Bahamas´ Water and Sewerage Corporation visit to Portugal

 

Water Supply and Sanitation Sector in Portugal

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OBJECTIVES

1 **To understand the baseline: 1992**

2 **To present the water and sanitation reforms introduced in 1993-95**

3 **To present the WSS evolution: 1995-2016**

4 **To draw lessons from the Portuguese experience**


1
BASELINE: 1992

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1

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

KEY DATES

- Portugal in the European Union: 1986
- 1st Support from EU 1986-88
  Fund € 1 182 million
- 2nd Support from EU – QCA I 1989-93
  Fund € 8 519 million
- 3rd Support from EU – QCA II 1994-99
  Fund € 17 458 million

Note: EU Fund to all eligible sectors (not only WSS)
Source: Ministério do Planeamento e da Administração do Território, 1995

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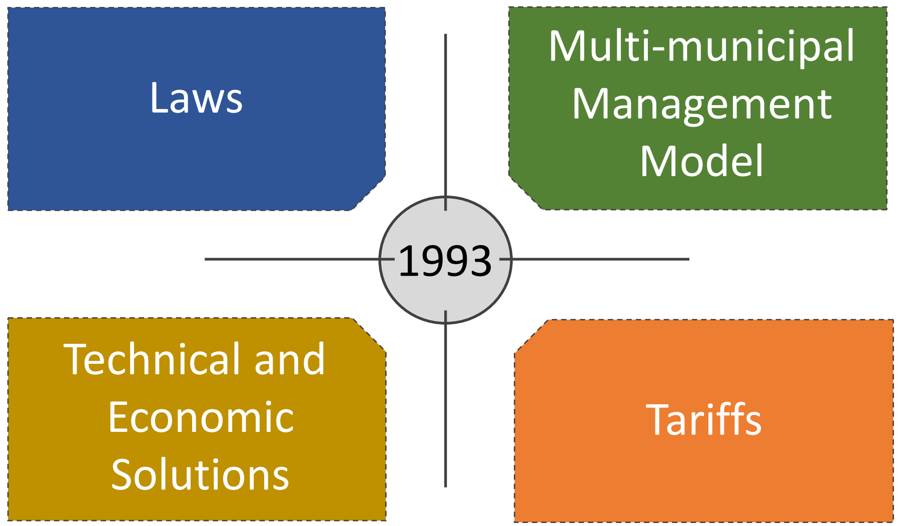
Negotiations of QCA II triggered the structural reforms introduced in Portugal

Note: EU Fund to all eligible sectors (not only WSS)
Source: Ministério do Planeamento e da Administração do Território, 1995


2
STRUCTURAL REFORMS
THE BEGINNING
1993 - 1995

STRUCTURAL REFORMS - THE BEGINNING: 1993 - 1995

2



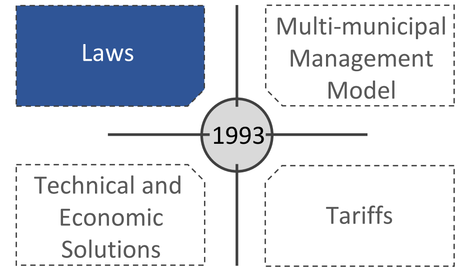
Legal reform

2

- 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.

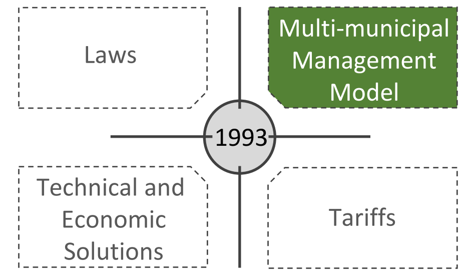
- Legal reforms encouraged a true water industry with the required investment capacity.



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

Multi-municipal systems management model

2



- **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

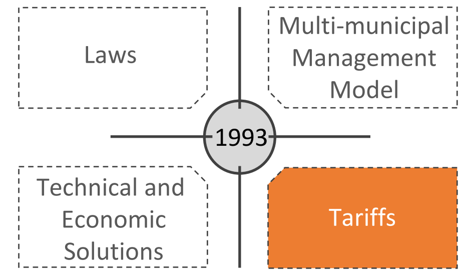
- Responsible for the design, construction, maintenance and operation of the systems.

- **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%

Fixing Tariffs

2



- 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.

TARIFFS ENSURE AFFORDABILITY

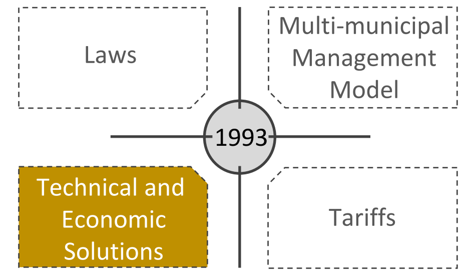
WATER TARIFF (€)	
Average Multi-municipal Tariff	0,50
Average Tariff to Consumers	1,07

SANITATION TARIFF (€)	
Average Multi-municipal Tariff	0,51
Average Tariff to Consumers	0,79

Source: ERSAR, RASARP V1, 2016

Technical and Economic Solutions

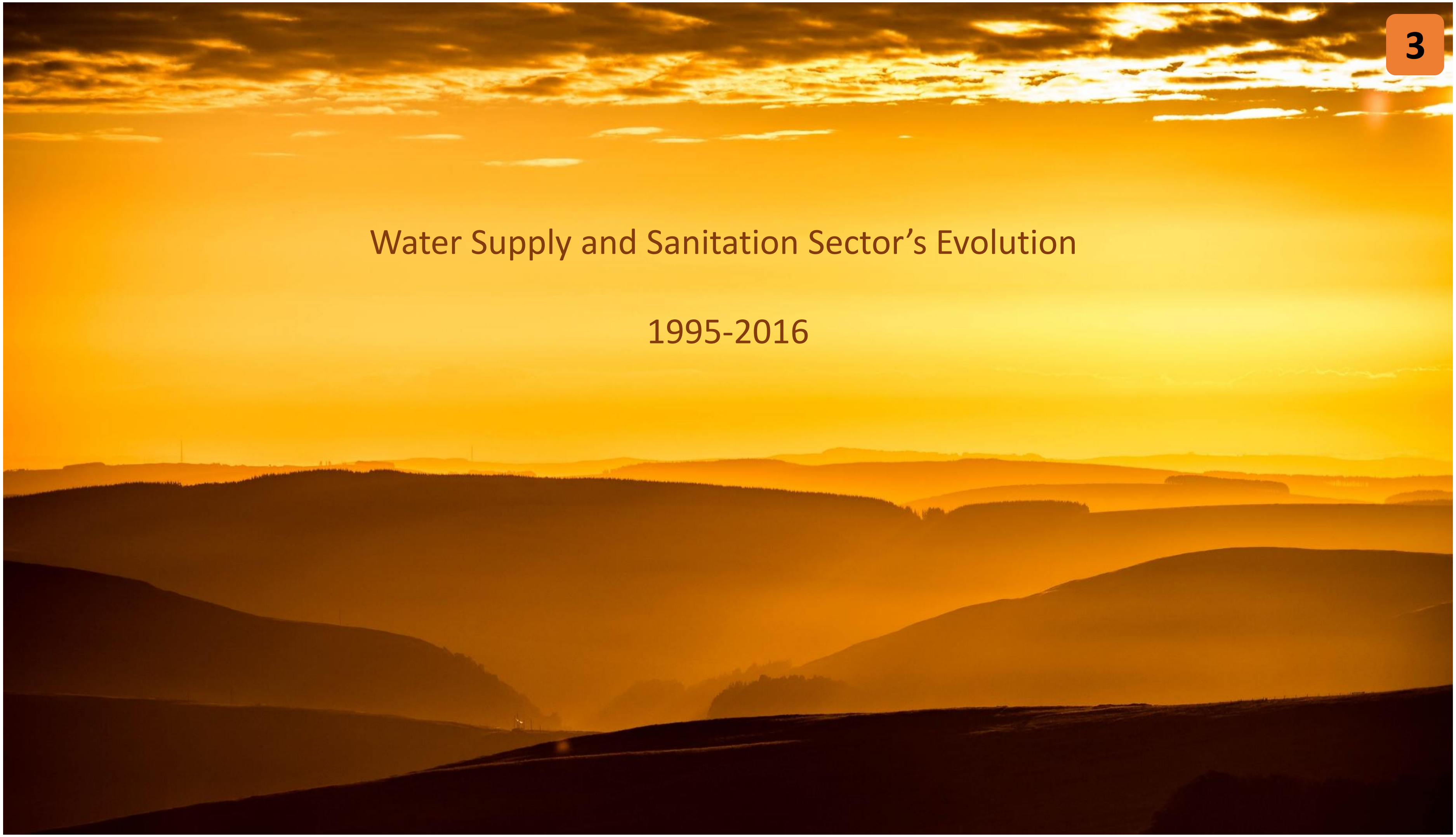
2



- **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.



Water Supply and Sanitation Sector’s Evolution

1995-2016

Water Utilities' Management Models

3

Public management	Municipal Management	The most common model in Portugal for "retail" services. WSS P&L is merged within the municipal budget . Political driven decision-making.
	Autonomous Municipal Services (SMAS)	Model used mostly by large municipalities with skilled staff and WSS operational break even. Water distribution is delegated in an autonomous municipal service. This autonomous municipal services has its own P&L. Bank debt concurs for total municipal debt.
	Municipal Company (EM)	WSS company is created by one or more municipality(ies). Business Plan must prove sustainability. Bank debt concurs for total municipal debt. Also, this model is used mostly by large municipalities with skilled staff.
	Multi-municipal concessions or Public-public partnerships	Portuguese state through AdP (state owned operator) create concessions by government act. Municipalities are minority shareholders of the new concession. The concession has a fixed capital return rate and tariffs are reviewed every year in order to achieve the contracted IRR. Used exclusively for "bulk" WSS systems.
Private management	Concessions	Asset property remain public while water distribution (retail) management is delegated to a private company through a tender process. Concessions awarded for a period of 20 to 30 years.
	Public-Private partnership [Joint Ownership]	Similar to Municipal Companies, but private sector can hold up to 49% of the Utility's shares. Shareholder's agreement may delegate operation in the private partner.

Water Utilities' Management Models

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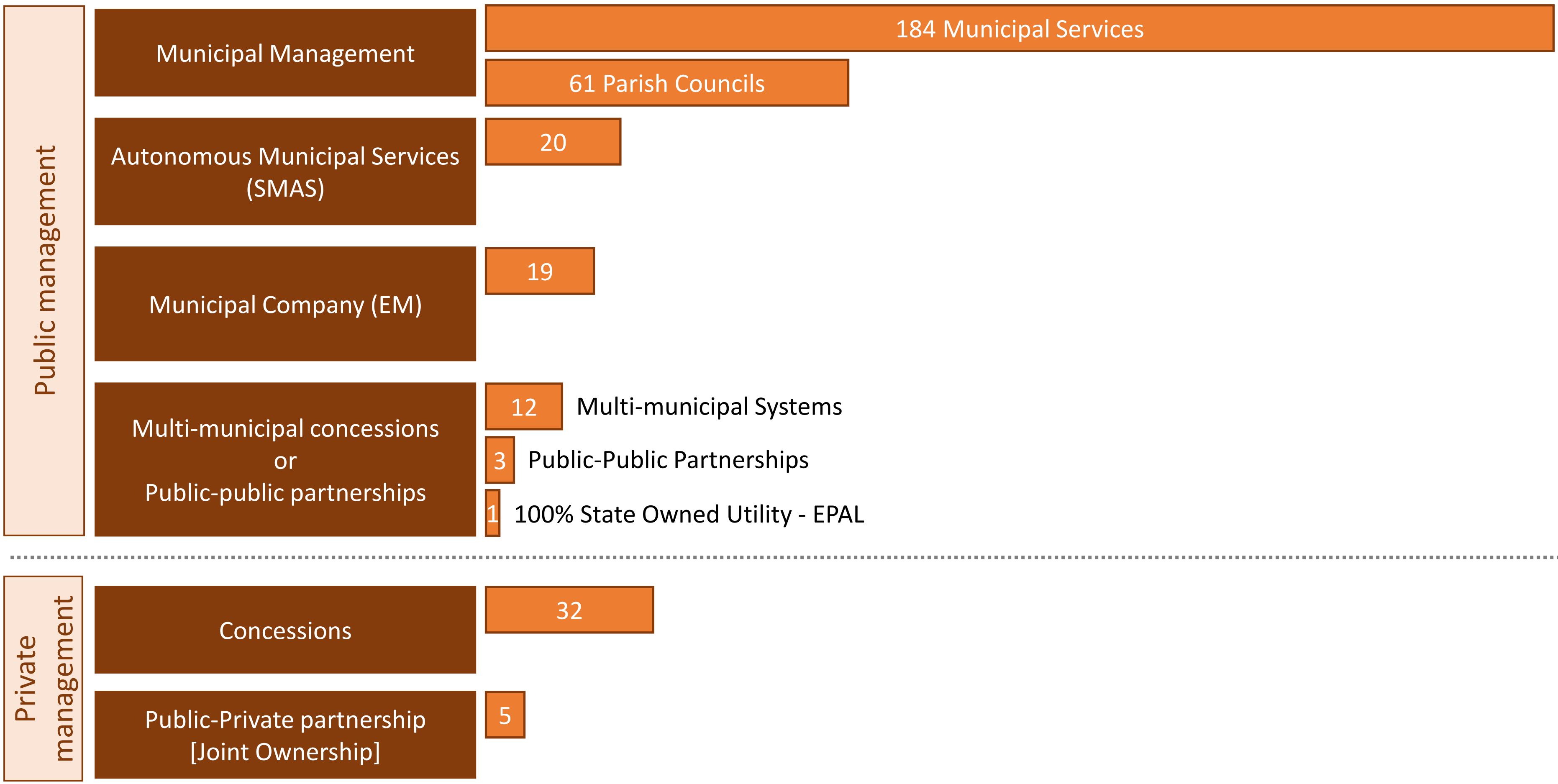
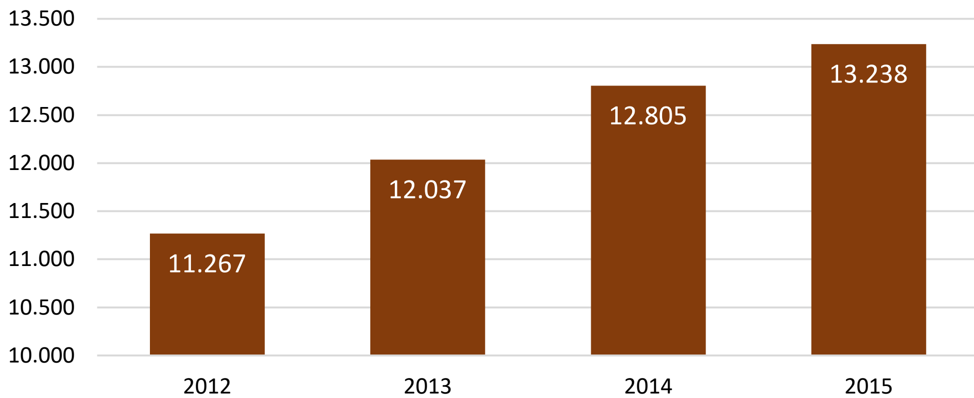


Capital Investment

3

Capital Investment [accumulated 1993-2015]



Funding Sources

European Union grants	€ 6 390 Million
European Investment Bank	€ 1 900 Million
Bonds – Private Placement	€ 600 Million
PPPs	€ 950 Million

CAPITAL INVESTMENT (Million €)	
WATER	7 124
Multi-municipal	3 760
Municipal	3 364
SANITATION	6 114
Multi-municipal	2 848
Municipal	3 266
TOTAL	13 238

Unit: Million €

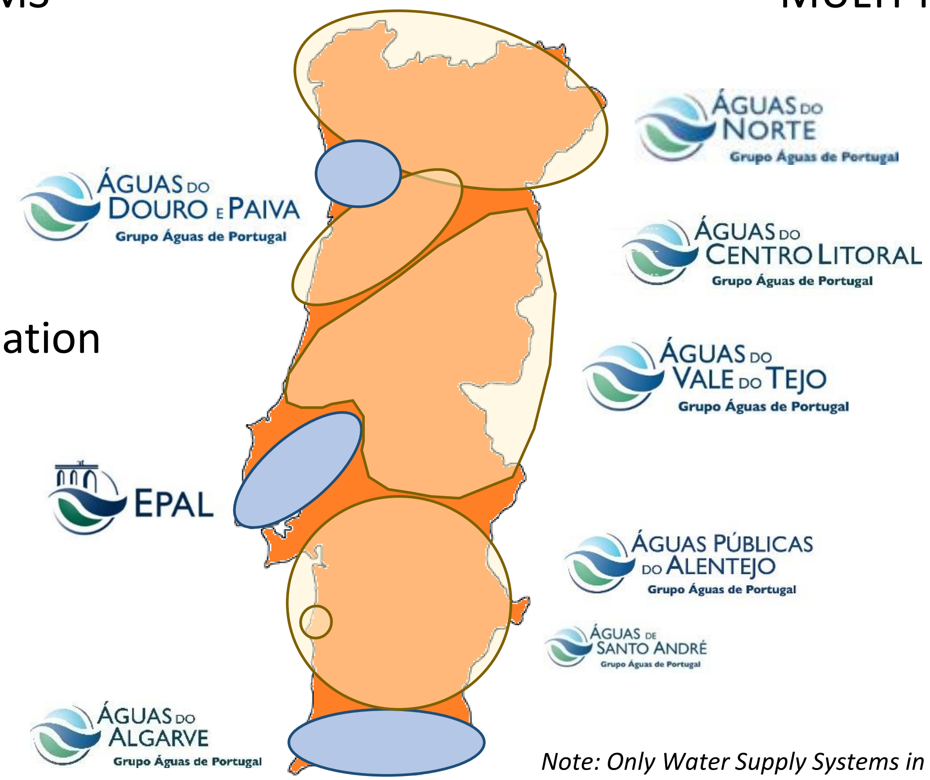
Sources: ERSAR; GAG do PENSAAR 2020, AdP

Utilities’ Map – Multi-municipal systems today

3

1ST GENERATION MULTI-MUNICIPAL SYSTEMS

- Large urban areas
- 45% Portuguese population



2nd GENERATION MULTI-MUNICIPAL SYSTEMS

- Low population density areas
- 35% Portuguese Population

Note: Only Water Supply Systems in picture

12 Multi-municipal Systems | 237 Municipalities (out of 278)

Utilities' Map – Private Concessions today

3

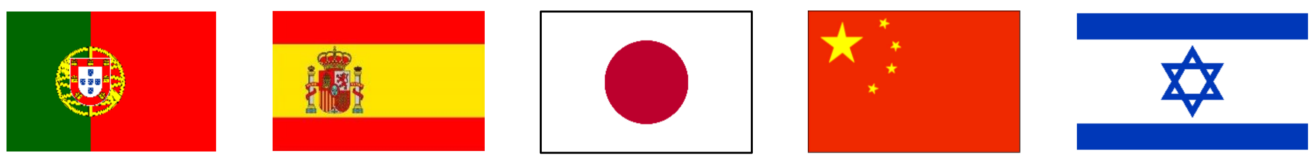
Water and Wastewater Public-Private Partnerships in Portugal

Concessions and Lease contracts	Joint Ownership	Number of Municipalities	Portuguese Pop. Served
32	5	48	29%

Operators/Investors from eight countries

In the past

And in the present



Utilities' Map – Private Concessions today

3

- Private Sector was called to contribute with financial capacity and know-how.
- Private Operators are among the most efficient Utilities in Portugal.
- Private Operators brought professionalism, technology and management skills to the Portuguese WSS.

Water losses - most efficient Utilities

	%
Indaqua Santo Tirso/Trofa	8,6
Águas de Cascais	10,3
EPAL	10,5
SMSB de Viana do Castelo	12,4
Luságua Alcanena	13,5
AGERE	13,7
Águas de Paços de Ferreira	15,0
Águas de Valongo	15,4
Indaqua Fafe	15,4
Indaqua Vila do Conde	16,0
Águas de Barcelos	16,6
SM de Castelo Branco	16,7
Águas de Gondomar	16,8
Águas de Mafra	16,9
Águas da Teja	17,6
CM de Mangualde	18,0
CM de Monção	18,0
FAGAR - Faro	18,1
Taviraverde	18,2
Águas do Porto	18,6
SMAS de Vila Franca de Xira	18,6
CM de Póvoa de Varzim	18,7
Indaqua Matosinhos	19,2
SMAS de Viseu	19,2
Indaqua Feira	19,7
SM de Alcobaça	20,4
Águas de Paredes	20,7
Águas da Figueira	20,9

Public Utilities

PPPs

Asset Knowledge – Higher Knowledge Utilities

	Asset Knowledge Index
SM de Castelo Branco	197
Águas de Paredes	195
EMAS de Beja	195
EPAL	195
Águas de Gondomar	194
Águas de Valongo	194
CM de Barreiro	194
Indaqua Vila do Conde	191
SIMAS Oeiras e Amadora	191
Águas da Figueira	190
Águas da Região de Aveiro	189
CM de Odemira	189
Indaqua Feira	189
SMSB de Viana do Castelo	186
CM de Redondo	185
CM de Serpa	183
SM de Abrantes	181
CM de Bombarral	180
Águas de Cascais	179
Indaqua Matosinhos	178
Águas de Gaia	177
Águas do Sado	177
Águas de Santo André	176
CM de Marinha Grande	175
Águas de Coimbra	173
CM de Bragança	173
Indaqua Santo Tirso/Trofa	173
SMAS de Almada	172
Águas de Paços de Ferreira	171
Indaqua Fafe	169

Regulation: National Authority evolution: 1995 to present

3

2014 ERSAR – Regulation Authority
All utilities' regulation and quality of water *(under Parliament)*

ERSAR

2009 ERSAR - Regulating Institution
All utilities' regulation and quality of water *(under M. for Environment)*

ERSAR

INSTITUTO REGULADOR DE ÁGUAS E RESÍDUOS

2004 IRAR - Regulating Institution
for public and private concessions and for quality of water to all Utilities *(under Ministry for Environment)*

INSTITUTO REGULADOR DE ÁGUAS E RESÍDUOS

1998 IRAR - Regulating Institution
for public and private concessions *(under Ministry for Environment)*

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

Key Indicators' Evolution

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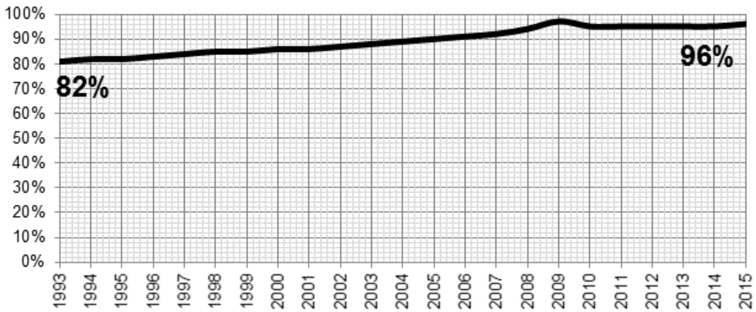
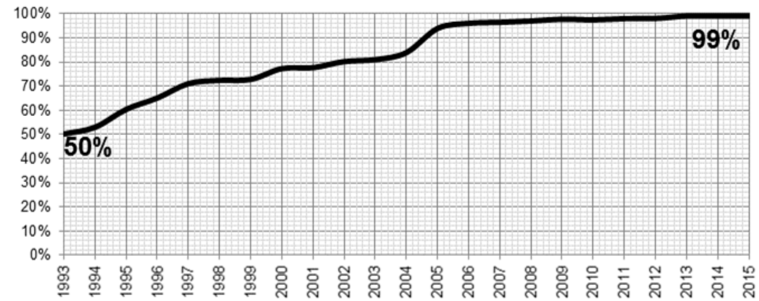
Water network coverage

2016
96,5%



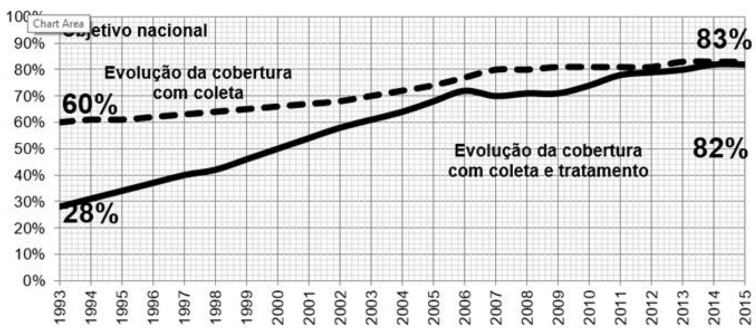
Drinking water quality

2016
99,1%



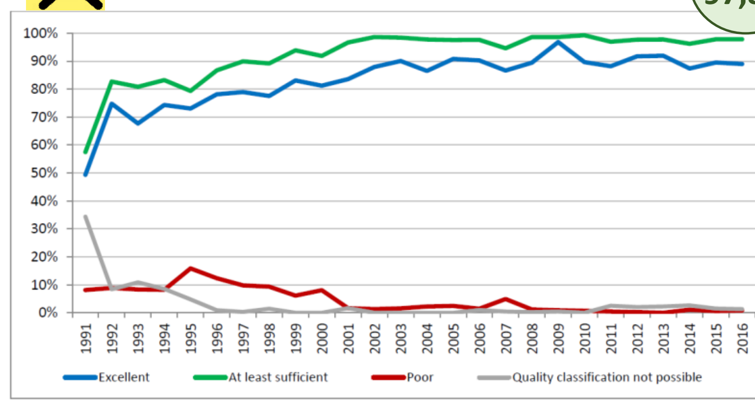
Wastewater treatment

2016
83,7%



Coastal bathing waters quality

2016
97,8%



Source: ERSAR


4
LESSONS LEARNED

LESSONS LEARNED 4

Portugal faced impressive improvement in the last 25 years

This was possible through:

1. The existence of a 100 year old experienced company in Lisbon, EPAL, leveraging state owned company AdP – Águas de Portugal

2. The injection of significant grants from the European Union

3. The opening of the water and sanitation sector to private operators, leveraging competition and professionalism

4. The establishment of a strong, empowered Regulator - ERSAR

Portuguese water and sanitation sector is developed and mature, still…

LESSONS LEARNED 4

… There is much to be done

- Although many Utilities are sustainable and practicing “full cost recovery” policy…
- …some Utilities have operational costs above their tariff revenues.
- There is much space for efficiency improvement, hence reducing operational costs.
- Capital investment in infrastructure renewal must be performed in a higher rhythm than the present one.
- The split between “bulk” and “retail” Utilities causes technical and economic difficulties that are yet to be solved.

And finally…

LESSONS LEARNED

4

On the positive side

- Today WSS sector is a mature one
- Skilled workers
- Affordability assured for all
- Independent and empowered Regulator
- Sustainability already achieved in some utilities
- Resilience in multi-municipal assets
- Proven capacity in extreme draught period

Highly profession-al utilities

Protected consumers

Continuity and quality of service

Mistakes to be avoided

- Over-estimation of population
- Over-estimation of consumption
- Too ambitious capital investment
- Over sized assets
- Lack of planning and/or control
- Lack of supervision

Artificial low tariffs

Unnecess-ary costs

Budget and time overruns

Project Risk – Control and Mitigation

3

Very simplified

Project risks

- Population growth
- Demand
- Design, technology and construction
- Operation & Maintenance
- Commercial (billing and collection)

Financial risks

- Availability and cost of funds
- Change of interest rate
- Change of inflation rate
- Change of foreign exchange rate
- Residual value
- Unforeseen investment

Exogenous risks

- Legislative
- Social (protest)
- Regulatory
- Environmental
- Sovereign or political

Risk mitigation

Project risks:

- Use of conservative forecasts
- Periodic contract reviews
- Back-to-back contracts
- Turnkey contracts

Financial risks:

- Blend finance
- “Standby loan” and “Standby equity”
- Incorporate local currency risk
- Currency swaps
- Interest rate swaps
- Fixed rate loans

Exogenous risks:

- Perform proper due-diligence
- Promote public and civil society involvement
- Public party to take some of these risks

All risks:

- Insurances | Dispute resolution mechanisms| Step-in mechanisms

LESSONS LEARNED

4

Creating the conditions to attract funding

Creditworthiness

Efficiency

Creating the conditions to sustainability

Law and Governance

- Establish a transparent, clear and stable legal framework
- Promote adequate management of water resources
- Incentive public utilities with enough scale to become efficient and practice affordable tariffs

Sector's Planning

- Set up objectives
- Compile reliable data and info
- Develop sound capital investment plans
- Approve national strategic plans
- Implement monitor & evaluation tools

Tariffs

- Promote cost recovery
- Discourage waste and protect environment
- Assure affordability for ALL
- Promote utilities' sustainability and financial stability

Efficiency

- Attract skilled managers and professionals
- Establish performance indicators
- Establish efficiency goals
- Invest in asset management
- Approve realistic budgets

DEFINING
FUTURE
OPTIONS

“If there is magic on this planet, it is contained in water”

“Se há magia neste planeta, ela encontra-se na água”

Loren Eiseley