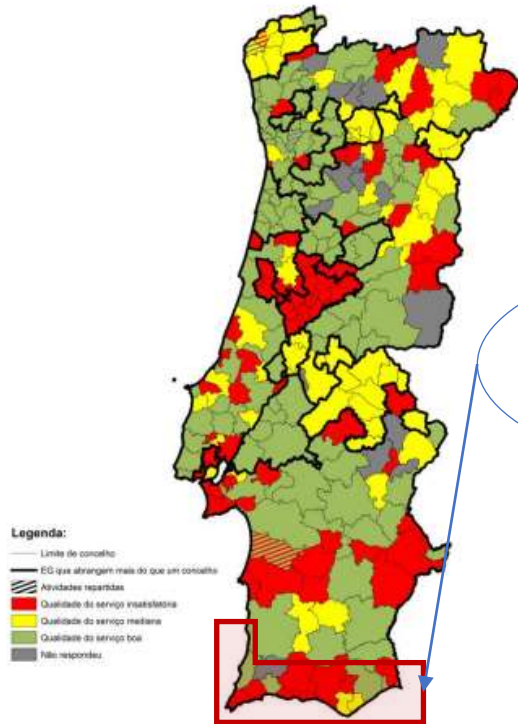
It is key to ensure mechanisms to spread the financial efforts from users by incorporating scarcity costs on the water abstraction levy.



\* Partially financed by the PRR instrument

# Closing the loop

## Water losses



Water losses in the Algarve  
are app. 15 Million of m<sup>3</sup>

Figura 258. Distribuição geográfica da avaliação do indicador AA15 para o serviço em baixa

- Tackling water losses – immediate impact
- Self paid investments
- Water already available in water systems, requiring that there is a renovation and rehabilitation of mains



# Closing the loop

## Reclaimed water

UTILITIES THAT PRODUCE  
RECLAIMED WATER

7

VOLUME OF RECLAIMED  
WATER

2.9

MILLION M3

WASTEWATER REUSE

0,4%

WASTEWATER REUSED  
WITHIN THE UTILITY

74%

Source: RASARP 2023, ERSAR



# Strengthening Regulatory Frameworks

## Commitment and policy consistency

- Political interference overrides the adequate approach in many cases
- It is important to create buy-in from policy makers and to support them in keeping the right track
- Aggregations are crucial to ensure common oversight, since new aggregated operators are less prone to political interference
- Aggregations also provide scale to build capacity and to be able to raise financing for future investments
- Information transparency from regulators empowers opposition parties and consumers in overseeing decisions
- Incentives to efficiency in every use through price signals and robust information





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# Q&A



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# Q&A



**Robert Bos**  
IWA, Switzerland  
(Moderator)



**Batsirai Majuru**  
WHO, Switzerland



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ERSAR, Portugal



**Yvonne Magawa,**  
ESAWAS, Zambia



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Opportunities and Challenges**

**IWA**  
the international water association

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Professor, Cardiff University, UK  
**Kate Gilmartin** - CEO, British Hydropower  
Association, UK



**WEBINAR**

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Case Studies from Africa and  
Asia**

**IWA**  
the international water association

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