



# Aena's Strategic Water Plan 2021-2030





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# Introduction

**According to the World Bank, over the next three decades, the global food system will need between 40% and 50% more water; municipal and industrial water demand will rise by 50% to 70%, and water demand for energy use will increase by 85%.**

Therefore, the use and deterioration of renewable natural resources such as water is one of the great challenges the planet is facing, **and the risk of water deficit** is one of the main problems that governments, companies and society in general must address from a global vision.

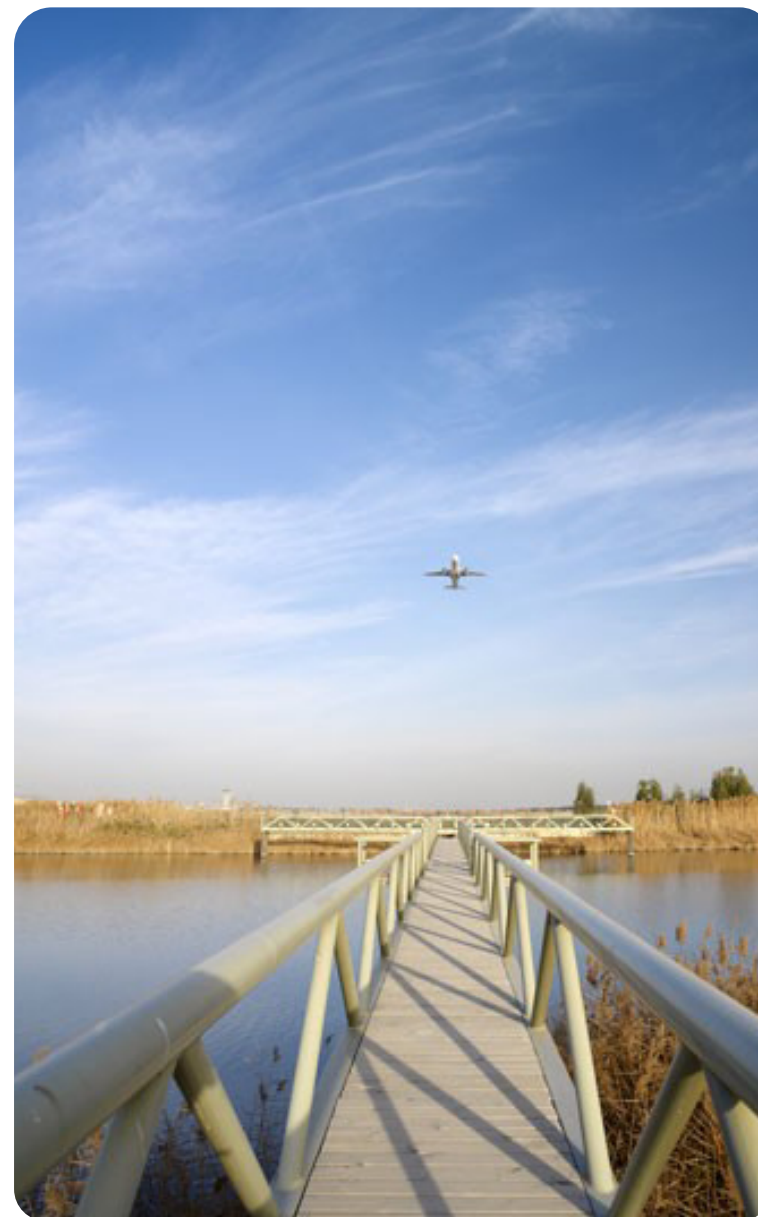
In addition, **the sustainability and availability of water resources** is affected by climate change, which causes a decrease in water resources and a degradation and loss of water quality.

This has meant that the protection and sustainable consumption of water is one of the pillars of the **United Nations Sustainable Development Goals (SDGs), with which Aena is aligned**. This pillar demands that every corner in the world has access to clean, pollution-free and responsibly managed water.

Aena is therefore working to achieve **sustainable water management**, aware that a holistic view of the

management of this precious resource is the way to combat both the impacts that climate change is having on water availability and to minimise the impacts that water scarcity can cause from a social, economic and environmental point of view.

In this respect, Aena's airports constitute large areas through whose facilities more than 275.2 million passengers passed in 2019 alone, the equivalent of more than half the population of Europe (in an area of just 167 km<sup>2</sup>). This turns airports into small cities every day, where water is used by thousands of people such as employees, passengers or other users, who transit through its facilities and to whom we must provide **a quality service based on efficiency**. Aena is aware of the need to manage water resources responsibly, guaranteeing their quality and avoiding their degradation so as not to compromise or jeopardise their future availability. Based on all of the above, Aena has drawn up this **Strategic Water Plan**, as proof of the commitment acquired by the company to carry out its activities and services under the criteria of sustainability and the fight against climate change, which, together with the knowledge and monitoring of the water management carried out at its centres, provides a solid basis for establishing a robust strategy.





# Purpose and scope

To draw up a strategic plan for water management at our centres, as a key instrument for pooling the information available on the subject, as well as to consolidate and strengthen a process of change in water management at airports. The scope of this strategy covers all 46 airports and 2 heliports in the Aena network in Spain.



# Outline of the Strategic Plan

In order to carry out this strategic plan, we have started with a **diagnosis of the current situation in terms of water management**, in order to assess consumption for the different uses and origins, and thus obtain an overall picture of the management of this resource. Based on the results obtained from the initial diagnosis, we have identified the **risks and opportunities in terms of water**, defining objectives and establishing the corresponding lines of action to achieve them, taking into account not only consumption issues but also potential environmental risks.

## Outline of Aena's Strategic Plan for water management





# Initial diagnosis

In order to obtain a detailed picture of the situation at the airports, detailed information was gathered on water management at our centres, by **drawing up status reports on the different phases of water cycle management at the airports**: drinking water (supply sources, distribution and storage systems, consumption), wastewater (origin, networks, treatment systems, discharge and control, sludge generated by treatment systems), stormwater (activities with potential pollution risk, networks, treatment systems, discharge and control), communication, participation and awareness-raising in water issues, external risks, as well as weaknesses, strengths and areas for improvement.

This diagnosis has made it possible to establish **areas for improvement** in different issues related to water management:

1 Supply	e.g. water quality, infrastructure and supply equipment;
2 Management	e.g. control, saving measures, supply to third parties, communication and awareness-raising;
3 Waste water	e.g. treatment plants and sealing of networks;
4 Stormwater	e.g. seepage and treatment systems;
5 External risks	e.g. interruption of supply in times of drought and floods.

In addition, **good practices in water management** carried out in several Aena airports were identified during the diagnosis, which have the potential to be transferred to other centres in the network (*following infograph*).

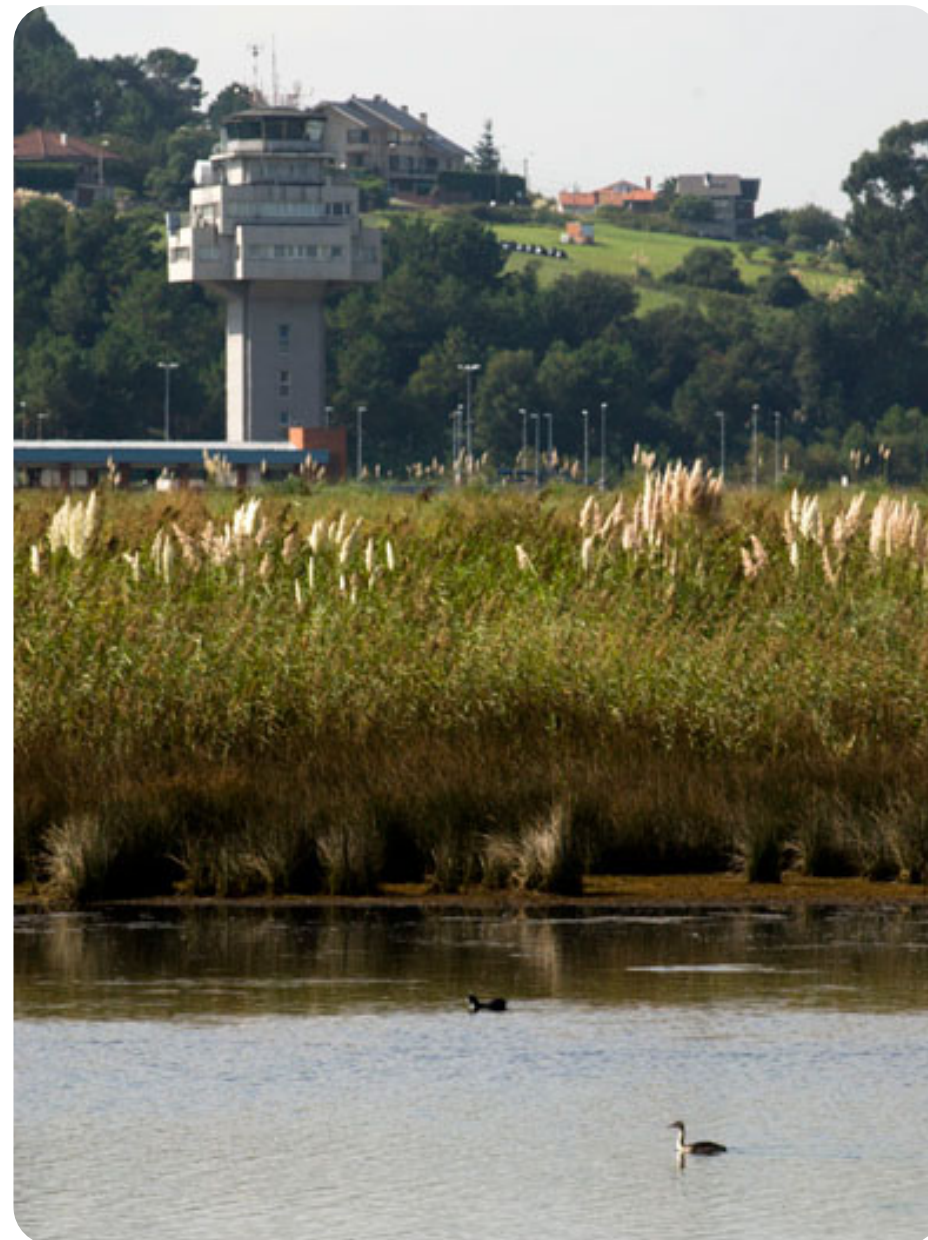




HISTORICAL CONSUMPTION DATA AT AENA (Thousand of m<sup>3</sup>)

	2018	2019	2020
Desalination water/ Sea water	219.9	185.1	188.6
Well water/Groundwater	1,825.6	1,771.8	1,361.5
Drinking water from mains	3,496.4	3,463.6	2,181.9
Consumption of reclaimed water purchased from third parties and from reclaimed mains/ Supply of municipal water or water from other water companies	90.6	42.0	91.9
<b>Total water consumption</b>	<b>5,632.5</b>	<b>5,462.5</b>	<b>3,824</b>
Reused water/ Directly collected and stored rainwater / Treated wastewater	344.7	325.1	282.1
Water consumption in water-stressed regions	3,879.6	3,712	2,522.3
% Water consumption in water-stressed regions over total water consumption	72%	68%	66%

**Note:** Regions considered water-stressed have been obtained from WRI Aqueduct and are those within the stress threshold above 40% (extreme and high level). According to this, 33 airports in the Aena network are located in water-stressed regions.





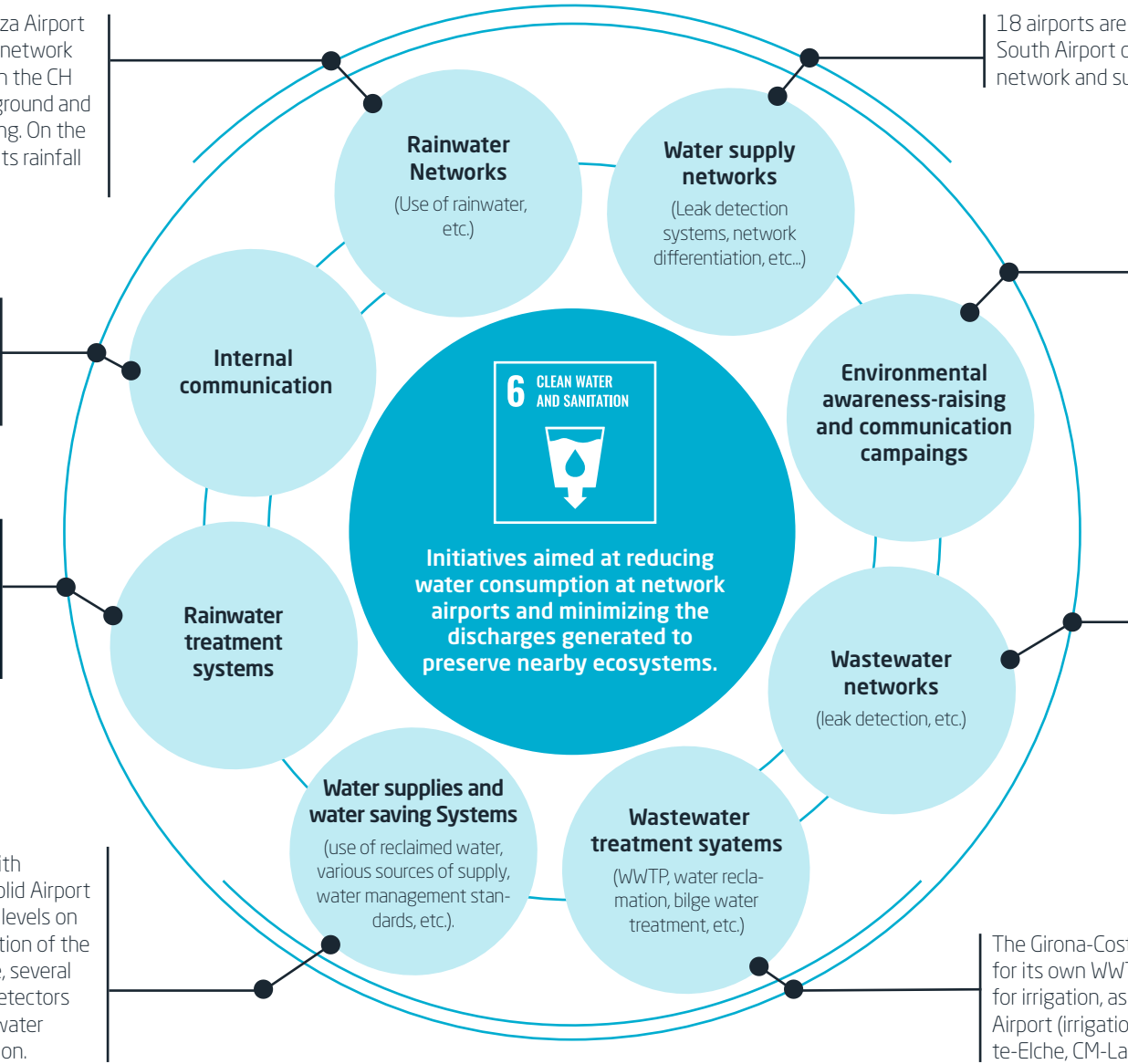
AENA INITIATIVES ON WATER MANAGEMENT

A project has been launched at Zaragoza Airport to rectify deficiencies in the rainwater network (including management of permits with the CH del Ebro) and prevent flooding on the ground and basement floors of the Terminal Building. On the other hand, Valladolid Airport irrigates its rainfall areas with stored rainwater.

Several airports, such as Seve Ballesteros-Santander, Gran Canaria, Jerez de la Frontera, Vigo and Zaragoza, report internally on water consumption and treatment indicators.

The airports in the Aena network have hydrocarbon separators that treat all rainwater susceptible to dragging in oils, grease and hydrocarbons, including vehicle and bus parking areas.

The network's airports are equipped with energy-saving automated taps. Valladolid Airport monitors water consumption and tank levels on a daily basis and controls the consumption of the concessionaires by meter. Furthermore, several airports have implemented presence detectors for urinals in public toilets to regulate water output and non-automated drip irrigation.



18 airports are developing such initiatives. Tenerife South Airport carries out preventive checks of the network and surveillance with camera equipment.

The airports of Alicante-Elche, César Manrique-Lanzarote, León, Adolfo Suárez Madrid-Barajas or Vigo periodically carry out awareness-raising campaigns in this area. Likewise, several airports, such as Seve Ballesteros-Santander, Gran Canaria, Jerez, Vigo or Zaragoza, report internally on indicators related to water consumption and treatment.

Gran Canaria Airport has a system that uses cameras to inspect the inside of the wastewater network pipes and flow meters are being integrated into each wastewater pump in order to detect possible leaks. In Palma de Mallorca, flow meters are being integrated into each wastewater pumping station to detect possible leaks. Similar initiatives are also being undertaken at the airports of Valencia, César Manrique-Lanzarote and Girona Costa Brava.

The Girona-Costa Brava Airport uses reclaimed water for its own WWTP processes, and it is planned to use it for irrigation, as is already carried out in Fuerteventura Airport (irrigation of green areas and gardens), Alicante-Elche, CM-Lanzarote and Ibiza.





# Calculation of the water footprint

Aena's Strategic Plan 2018-2021 includes the determination of the water footprint of Aena's airport network, among its lines of action in sustainability. For this reason, a work schedule has been established to assess the water footprint of the Aena network centres throughout 2019-2021, in addition to the Strategic Plan for Water Management.

The methodology followed for the **calculation and assessment of the water footprint** of our centres is the one defined in "The Water Footprint Assessment Manual" (Arjen Y. Hoekstra, 2011). This document exhaustively develops the main bases and methodology for the calculation and assessment of the sustainability of the water footprint.

In order to achieve this objective, a planning by centres was first established, based on the following criteria:

- |   |  |   |  |
|---|--|---|--|
| <b>1</b>  | <b>2</b>                               | <b>3</b>  | <b>4</b>   |
| <b>Relative water consumption</b><br>in litres/ATU* during the period 2016-2018 | Situations of <b>prolonged drought</b> | Alert status of the <b>water scarcity indicator</b> | Proximity to <b>protected or sensitive areas</b> |

Based on this analysis, **priority was given to calculating the water footprint** of those centres whose average relative water consumption during those three years was greater, those that were in situations of prolonged drought and in states of alert or emergency due to water scarcity, and those that were closer to discharge areas or sensitive catchment or specially protected areas.

With all of this, a planning of the work was established, in such a way that in 2020 **the water footprint of 23 centres was assessed**, representing approximately 80% of the total average water consumption of the network during those three years, with the assessment of the water footprint of the remaining 26 centres planned to be undertaken in 2021. The calculation of the water footprint has been incorporated as a mandatory programme or action in the 2020 and 2021 Operational Plans. The base year used for the calculation was 2019 as it was the latest representative year available.

\*ATU: Parameter that show the activity of an airport, considering its operations, passengers and volume of annual cargo.  $ATU = \text{Passengers} + (100 \times \text{Operations}) + (10 \times \text{Tons of cargo})$



# Strategic objectives

Aena has defined two strategic objectives for action in water management for the provision of its services:

## Objective 1

To **develop water management that addresses the loss of freshwater availability and quality** associated with climate change by decreasing water consumption by 10% per passenger by 2030 compared to 2019 **(5% reduction in 2026)**.

## Objective 2

To achieve **integrated management of water supply sources and climate change risks**, increasing the use of alternative water sources per passenger by 150% by 2030 compared to 2019 **(50% increase in 2026)**.

These strategic objectives are in line with one of the principles of action defined in the Integrated Quality, Environment and Energy Efficiency Management Policy currently in force (dated November 2016) and, specifically with the need to:

***"Promote actions aimed at preventing the pollution [...] of water [...], as well as efficient consumption of natural resources".***

The strategic objectives apply to **all the activities and services provided by Aena**, both in airport facilities and in the rest of the buildings and infrastructures managed by Aena. These strategic objectives are aligned with the lines of action on which Aena's Strategic Plan is based, as well as with its sustainability objectives.





# Action Plans

In order to achieve the established objectives, this Strategic Water Plan has defined an **Action Plan for each airport** that is articulated on the basis of 6 lines of action that include 30 projects, as shown in the attached figure:



**Calculation of the water footprint:** Measurement of the water footprint to know its impact on sustainability and adapt the management of the water cycle in airports.



**Neutral water balance:** Projects focused on the identification of water pollutants that are currently discharged into the network, as well as the smart treatment and improvement of the quality of wastewater and rainwater.



**Efficiency in drinking water consumption:** Projects aimed at reducing water consumption by detecting drinking water leaks in existing networks, improvements in the facilities that make up the networks and the real-time management and monitoring of drinking water, among others.



**Increased reuse of water:** Supply from alternative sources (reclaimed water from the WWTP, desalinated water, rainwater, etc.) and the use of reclaimed water to supply irrigation, among others.



**Adaptation of procedures to climate change:** Projects for the definition or change of working procedures and development of water management standards



**Awareness-raising and communication:** Drawing up a Communication Plan adapted to the airport's stakeholders and situation with regard to water, as well as an environmental awareness-raising plan covering Aena personnel, subcontractors, passengers, students, concessionaires and other companies that carry out their activities at the airport.

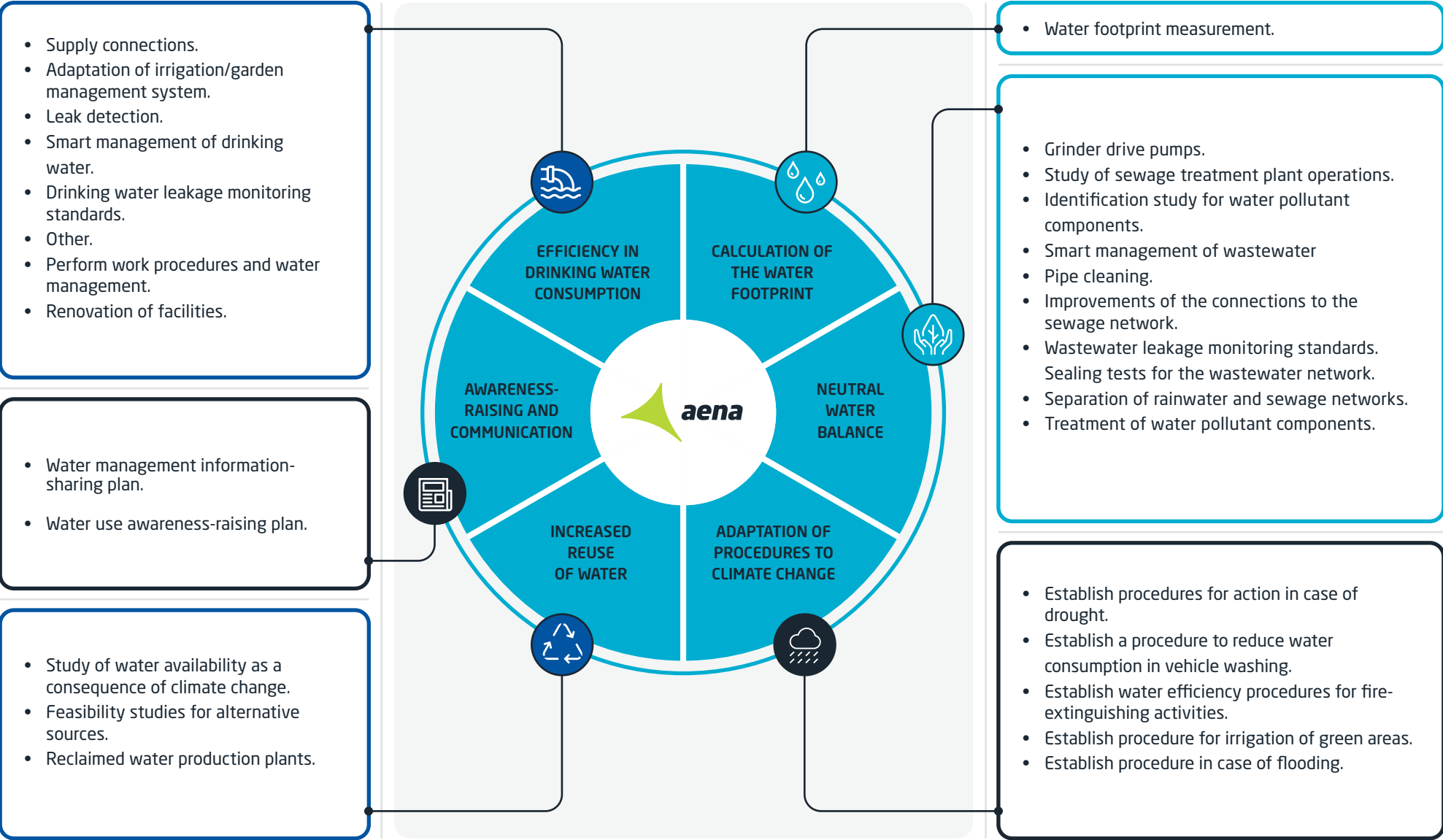


The resulting Action Plans have been obtained from the consolidation of actions identified for each of the airports in the Aena network, which include a description of the measures to be carried out as well as their execution period, cost and level of prioritisation.

These actions are associated with each centre of the Aena network, **which will allow the company to improve its water management**, orienting it towards sustainability and, therefore, achieve the strategic and specific objectives.



Aena's Water Strategy is articulated in 6 initiatives that include 30 projects





# Monitoring

Aena has identified monitoring indicators for the aforementioned actions, projects and initiatives that will be compiled on an annual basis and published through the company's corresponding reporting mechanisms.

Specific Objectives/KPI's	
Strategic objective 1	1.1 To reduce the consumption of drinking water / % reduction in water consumption per passenger compared to 2019.
	1.2 Calculate the water footprint of the total airports in the Aena network / Number of water footprints evaluated.
	1.3 Achieve a neutral water balance in the airport network / % m³ of water compensated with respect to the m³ of water to be compensated.
	1.4 Adapt work procedures and water consumption to the impacts derived from climate change / % of procedures implemented compared to those prepared.
	1.5 Training, awareness-raising and communication actions related to reducing water consumption / number of actions implemented.
Strategic objective 2	2.1 Increase water consumption from alternative sources / % volume of water consumed from alternative sources (m³) compared to 2019.
	2.2 Carry out climate change impact studies on water availability at all airports located in water stress areas / % of studies carried out with respect to airports located in high and extremely high water stress areas .





