Defining Future Options

**CROATIA STUDY TOUR TO PORTUGAL**

**Water and Sanitation Services**

**The Portuguese experience in aggregation, efficiency, and water loss reduction**

# The Portuguese Water Supply and Sanitation Sector

European Commission

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Diogo Faria de Oliveira
Francisco Mariz Machado
Defining Future Options

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Ancient water tank, “Mãe d’Agua”, EPAL, Lisbon

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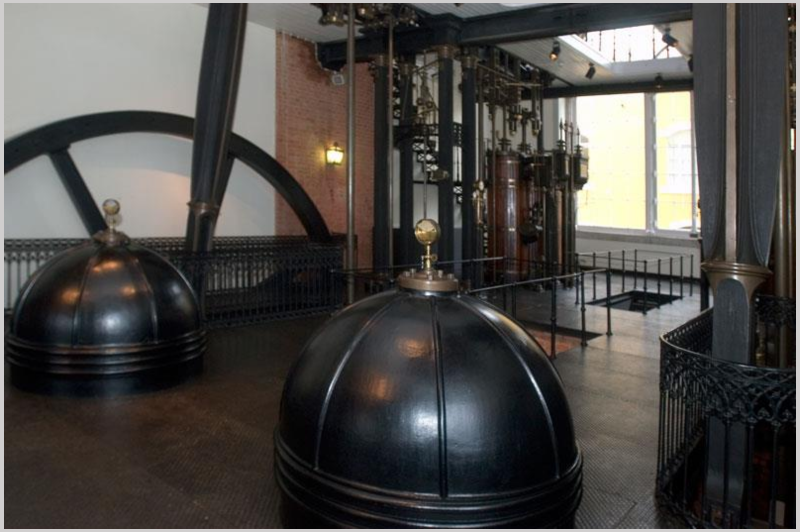


Ancient pumping station, Museu da Água, EPAL, Lisbon
Photo: Américo Simas

# Portuguese water sector background

## Portugal presented a challenging baseline back in 1992

**1992 KEY INDICATORS**

| | |
|---|---|
| • Water network coverage: | < 82% |
| • Drinking water quality: | < 50% |
| • Wastewater network coverage: | < 60% |
| • Wastewater treatment: | < 28% |
| • Coastal bathing waters quality: | < 70% |
| • Inland bathing waters quality: | < 30% |

*Source: ERSAR*

- Portugal entered in the EEC/EU in 1986
- Up to 1992, Portugal was facing little improvement in the water and sanitation
- Municipalities were exclusively responsible for water and sanitation systems, and their capacity to invest was very limited
- Funds from EU were being directed to local, detached solutions, without national coherence
- Negotiations with the EU triggered the structural reforms introduced in Portugal

# Portuguese water sector background

## Portugal undertook legal, institutional and organizational reforms starting in 1993-1995

- Legal reforms
- Creation of a National Regulator
- Establishment of a National Water Company for “bulk” WSS (Águas de Portugal), and…
- …Aggregation through regional “bulk” water companies (100% public)
- Support from EU and EIB
- Cost recovery policy
- Incentive to private sector participation

**Laws and Regulations**

**Aggregation**
Multi-municipal Management Model

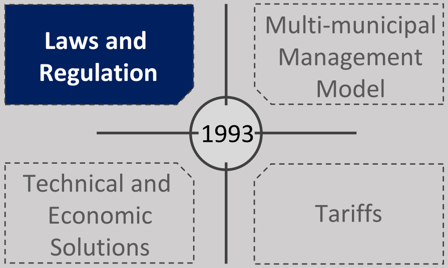
1993

**Sustainability**
Technical and Financial Solutions

**Tariffs**
Cost recovery and Affordability

# Portuguese water sector background

## Legal reforms encouraged a true water industry with the required investment capacity



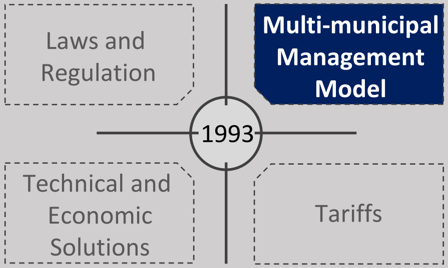

- ◊ Until 1993 local authorities were exclusively responsible for water and sanitation systems.

- ◊ In 1993, two distinct concession models were created:
  - ◊ **Public** multi-municipal systems between Government (51%) and Municipalities (49%);
  - ◊ **Private** concessions through international public tender promoted by the municipalities.

- Adequate management of water resources
- Professionalism of the water market
- Acceleration of the rate of capital investment
- Access to private capital

# Portuguese water sector background

## Aggregation of bulk water and wastewater systems allowed to accelerate investment



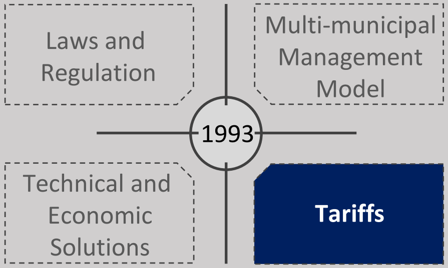

- Large scale systems;

  100% public concessions from 20 to 50 years
- Responsible for "bulk" services:
  - **Water treatment and supply to municipalities**
  - **Wastewater collection and treatment**
- Responsible for the design, construction, maintenance and operation of the systems.
- Downstream, municipalities still manage (or grant in private concession) the distribution networks to consumers and also sewerage networks ("retail" service).

- Municipalities are simultaneously shareholders and clients of the multi-municipal companies;
- European Union "Cohesion Funds" supporting capital investment up to 85%

# Portuguese water sector background

**Each utility has its own tariffs scheme. Usually, tariffs include fixed and volumetric block charges**




- Tariff to be charged to consumer include:
  - **Multi-municipal tariff**
  - **Water distribution and sewerage collection tariff**
- Multi-municipal systems practice “full cost recovery”, assuring sustainability and efficient asset management;
- **Municipalities are responsible to fix consumer’s tariffs and may subsidize service** to practice lower tariffs although “full cost recovery” is encouraged;
- **Social Tariffs** are in force in 70% of the municipalities

## TARIFFS ENSURE AFFORDABILITY

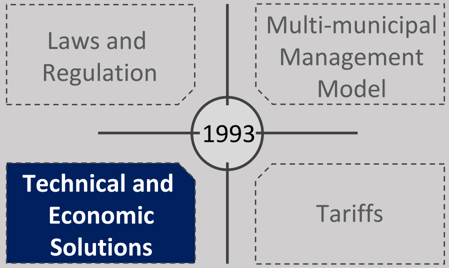
| WATER TARIFF (€) | |
|---|---|
| Average Multi-municipal Tariff | 0,56 |
| Average Tariff to Consumers | 1,14 |

| SANITATION TARIFF (€) | |
|---|---|
| Average Multi-municipal Tariff | 0,54 |
| Average Tariff to Consumers | 0,90 |

*Source: ERSAR, RASARP, Data: 2021*

# Portuguese water sector background

**Long term, resilient infrastructure**
**Full compliance with UWWTD and DWD**




- ◊ Master Plans to large urban areas:
  - ◊ **Oporto and Algarve: raw water reservoirs , WTP, strategic treated water tanks;**
  - ◊ **Estoril and Aveiro: Sewer main ring and WWTP.**
- ◊ "Second generation" of multi-municipal systems to less populated regions;
- ◊ National Strategic Plans approved each 7 years;

- Capacity to enlarge systems
- High degree of automation
- Careful selection of materials in terms of quality and price

Financial support from European Union and European Investment Bank.

# Portuguese water sector background

**The tremendous task ahead required planning, stakeholders' alignment and sound application of resources; A WSS national strategic plan was necessary**

**PEAASAR 2000-2006**

- Focus on Capital Investment on 1st generation Multi-municipal Systems

**PEAASAR 2007-2013**

- Focus on Capital Investment on 2nd generation Multi-municipal Systems
- Merging municipal systems to improve sustainability

**PENSAAR 2014-2020**

- Focus on efficiency
- Merging municipal systems to improve sustainability

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- Since 2000, National Strategic Plans are approved each 7 years
- Naturally, each plan was improved with the experience of the previous one
- The establishment of sequential strategic plans resulted on a constant improvement of the WSS sector

# Portuguese water sector background

**Strategic Plans and the national utility Águas de Portugal led to "creditworthiness"**
**Significant investment was made in the form of true blended finance**

## Accumulated Capital Expenditure [1993-2020]

| | |
|---|---|
| **Total:** | **M€ 14 718** |
| **Annual average:** | **M€ 545** |
| **Water:** | **M€ 7 775** |
| **Sanitation:** | **M€ 6 943** |

## Funding Sources [accumulated 1993-2020]

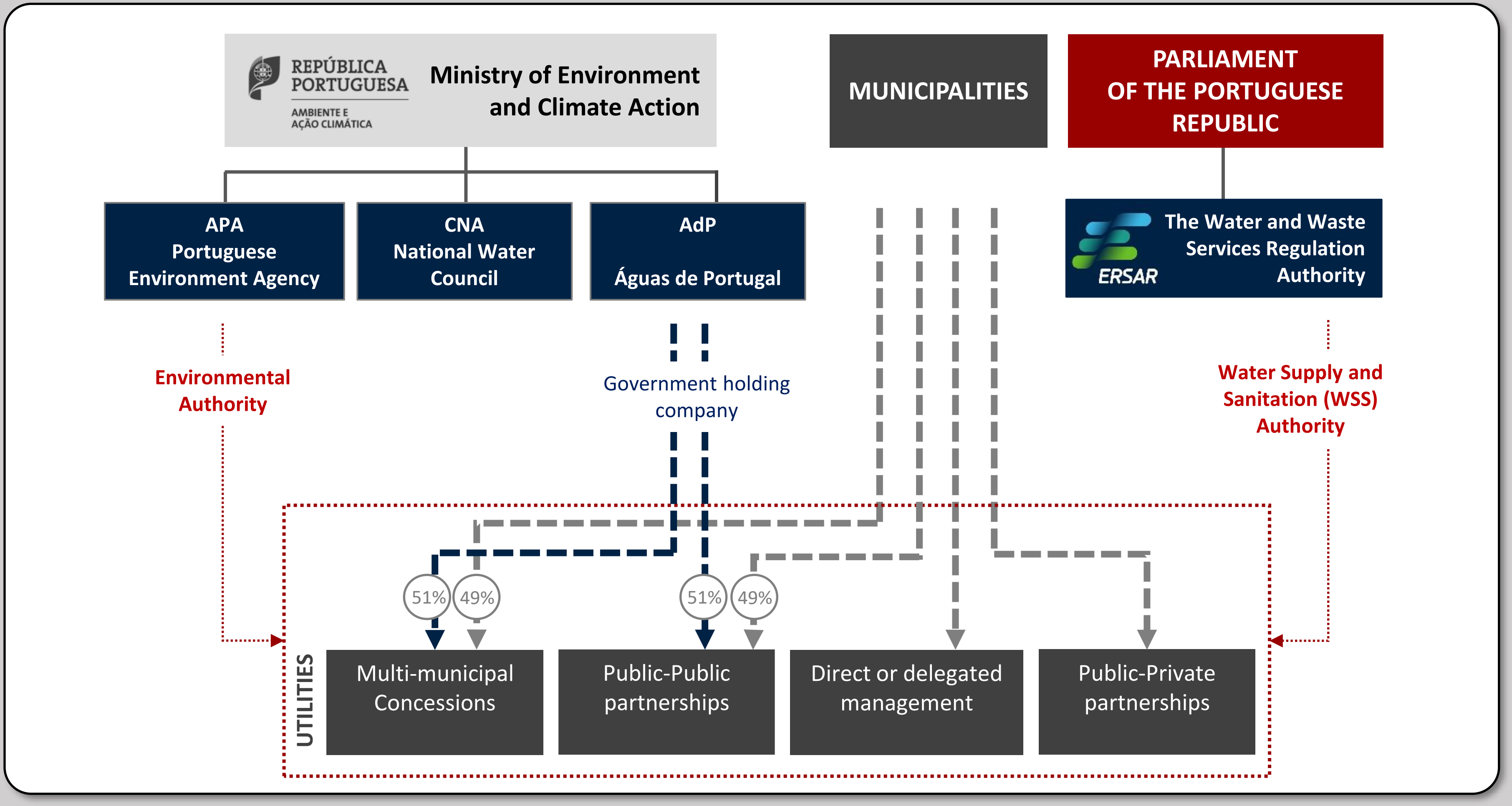
| | |
|---|---|
| European Union grants | M€ 6 520 |
| European Investment Bank | M€ 2 880 |
| PPPs | M€ 1 200 |
| Bonds – Private Placement | M€ 600 |
| Other (*) | M€ 3 518 |

(*) The remaining financial needs came from commercial loans, utilities self cash-flow and subsidies from taxes

*Sources: ERSAR, RASARP; GAG PENSAARP 2020; POSEUR, CUA; Defining Future Options*
*Data: 2020*

# Water sector organization

**In Portugal, Municipalities are responsible for the provision of water and wastewater services. They can voluntarily choose their management model**



# Aggregation of utilities

Brief overview of the Portuguese water sector

**Aggregation of utilities**

Regulation

Final remarks

Ancient standpost, Torres Vedras;
Photo: Victor Oliveira

# The state-owned utility AdP-Águas de Portugal

**A state-owned company, AdP-Águas de Portugal, is responsible for water and wastewater treatment ("bulk systems")**

- Multi-municipal management model between AdP (51%) and the municipalities (49%)
- Municipalities are simultaneously shareholders and clients of the multi-municipal companies
- Large scale systems: 100% public concessions from 20 to 50 years
- Responsible for the design, build, finance, maintenance and operation of the systems (DBFOT)

Águas de Portugal
- Holding company

100 %

EPAL
- Lisbon utility, EPAL was integrated in AdP

Min. 51% AdP
Max. 49 % Municipalities
- 12 multi-municipal systems covering 80% population

**Downstream, municipalities still manage (or grant in private concession) the distribution networks to consumers and sewerage networks ("retail" service)**

# The state-owned utility AdP-Águas de Portugal

**Municipalities' participation in the aggregated bulk systems is volunteer.**
**80% of the municipalities are partnering with AdP-Águas de Portugal**

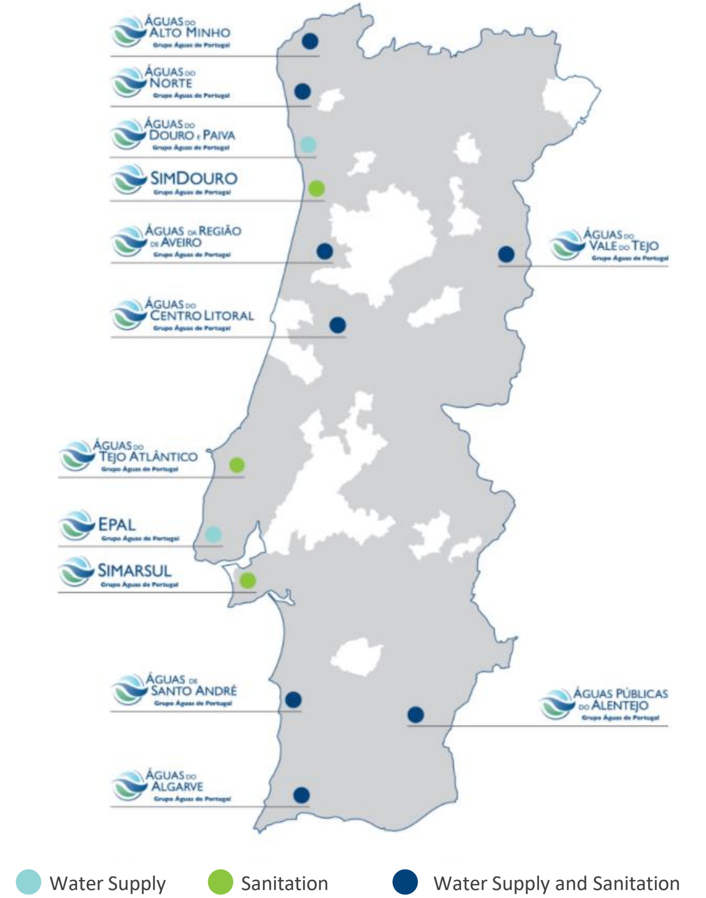
- AdP-Águas de Portugal financed 100% of the assets while:

  (1) managing properly the water resources;

  (2) ensuring financial and operational sustainability with full cost recovery tariffs;

  (3) introducing skilled professionals in management and operation and;

  (4) taking the "burden" of financing, building and operating WTP/WWTP out of municipalities

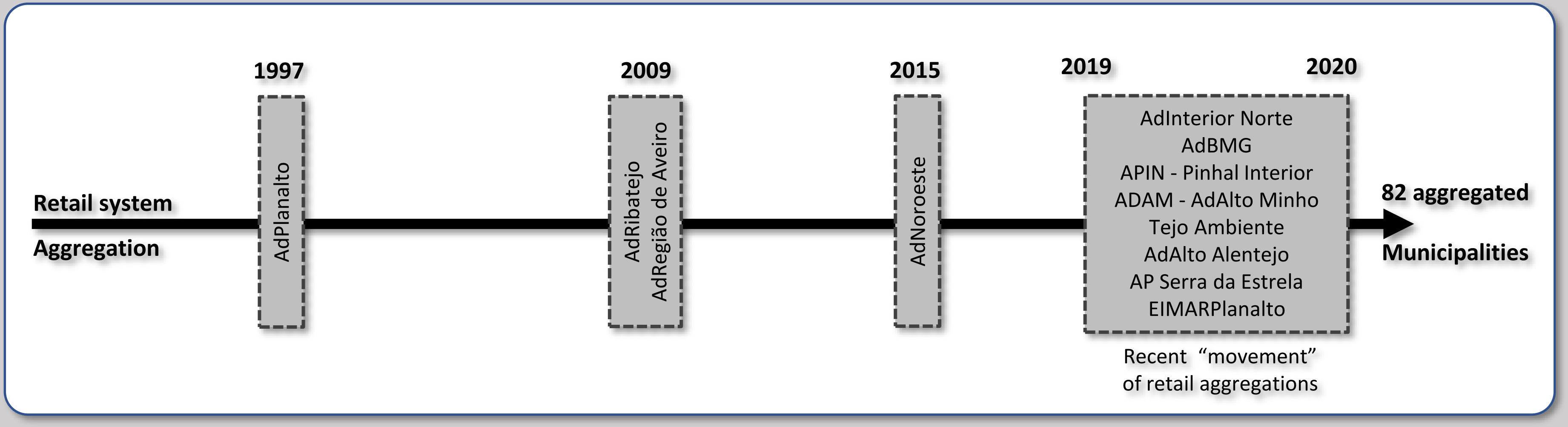



Note: the white areas represent the 44 municipalities not served by AdP

# Aggregation of the distribution systems

**82 Municipalities (of 278) choose to aggregate their systems into 12 regional utilities**

- Although a very limited number of retail systems' aggregations occurred in the past, a successful "movement" of aggregations kicked-off in 2019-2020
- This was largely possible due to an incentive scheme made available to municipalities



Brief overview of the Portuguese water sector

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Ancient standpost, Torres Vedras;
Photo: Victor Oliveira

# Regulation

## A national regulator evolved from a mere Observatory to an autonomous and politically independent Authority

**1995** - National Observatory
for public and private concessions
*(under Ministry for Environment)*

**1998**

IRAR - Regulation Agency for
public and private concessions only
*(under Ministry for Environment)*

**2004**

IRAR - Regulation Agency
for public and private concessions
and for quality of water to all Utilities
*(under Ministry for Environment)*

**2009**

ERSAR - Regulation Agency
All utilities' regulation and
quality of water
*(under M. for Environment)*

**2014**

ERSAR – Regulation Authority
All utilities' regulation and quality of water
*(under Parliament)*

ERSAR

Regulatory Model

| Structural Regulation | Utility Behavioral Regulation |
|---|---|
| Organization of the sector | Legal and contractual regulation |
| Legislation of the sector | Economic regulation |
| Information of the sector | Quality of service regulation |
| Capacity building of the sector | Drinking water quality regulation |
| | Consumer compliance regulation |

## The regulator introduces confidence in investors, operators and customers

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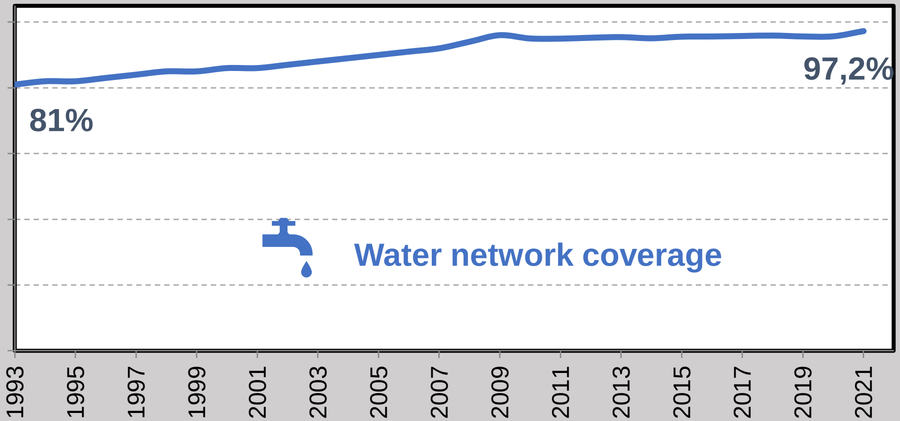
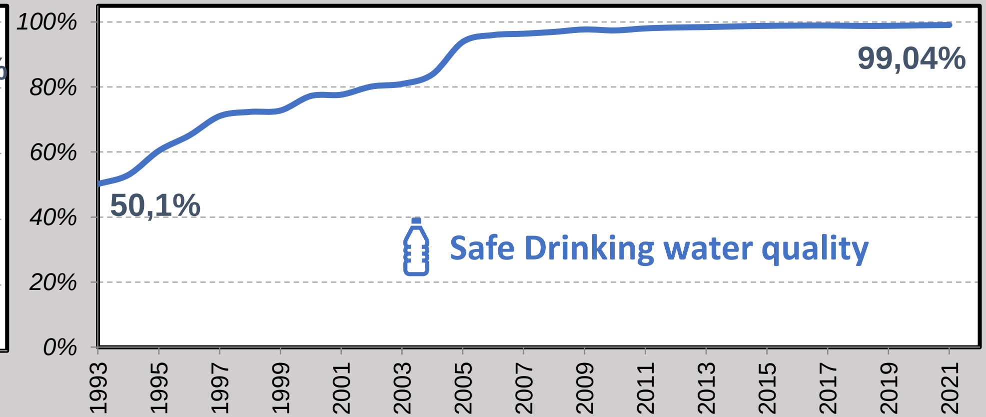
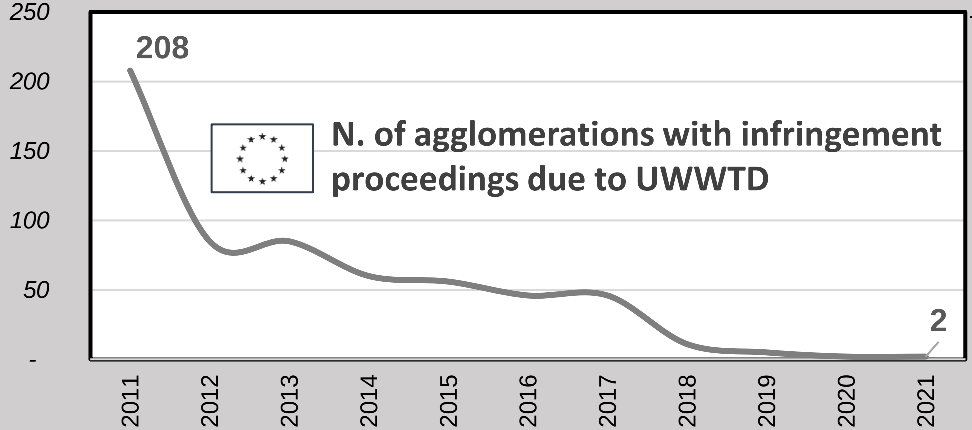
Ancient water tank, Águas do Porto;
Photo: Expresso

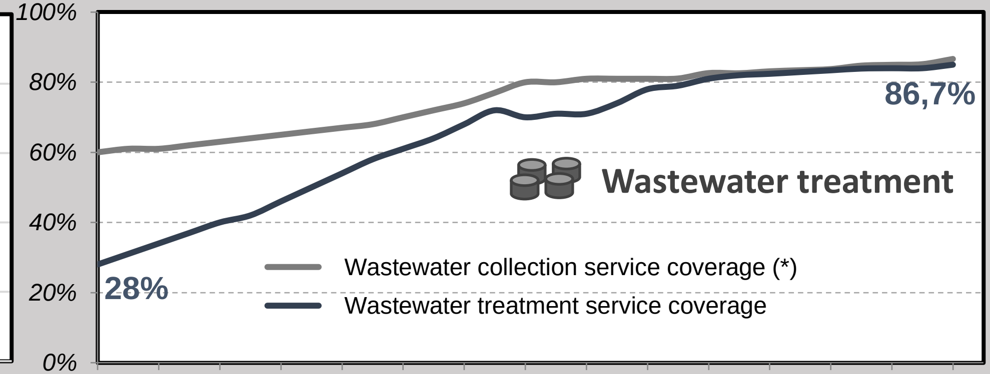
# The Portuguese WSS evolution

## As result, the Portuguese WSS revealed impressive improvement



# Lessons Learned

- Legal, institutional and organizational **reforms** are needed to introduce governance trustworthiness and creditworthiness
- A sound **Strategic Plan** allows to align stakeholders, and focus on priorities
- **Aggregation of "bulk" services**, through a national water utility, accelerate compliance with the EU directives (UWWTD and DWD)
- **Aggregation of "retail" services**, is possible if the right incentives and enforcement are in place
- A **strong Regulator**, introduces transparency, professional culture and a path to "full cost recovery" policies
- A positive evolution on moving to **full cost recovery** is possible with an effective institutional framework and strategic planning, without compromising affordability

# Contacts

DEFINING FUTURE OPTIONS

**DEFINING FUTURE OPTIONS, LDA.**
Office: Madan Parque, Rua dos Inventores
2825-182 Caparica
PORTUGAL
Website: definingfutureoptions.com
Phone: (+351) 210 438 600 | 210 438 650
Email: info@defining.eu

**DIOGO FARIA DE OLIVEIRA**
diogo.oliveira@defining.eu
+351 933 230 747

**FRANCISCO MARIZ MACHADO**
Francisco.machado@defining.eu
+351 919 521 454