



THE BENCHMARKING AND ASSET MANAGEMENT NEXUS KEY TOOLS FOR REGULATORS AND DECISION MAKERS KEYNOTE

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Outline

- 1. Social perception of urban water services**
- 2. New challenges and objectives of water services**
- 3. How can IAM and benchmarking contribute to meeting them?**
- 4. Concluding remarks**

SOCIAL PERCEPTION OF URBAN WATER SERVICES

In many countries, e.g. Portugal...

We turn on the tap (public water network) and safely drink the water, anytime...



In many countries, e.g. Portugal...

We flush the toilet...

...and do not think of it again,
confident of correct drainage and
treatment.



In many countries, e.g. Portugal...

We pay for the water bill, we complain about the price, but most time cannot recall how much we paid for.

When we guess, it tends to be above the actual cost.



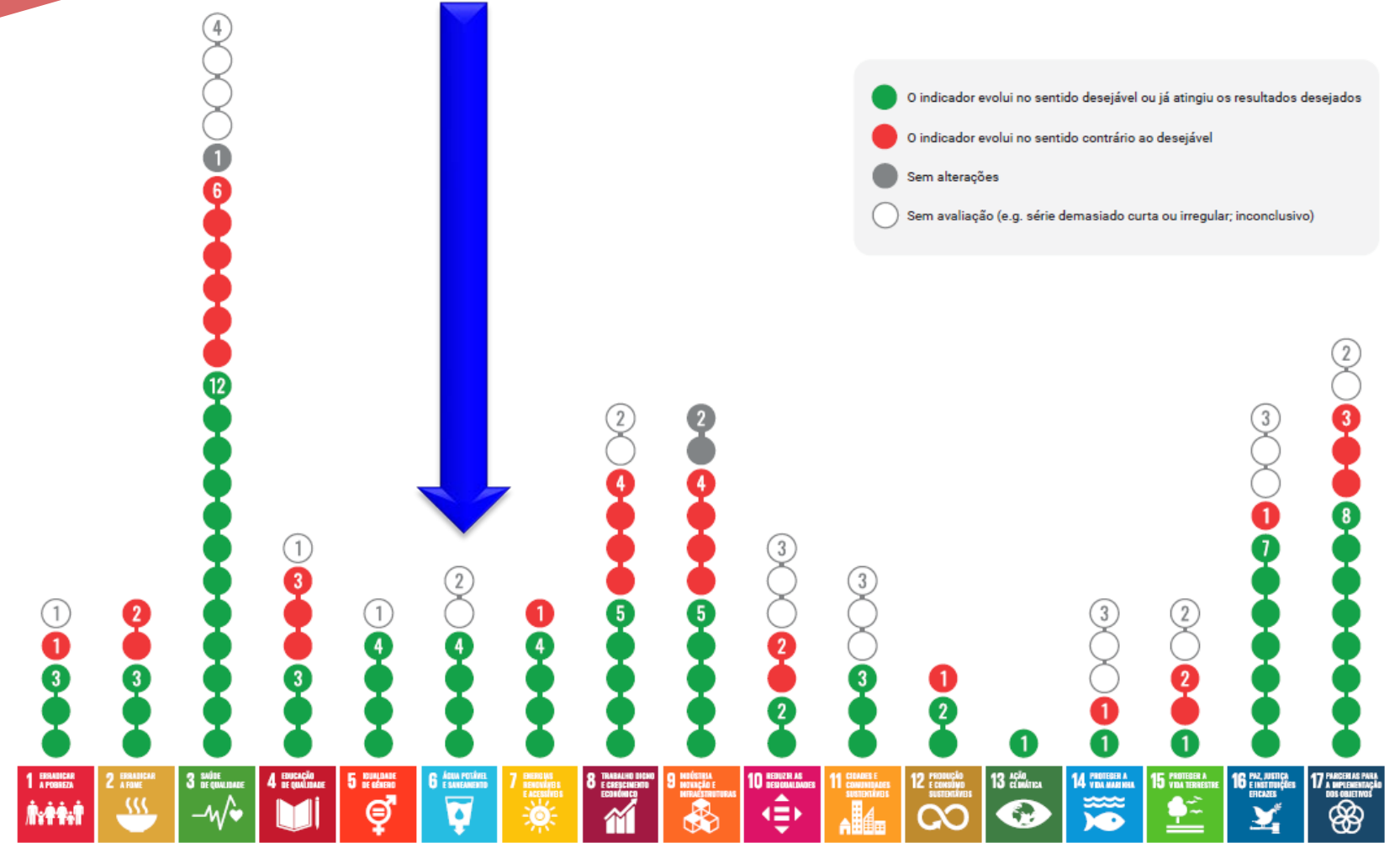
SDG REPORT - PORTUGAL

Evolução dos Indicadores ODS em Portugal no período 2010 - 2019*

INSTITUTO NACIONAL DE ESTATÍSTICA
ESTATÍSTICAS PORTUGALAS

OBJETIVOS DE DESENVOLVIMENTO SUSTENTÁVEL

- O indicador evoluiu no sentido desejável ou já atingiu os resultados desejados
- O indicador evoluiu no sentido contrário ao desejável
- Sem alterações
- Sem avaliação (e.g. série demasiado curta ou irregular; inconclusivo)



* Desde o primeiro ano disponível a partir de 2010 até ao último ano disponível.

Does this mean everything is ok?



Dreamstime.com

NEW CHALLENGES AND OBJECTIVES OF WATER SERVICES

OBJECTIVES OF WATER SYSTEMS

We expect that our urban water systems ...

... provide good quality services for all, at all times

... deliver an efficient, effective and sustainable management

... become more reliable, flexible, resilient, and safe



OBJECTIVES OF WATER SYSTEMS

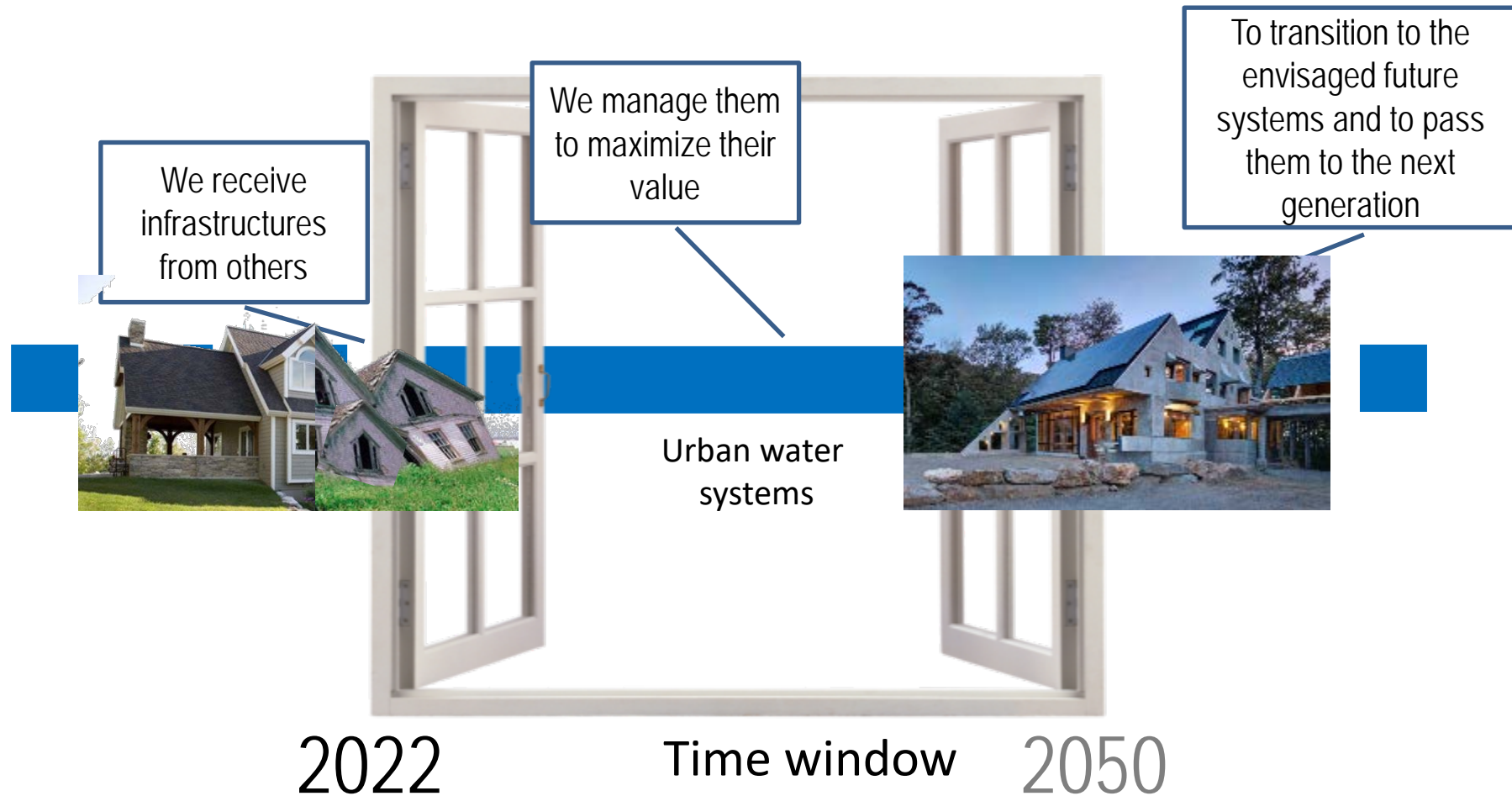
Utilities need to

- face the emergence of **climate changes** and expected impact on water quality and quantity, in normal situations and under extreme events
- contribute to achieving the **sustainable development goals (SDG)**
- understand the interconnections between **water and public health services**
- play an effective role in **circular economy**, promoting closed-loop systems, minimizing the use of resources and the production of waste, pollution and carbon emissions
- recognize and explore the **water-energy-food nexus** and the need for an approach that ensures safe water and food, sustainable agriculture and energy production, under increasing demand (FAO, 2011).



URBAN WATER INFRASTRUCTURES

drinking water – non-potable water – wastewater – storm water



Efficient, effective and sustainable management **requires balance...**

Performance – risk – cost

Stakeholders needs and expectations



Balance between stakeholders' needs and expectations



New solutions

- ❑ **Managing water infrastructures strategically, rethinking and adapting them, is the only feasible path towards sustainable and resilient water services.**
- ❑ **Like-for-like replacement is no longer an option!**

- Nature based solutions
- Stormwater management revisited
- Water / wastewater / stormwater treatment rethinking
- Non-potable water supply
- Advanced treatment based on natural products and processes
- Semi decentralised systems
- Exploring the potential of prosumers as consumer, producer and decision maker



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HOW CAN IAM AND BENCHMARKING CONTRIBUTE TO MEETING THESE NEW CHALLENGES AND OBJECTIVES?

IAM – Infrastructure Asset Management

Climate change: systems resilience



What challenges?

The increasing **frequency** and **intensity** of **extreme events** requires water systems to be more flexible and resilient, prepared to respond to uncertain and challenging situations

Opportunities for IAM

IAM helps defining **scenarios** and **objectives**, **diagnose** system performance, risk and cost, **compare** strategies or alternative actions, provide **support** and **transparency** to decisions and **monitor** the effect of its implementation

Opportunities for benchmarking

Benchmarking the outputs of climate preparedness and mitigation of CC impacts leverages other utilities

Sustainable development goals (SDGs)



What challenges?

Water services have a duty to contribute directly to **SDG 6**, but also to **SDG 3** (health & well-being), **9** (industry, innovation and infrastructure), **17** (partnerships), **14** (life below-water) and **15** (life on land)

Opportunities for IAM

IAM contributes to...

SDG 6, 3 and 9: continuity, coverage and quality of service

SDG 17: interactions between water infrastructure, the environment, the various entities and stakeholders

SDG 14 and 15: integrated wastewater management

Opportunities for benchmarking

The SDG reports are a powerful benchmarking tool

Water and health

What challenges?

Increasing relevance of **emerging contaminants**, challenges of **quantity and quality of water** and the potential increase in **untreated water discharges** from climate change, risk of **pandemics** (e.g. COVID-19). Also **risk management** associated with the use of **alternative sources of water**



Opportunities for IAM

IAM induces **rethinking of existing infrastructures**, including public health issues in the study and choice of solutions to adopt

Opportunities for benchmarking

Benchmarking out of the box solutions drives the implementation of best practice across the water sector

Circular economy: water reuse



What challenges?

Paradigm of water services will change substantially with increase of reuse: **drinking water and non-drinking water services will coexist**, with different infrastructures, **more stakeholders**, **fuzzier boundaries** between urban services

Opportunities for IAM

The complexity of these new paths requires a **systemic** and **systematic way**, across services, which IAM principles and methods provide

Opportunities for benchmarking

Interconnections between services are highlighted with benchmarking

Water-energy nexus

What challenges?

Water services are **large consumers** of energy, but have **production potential** (eg, sludge digestion, installation of microturbines, installation of photovoltaic or wind energy equipment)

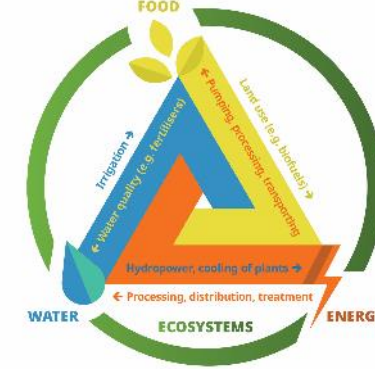
Utilities are important actors in the management of the water- energy nexus

Opportunities for IAM

The **integrated approach inherent to IAM** boosts solutions that contribute to **both water and energy efficiency**

Opportunities for benchmarking

Interconnections between services are highlighted with benchmarking



Public participation

What challenges?

Participatory processes are increasingly important for water services, in a context of ever more **complexity of management**. The **availability and transparency of information** is a key factor in this context



Opportunities for IAM

AM promotes public participation, **transparency of information** and **traceability** of decision-making

Opportunities for benchmarking

Public participation benefits and is impelled by transparent benchmarking
Benchmarking **changes public perception.**

CONCLUDING REMARKS

IAM IS KEY

TO MEET CURRENT CHALLENGES AND DRIVERS FOR CHANGE

IAM IS ALL ABOUT THIS:

THINK AHEAD - THINK ACROSS - THINK TWICE

Quote from: Strategic Thinking and Dynamic Governance

Prof Neo Boon Siong, National University of Singapore



quality-analytics.com



givingcompass.org



thinktwicemedia.com

THANKS

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