A photograph showing a person's legs and feet hanging from a dark ledge or overhang. The person is barefoot, and their feet are positioned just above a shallow stream of water that flows over rocks. The background is a lush, green, hilly landscape with trees and grass, slightly out of focus. The overall mood is serene and natural.

INDAQUA

Water losses - The experience of best performing Portuguese utilities

Results and track record of the Portuguese leading player - Indaqua

27th of April 2023

01 INDAQUA Group at a glance

02 Products & Solutions

03 Concession Contracts – NRW management
Proven Success

◀ 01

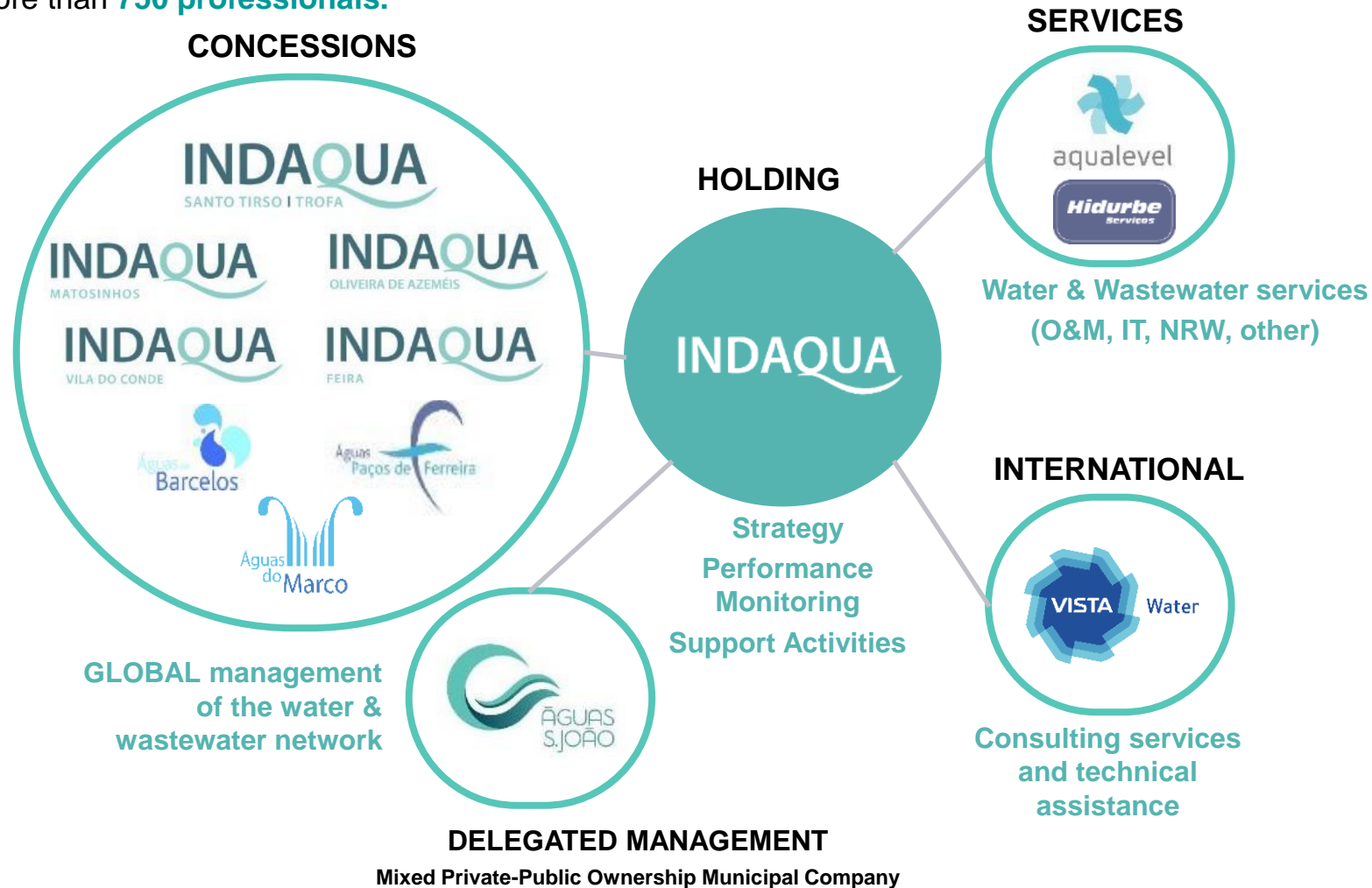
INDAQUA

| Group at a glance



INDAQUA Group at a glance

Incorporated in 1994, INDAQUA is an **efficiency driven solution provider**, and the **leading private player operating in the Portuguese water industry**, serving more than **800,000 people** in the Portuguese water market, with an annual turnover of more than **110 million €** and a team of more than **750 professionals**.



LARGE PRIVATE OPERATOR
in the Portuguese universe of municipal water
and wastewater concession contracts

Team with more than **750**
EMPLOYEES, generating an annual
turnover of **€ 110 million**

INDAQUA Group at a glance



WATER UTILITIES

	AREA (KM ²)	POPULATION
Santo Tirso/Trofa	209	106 732
Santa Maria da Feira	213	135 006
Matosinhos	62	169 782
Vila do Conde	149	81 881
São João da Madeira*	8	22 162
Oliveira de Azeméis	161	66 673
Barcelos	379	116 391
Paços de Ferreira	71	55 481
Março de Canaveses	202	49 149

*not a concession (49% PPP)

PERFORMANCE-BASED CONTRACTS

Região Aveiro (9 municipalities)	1 279	262 794
Maia	83	135 678
Gaia	169	302 324
Chaves	160	32 807

TECHNICAL ASSISTANCE

Namibe (Angola)	9	397 204
Lunda Norte (Angola)	25	471 552

803.000

POPULATION
SERVED

8% OF
PT POPULATION

REDUCING NRW in
11.100 km
OF WATER
NETWORKS

11%
OF PORTUGAL

INDAQUA Group Facts & Figures

LARGEST PRIVATE OPERATOR in the universe of municipal water concessions

Team with **+750 employees**

Group of **13 COMPANIES IN PORTUGAL AND ANGOLA** with an annual turnover of **€110 million**

More than **800 000 PEOPLE SERVED** in Portugal

335 309 CLIENTS of water and wastewater treatment services (commercial relationship)

8 100 km OF EFFICIENTLY MANAGED NETWORK (4.300 km of water network; 3.700 km of wastewater network)

31 million m³ / year of drinking water **22 million m³ / year** of wastewater treated in **45 WWTP**
468 Pumping stations
113 reservoirs

World-class operating performance levels: **11% NRW** (group concessions)

Average NRW Reduction Rate: **63%**

Accumulated savings of NRW (m³): **34.545.207**

Accumulated NRW savings (€): **16,4 million**

19 BLUE FLAGS in the municipalities of through the decontamination of water lines and beaches

65 QUALITY AND EFFICIENCY SEALS and **6 EXCELLENCE AWARDS**

most awarded national company by sector regulator (ERSAR)

INDAQUA Group

Proven Success

INDAQUA is the Portuguese water utility with most awards and recognitions from the regulator (ERSAR). However, has received distinctions from other several national entities.

Concessions

WATER QUALITY
ERSAR

65
QUALITY
STAMPS

6
EXCELLENCE
PRIZES

EFFICIENT MANAGEMENT
ERSAR

**QUALITY of SERVICE
EXCELLENCE**
ERSAR

**LEADER IN
CUSTOMER
SERVICE
2022**

PORTUGUESE
INSTITUTE OF
CUSTOMER
RELATIONS

Services

Prémio Nacional de
Sustentabilidade
20 30
negócios

**SUSTAINABLE FINANCE
AWARD 2021**
WITH WATER EFFICIENCY PROJECTS

**PT GLOBAL WATER
AWARD 2022**
FOR SERVICES PROVIDED IN ANGOLA

02

Products & Solutions

| INDAQUA Portfolio

Products & Solutions Portfolio

When choosing us, we want our Customers, not to opt for a water and wastewater service provider, but rather for a **reliable and long-term partner for their business**, who will jointly contribute to the **achievement of their GOALS**.

Water and Wastewater Concessions



Global and long-term integrated solutions of management, operation and maintenance of Water and Wastewater Municipal or Industrial Systems.

Performance-based Contracts



Efficiency oriented contracts for NRW or Inflow and Infiltrations reduction, where compensation is indexed to the certified achieved performance with assured pre-contractual economic benefits.

i2Water Solutions



Technology-based solutions to enhance economic, financial, environmental and quality of service performance of water and wastewater utilities.

Technical Assistance



Technical assistance contracts are designed to transfer accumulated experience and know-how to water and wastewater utilities that are implementing or reengineering business processes.

O&M



Global or specialized operation and maintenance service contracts to enhance economic, financial, environmental and quality of service performance of water and wastewater utilities infrastructure.

Regional

National

Global

VALUE PROPOSAL

01/ WE HAVE IN-DEPTH KNOWLEDGE OF THE MARKET

02/ WE HAVE A MULTIDISCIPLINARY TEAM

03/ WE ASSUME A STRONG ENGAGEMENT IN ACHIEVING RESULTS

04/ WE PERFORM A PROFESSIONAL PROJECT MANAGEMENT

O&M



Products & Solutions

O&M

Global or specialized operation and maintenance service contracts to enhance economic, financial, environmental and quality of service performance of water and wastewater utilities infrastructure.



#1

O&M of Water Works and Pumping Stations, Wastewater Treatment Plants and Pumping Stations



#2

Condition assessment (video and visual) of wastewater networks



#3

Detection of inflows and infiltrations in networks (visual and smoke test)



#4

Leak/Infiltration detection in water and wastewater networks



#5

Cleaning and disinfection of water networks and reservoirs



#6

Hydraulic cleaning, and maintenance of sewers, collection chambers and septic tanks

45+

Reservoirs

45+

Wastewater Treatment Stations

5+

Water Works

113+

water tank

468+

Pumping Stations

Products & Solutions

O&M

O&M WWTP MACAO



Client: RAE Macao
550.000 h.eq. | 144.000 m³/day |

Primary treatment lamella tank, secondary activated sludge | Sludge thickening, dewatering and incineration | Odour control | water reuse

O&M WWTP MATOSINHOS



Client: Matosinhos Municipality
229.876 h.eq. | 82.298 m³/day

Activated sludge | Tertiary treatment | Sludge digestion and dehydration | Use of biogas for cogeneration | Odour control | water reuse

O&M WWTP FIÃES



Client: Municipality S.M.Feira
46.000 h.eq. | 5.400 m³/day |

Secondary treatment activated sludge (SBR) | Sludge thickening, dewatering | odour control

LEAK DETECTION RIBATEJO



Client: Águas do Ribatejo
2.200 km of water network
70.000 service connections

Remuneration depending on number of non-visible leaks detected

SEWER MAINTENANCE AVEIRO



Client: AdRA
10 municipalities | 2650 Kms of wastewater networks

Sewer cleaning and maintenance | Condition Assessment by Video Inspection | Maintenance of wells and lifts (emptying)

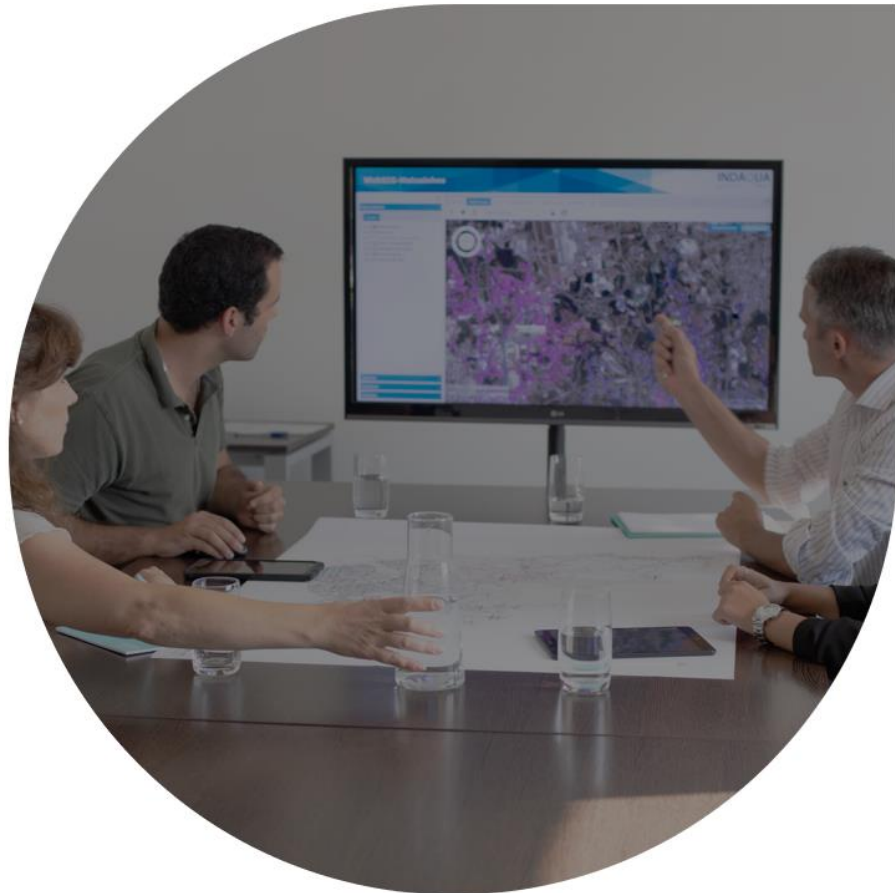
Technical Assistance



Products & Solutions

Technical Assistance

Technical assistance contracts are designed to transfer accumulated experience and know-how to water and wastewater utilities that are implementing or reengineering business processes.



ENERGY EFFICIENCY

COMMERCIAL EFFECTIVENESS

KNOW-HOW TRANSFER

OTHER TECHNICAL AND OPERATIONAL ASSISTANCE

Non-Revenue-Water Reduction Plans

Rainwater Inflow and infiltration Reduction Plans

O&M Optimization and Asset Management

Emergency Response Planning

Information and Operational Technology Strategy

Customer Management

Some entities and institutional clients



African Development Bank



world Bank



Ministry of Energy and Water
(Angola National Government)



Government of Macao

Products & Solutions

Technical Assistance

Technical Assistance O&M SAA Cidade do Sumbe



Client: MINEA Angola
Period: 1 year

Ensure continuity of supply 24x7 | Define and implement operation and maintenance procedures | Develop commercial management system to support reading and billing | Train local team

Management, O&M of Bié PWSU



Client: MINEA Angola / WB
Period: 3 years

The Contracts main goals were the establishment and improvement of institutional, management, operation, and maintenance practices, and ultimately enhance the quality of service, increase access to water and sanitation services within its service area, and improve the utility financial sustainability.

Management, O&M of Namibe PWSU



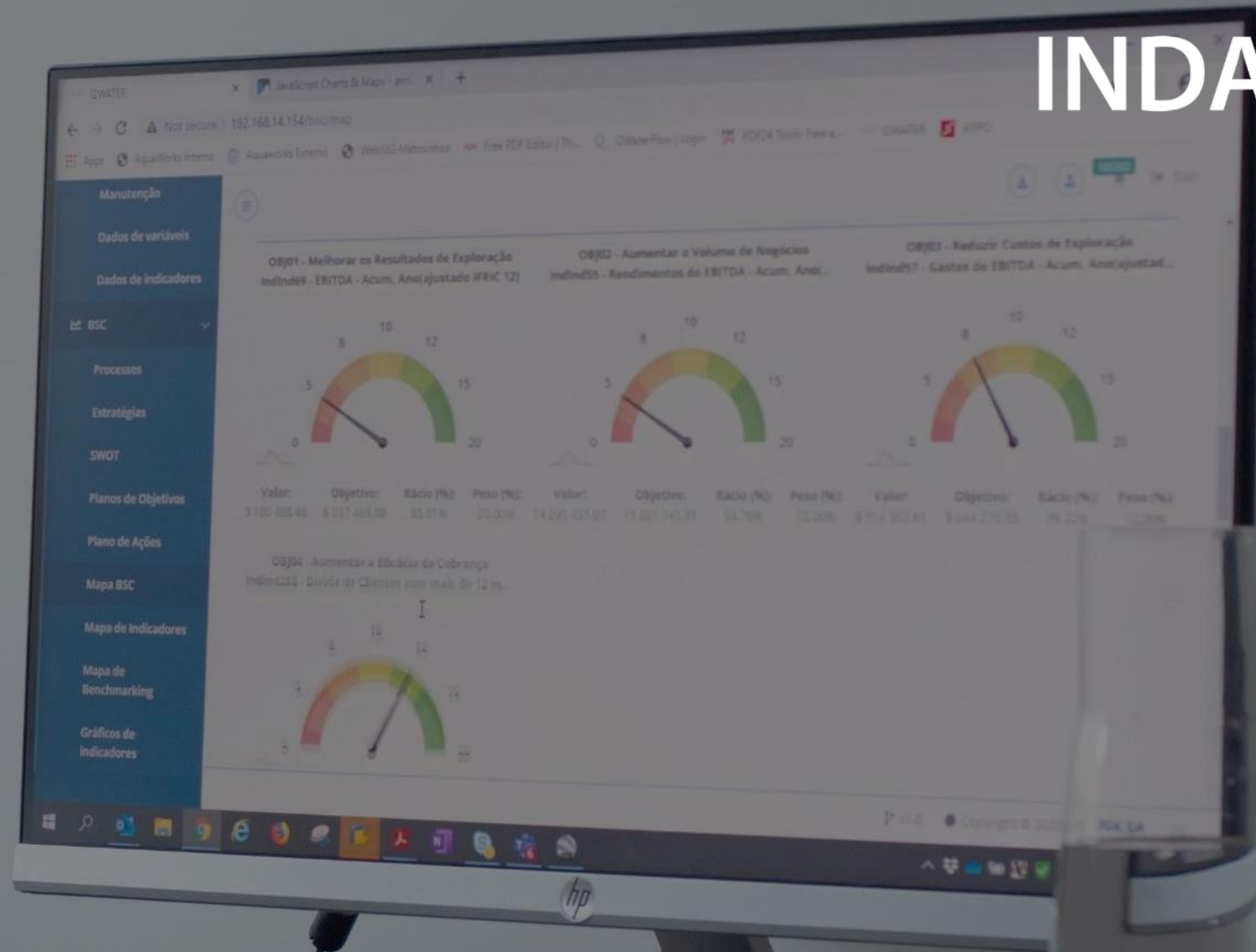
Client: MINEA Angola / BAfD
Period: 3 years

Management, O&M of Lunda-Sul PWSU



Client: MINEA Angola / BAfD
Period: 3 years

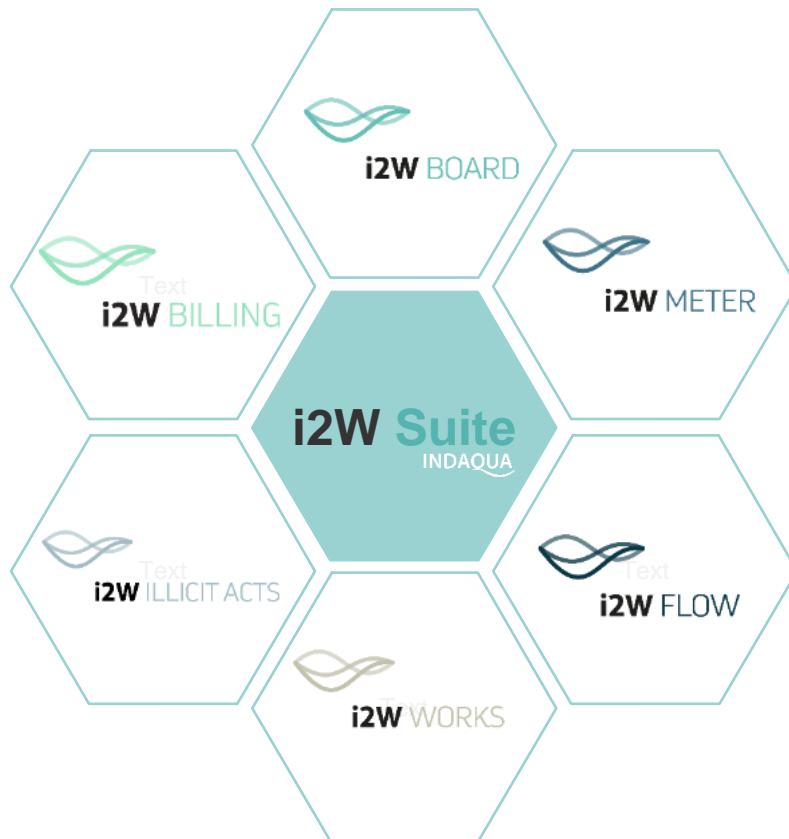
i2Water Solutions



Products & Solutions

i2Water Solutions

The **i2Water Suite** of proprietary software products of **INDAQUA**, are technology-based solutions specifically developed to support water and wastewater utilities business processes, accelerate decision making through the transformation of data into management information and maximize operational efficiency.



i2W BOARD

Solution of strategy definition and performance monitoring of its implementation

i2W METER

Solution of meter parks optimization and commercial losses reduction

i2W FLOW

Solution of advanced network management for active control of real losses and inflow and infiltration

i2W WORKS

Solution of workorders management with mobility for operational teams' optimization

i2W ILLICIT ACTS

Solution of detection and management of illicit consumption to protect public systems and maximize operational gains

i2W BILLING

Solution of customer relationship management for billing, collection and customer service

INDAQUA

Performance-based
Contracts



Products & Solutions

Performance-based Contracts

Non-Revenue-Water (**NRW**) Reduction Performance-based Contracts (**PBC**) may be defined as:

- Efficiency oriented contracts, where compensation is indexed to the certified achieved performance with assured pre-contractual economic benefits for the client.
- Contracts are designed to generate savings that can cover investment (CAPEX) and operational costs (OPEX) of the project and release future additional cashflow through the reduction of OPEX and CAPEX needs.

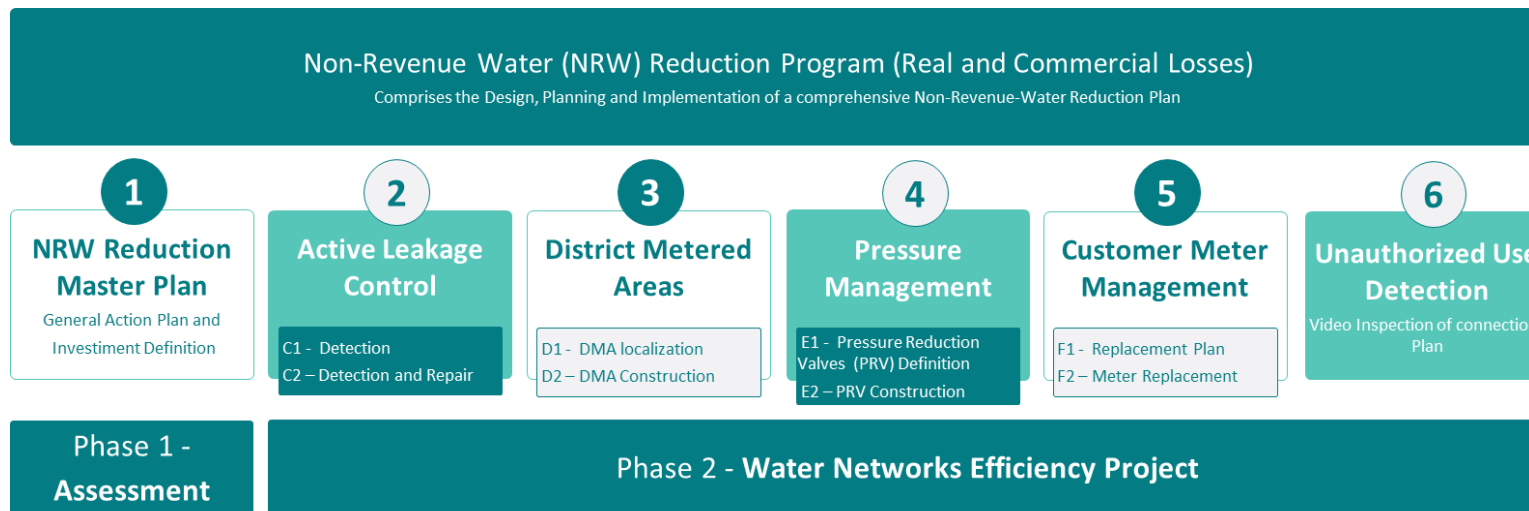


Products & Solutions

Performance-based Contracts

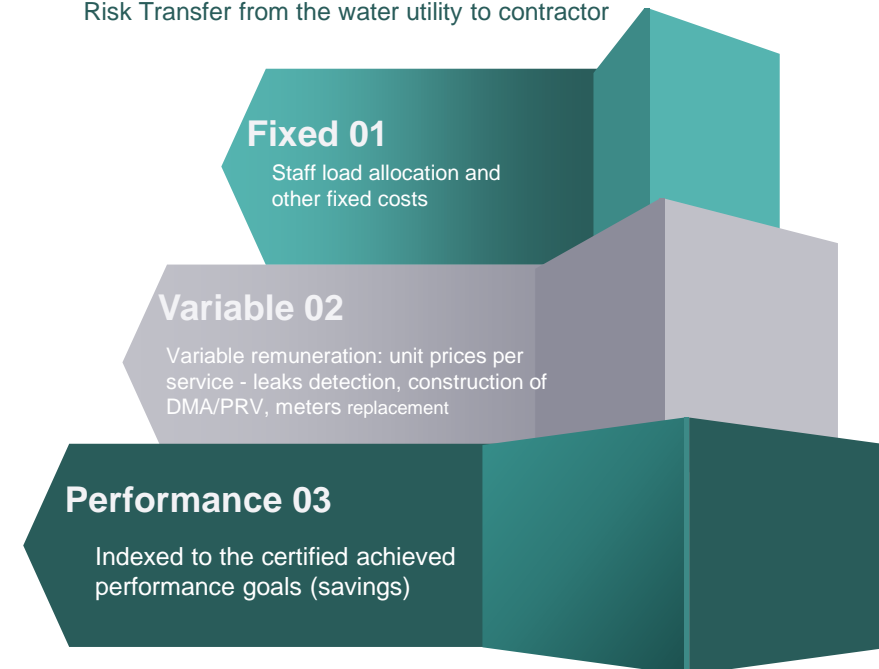
NRW reduction performance-based-contracts are designed to achieve an optimal risk/benefit contractual structure that maximizes private operators' incentive to achieve performance targets and generate economic value to be shared with water utilities.

A Holistic Methodology to reduce NRW



Compensation Model

Risk Transfer from the water utility to contractor



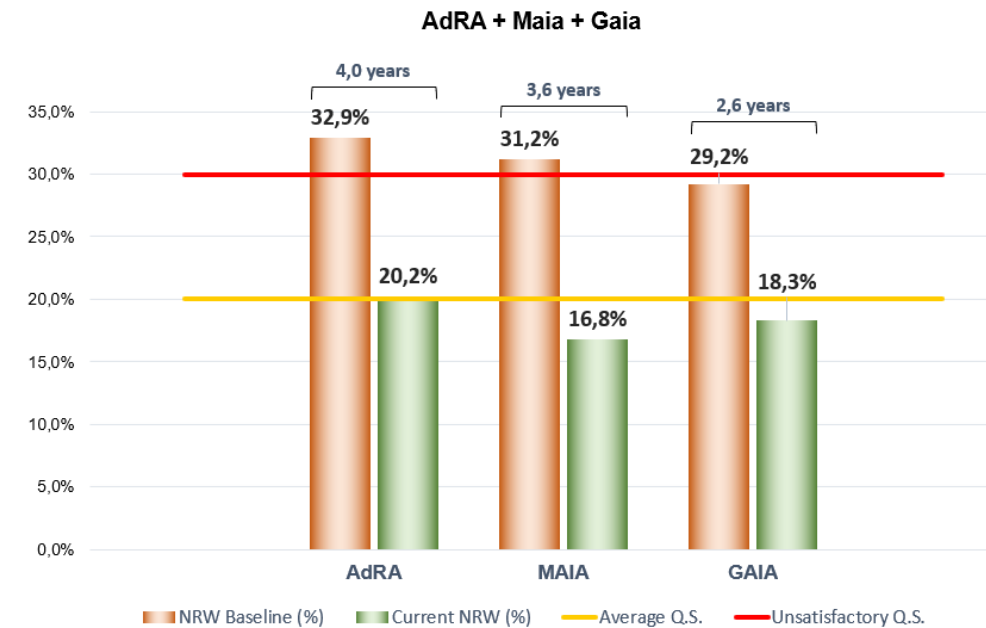
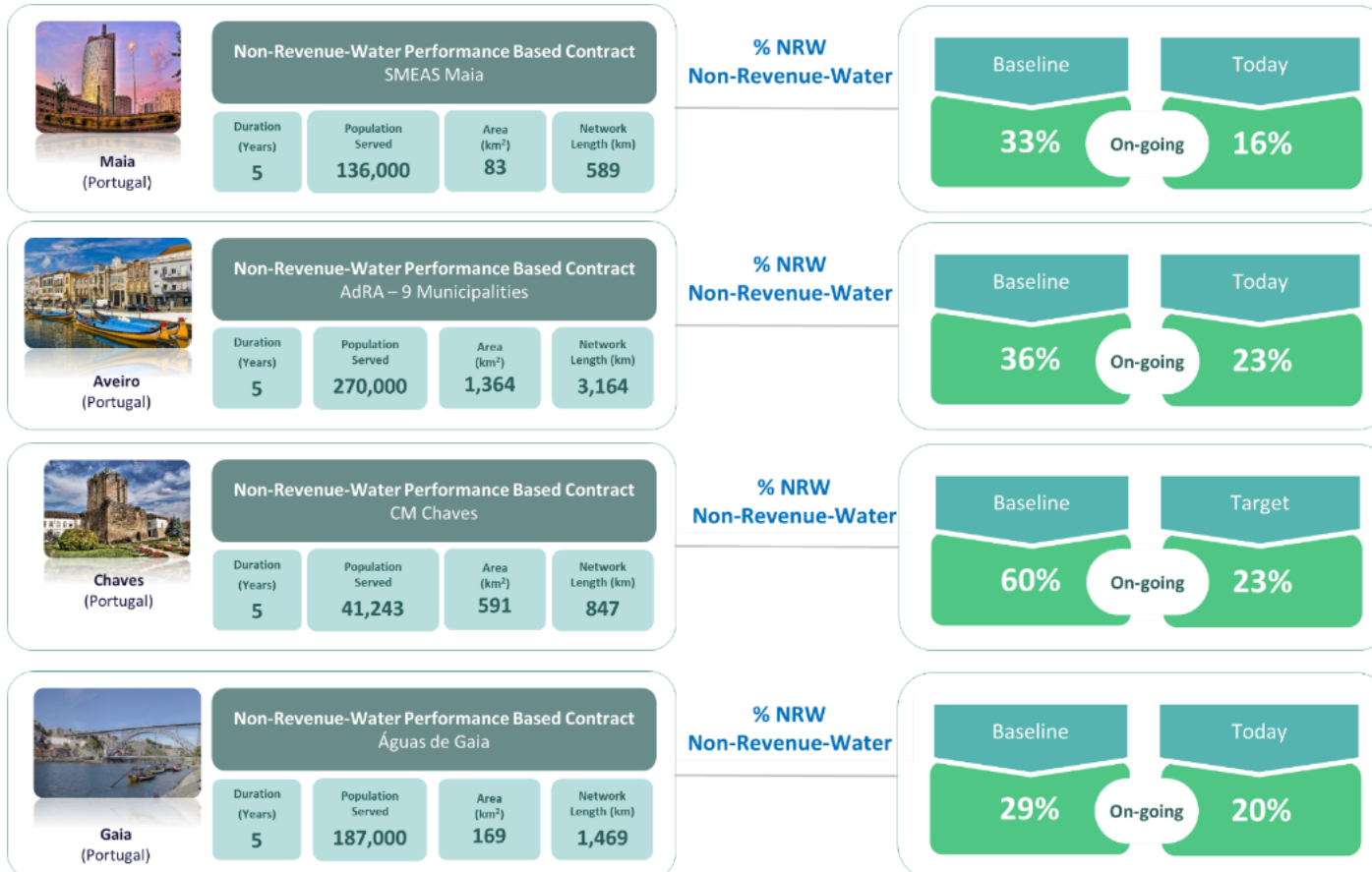
MINIMUM EFFICIENCY GUARANTEE
MINIMUM SAVINGS GUARANTEE



Products & Solutions

Performance-based Contracts

Since 2019, INDAQUA is present in 4 water utilities that cover 12 municipalities through NRW reduction PBCs, achieving results of **50% reduction rate in the first 3/4 years** of Contract. These 5 year contracts, at its conclusion, will save more **10 million m³** with an economic value of **€ 12,5 million**.



INDAQUA

**Water & Wastewater
Concessions**



Products & Solutions

Water & Wastewater Concessions

Achieved Results

Indaqua Santo Tirso/Trofa	Indaqua Feira	Indaqua Matosinhos	Indaqua Vila do Conde	Águas de São João	Indaqua Oliveira de Azemeis	Águas de Barcelos	Águas de Paços de Ferreira	Águas do Marco
Concession 35 + 15 years	Concession 50 years	Concession 25 years	Concession 40 + 10 years	Equity in Municipal Company	Concession 30 years	Concession 30 + 20 years	Concession 35 years	Concession 35 years
CLIENT MUNICÍPIO SANTO TIRSO E TROFA	CLIENT MUNICÍPIO DE S.M.FEIRA	CLIENT MUNICÍPIO DE MATOSINHOS	CLIENT MUNICÍPIO DE VILA DO CONDE	CLIENT MUNICÍPIO DE SÃO JOÃO DA MADEIRA	CLIENT MUNICÍPIO DE OL. DE AZEMEIS	CLIENT MUNICÍPIO DE BARCELOS	CLIENT MUNICÍPIO DE PAÇOS DE FERREIRA	CLIENT MUNICÍPIO DE MARCO DE CANAVESES
INVESTIMENT 31,7 M€	INVESTIMENT 95,7 M€	INVESTIMENT 61,5 M€	INVESTIMENT 51,3M€	INVESTIMENT -	INVESTIMENT 17,3 M€	INVESTIMENT 74M€	INVESTIMENT 60M€	INVESTIMENT -
NETWORK GROWTH +511km water network	NETWORK GROWTH +1746 km W and WW network	NETWORK GROWTH +280 km W, WW and stormwater network	NETWORK GROWTH +428 km W and WW network	NETWORK GROWTH -	NETWORK GROWTH +125 km W and WW network	NETWORK GROWTH +940 km W and WW network	NETWORK GROWTH +525 km W and WW network	NETWORK INVESTMENT -
POPULATION SERVED +200% water	POPULATION SERVED +300% water +1800% wastewater	POPULATION SERVED +13% water +13% wastewater	POPULATION SERVED +31% water +40% wastewater	POPULATION SERVED -	POPULATION SERVED +16% water +82% wastewater	POPULATION SERVED +81% water +89% wastewater	POPULATION SERVED -	POPULATION SERVED -
OPERATIONAL EFFICIENCY - 70% NRW	OPERATIONAL EFFICIENCY - 65% NRW	OPERATIONAL EFFICIENCY - 82% NRW	OPERATIONAL EFFICIENCY - 75% NRW	OPERATIONAL EFFICIENCY - 69% NRW	OPERATIONAL EFFICIENCY - 63% NRW	OPERATIONAL EFFICIENCY -78% NRW	OPERATIONAL EFFICIENCY - 71% NRW	OPERATIONAL EFFICIENCY - 48% NRW

Products & Solutions

Water & Wastewater Concessions

Achieved Results

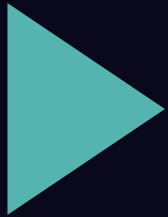
Before	What	Today
<p>Access to water & wastewater services – Coverage rates as low as 34%</p>	<p>CAPEX</p>	<p>More than 2.500 km of new water networks and 2.000 km of new wastewater networks</p>
<p>43%</p>	<p>Served Customers</p>	<p>More than 120.000 new served households with water and 100.000 with wastewater services</p>
<p>Low water quality limited the use of public beaches</p>	<p>Water Losses (NRW)</p>	<p>12%</p>
<p>Level of EU directives compliance as low as 80%</p>	<p>Sea and rivers water quality</p>	<p>40 awards of blue and gold flags in sea and river beaches</p>
<p>0% energy production</p>	<p>Water quality</p>	<p>99,8%</p>
	<p>Energy Efficiency</p>	<p>50% of electricity produced in the water and wastewater systems</p>



03

Concession Contracts

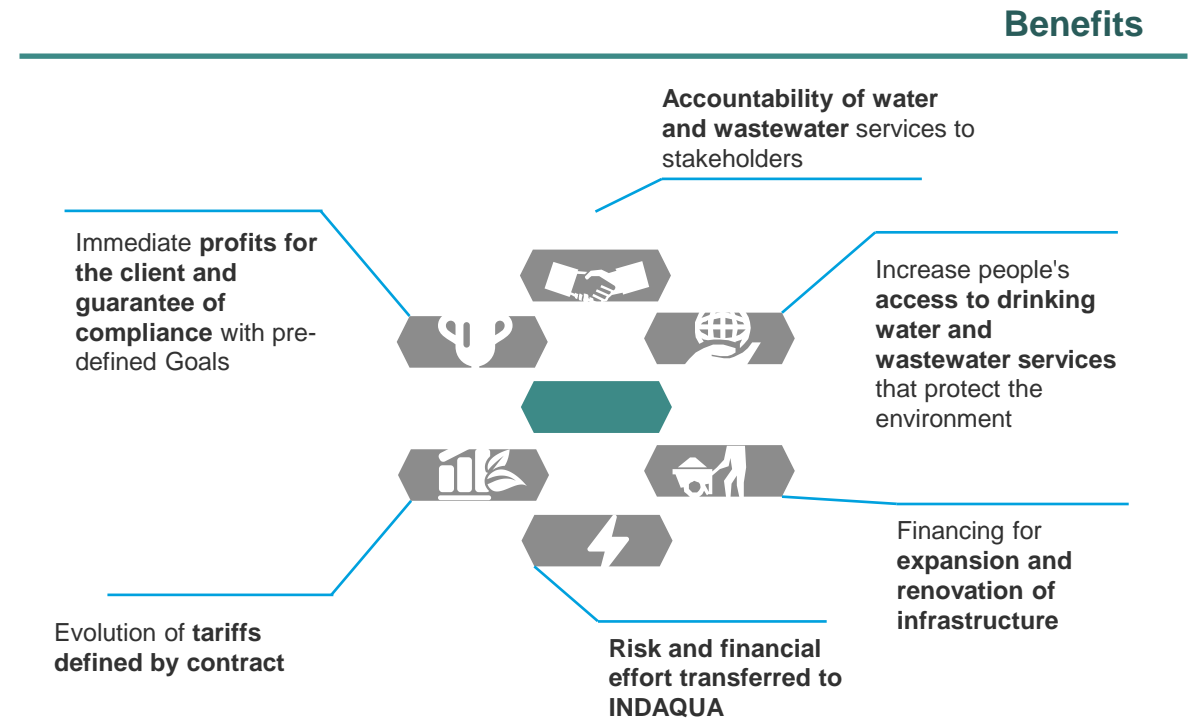
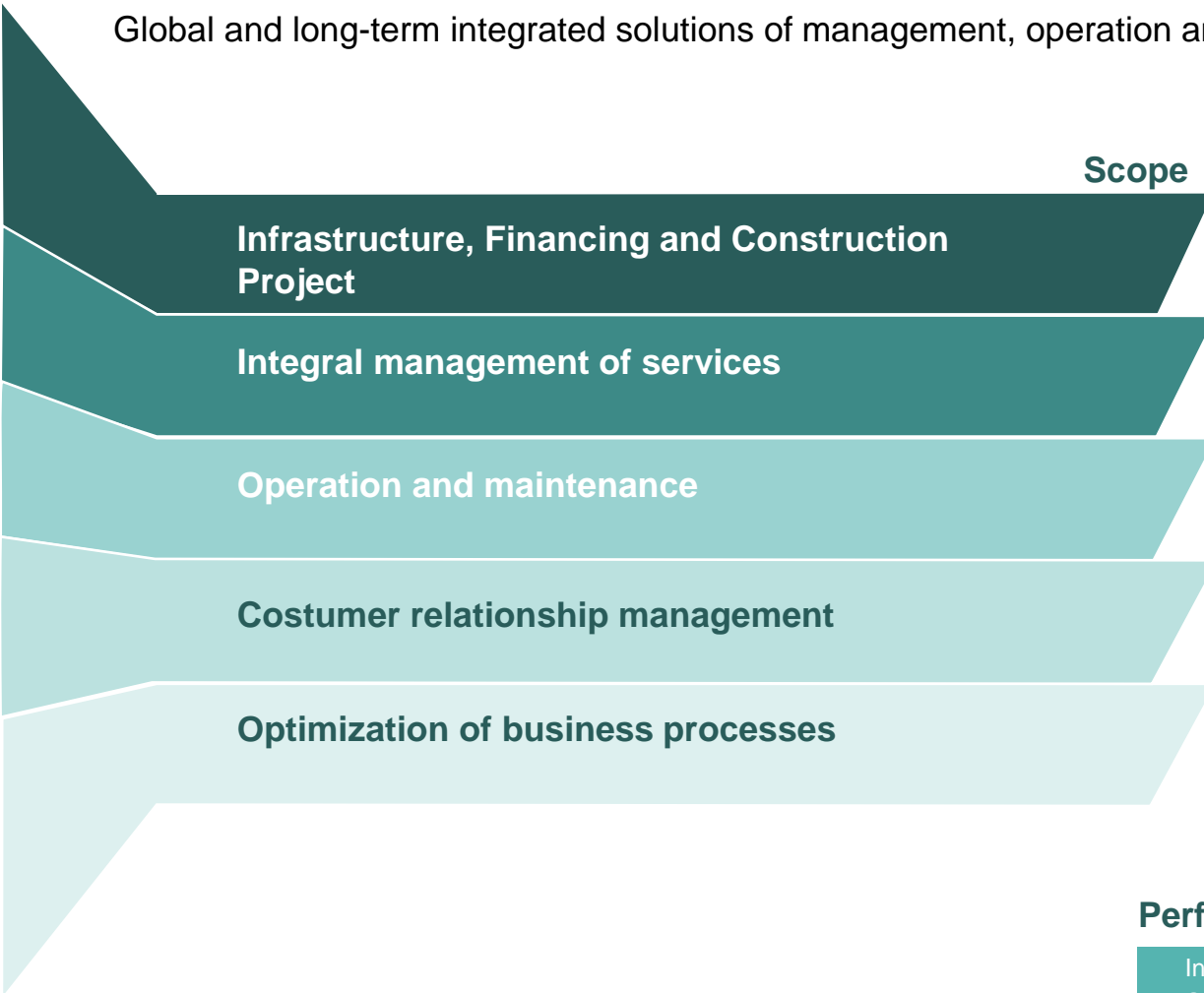
| NRW management Proven Success



Concession Contracts

Water & Wastewater Concessions

Global and long-term integrated solutions of management, operation and maintenance of Water and Wastewater Municipal Systems.



Performance indicators



Concession Contracts

NRW benchmarking

For over a decade, the **national average NRW index** in Portugal remains **around 30%**. Municipalities with water services managed by Private Operators through **Concession Contracts**, however, swim against the tide **with NRW levels of 17,6%** - way below the national average.

Management Model	Asset Ownership	Operator*1	NRW % of Input Volume	NRW L/km.day	Real Losses L/Connection.day	Real Losses m ³ /km.day
Municipal Concession	Public	Private	17,6	3.125	61	2,3
Multi-municipal Concession	Public	Public	30,4	6.650	139	4,9
State Company – Central Gov. Delegation*2	Public	Public	11,3	18.186	143	10,3
Municipal Company – Local Gov. Delegation	Public	Public or Public/Private	27,3	5.489	120	4,2
State/Municipalities Partnership – Delegation	Public	Public	33,0	3.750	105	3,0
Direct Management – Autonomous Municipal Services	Public	Public	26,3	8.596	151	6,1
Direct Management – Municipal Services	Public	Public	42,5	6.918	153	5,1
TOTAL			28,8	6.105	127	4,5



Savings would supply 1,5 million people

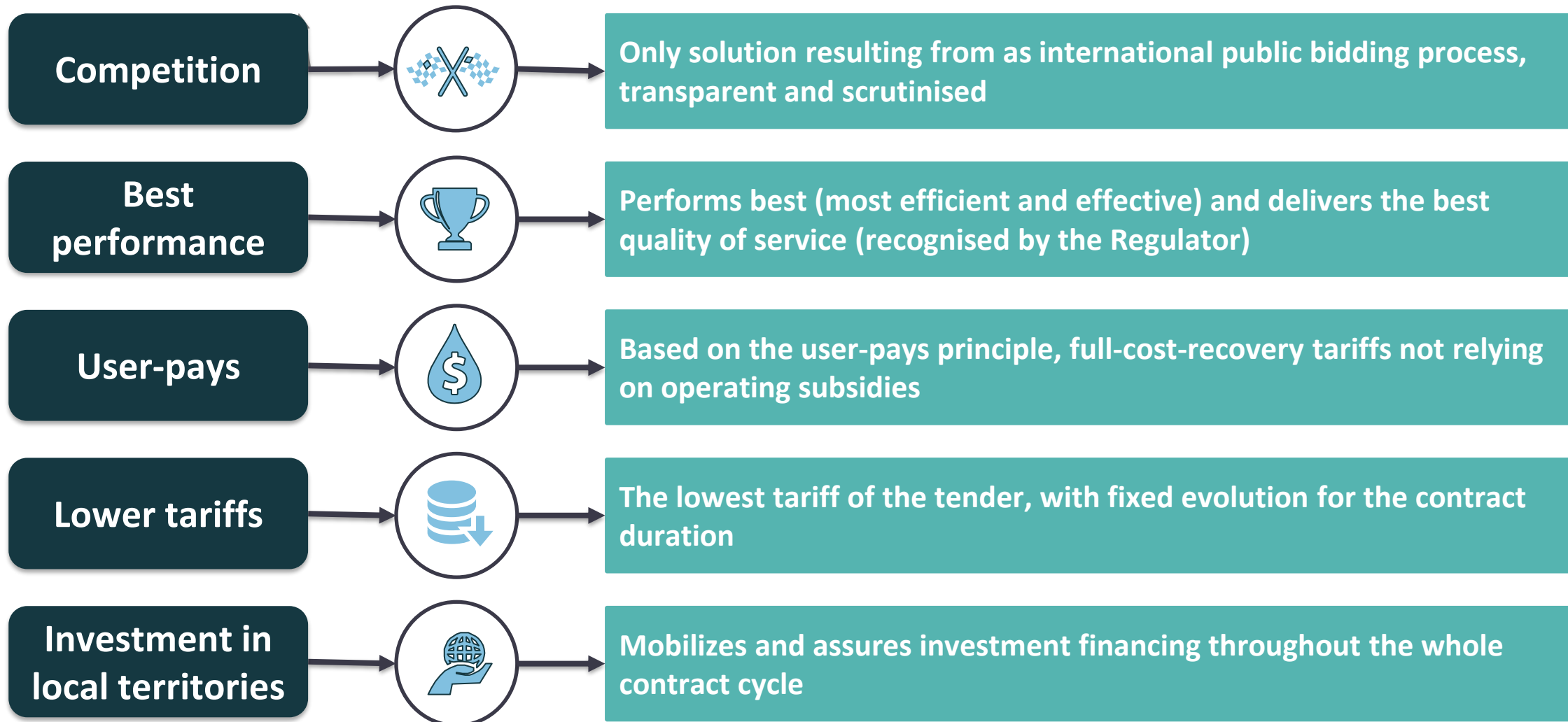
If overall water efficiency nation-wide matched concessions' levels, the country would save enough water to serve 1,5 million additional people, and generate **€150 million annual savings**

*1 Full responsibility for Design, Finance, Build, Management, Operation and Maintenance (CAPEX, OPEX and Commercial Risk) .

*2 Refers only to EPAL distribution business.

Concession Contracts

Key benefits



INDAQUA

Water Efficiency Leaders

WWW.INDAQUA.PT

