

Towards Effective Water Resilience in Europe: A focus on Spain

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In essence, water resilience: strategic priority and economic opportunity

- **Vital resource facing climate threats.** Water is essential for life, environmental sustainability, and economic prosperity, but the World, and Europe in particular, faces increasing threats from climate change—including floods, droughts, heatwaves, and fires—that risk severe socioeconomic impacts and particularly affect the most vulnerable regions and population.
- **Economic Opportunity and Competitiveness.** Sustainable water management represents a major economic opportunity, leveraging Europe's global leadership in water technology to reduce costs, generate employment, and enhance competitiveness. The EU aims to use its technological leadership to establish international partnerships and address global water challenges, including through active participation in initiatives like the *2026 UN Water Conference*.¹
- **Political priority and customized approach.** The EU prioritizes water resilience politically through its new **European Water Resilience Strategy**², acknowledging national differences in water availability and management approaches, promoting tailored and adaptable solutions. It paves the way for a water-smart Europe for people, economy and ecosystems and contains concrete actions up to 2030 to make Europe water resilient. It also highlights the EU's annual investment gap of c. €23 billion (0.1% of EU GDP)³ and underscores the need to scale up private investment.
- **Spain is increasingly vulnerable to the physical and economic consequences of climate change**, particularly from floods, droughts, heatwaves, and wildfires. Water stress is a pressing issue, exacerbated by high demands from agriculture—using 77% of water withdrawals in 2022.
- **Spain's public investment in water infrastructure is substantially below what is needed to ensure national water resilience.** Meeting the country's water challenges will require about **€6 billion per year over the next decade**—three times the current

¹: [2026 UN Water Conference](#)

²: [European Water Resilience Strategy](#)

³: The current annual capital investment in water-related measures -funded by the EU, the EIB and national budgets- amounts to roughly €55 billion (in 2022 prices).

levels (€2 billion in 2023–2024) and even exceeding the historical peak (€4.9 billion in 2007).

- **Strengthening Spain's water resilience is not only essential for protecting the environment and preserving vital ecosystems—it is also a strategic imperative for securing the long-term sustainability of key economic sectors.**

1. European Water Resilience Strategy

While water is essential for life, it remains a finite resource. Indeed, **30% of Europe's land is affected by water scarcity**. Access to clean and affordable water is a human right and a public good, as recognized by the European Union, which also promotes the development of a water-smart economy to boost competitiveness and attract investments.

Worsening water scarcity is expected due to climate change and increasing demand, particularly in southern and heavily populated areas of Europe, making improved water efficiency essential to safeguard ecosystems and support socio-economic stability.

Several policies have been adopted within the EU to address sustainable water use⁴, but it still faces significant challenges, putting water security at risk. To address this, the European Commission presented the European Water Resilience Strategy⁵ in 2025, which seeks to protect and restore the water cycle, develop a smart water economy, and guarantee access to clean and affordable water.

Water resilience presents a significant business opportunity for the EU, not only through innovation, as Europe is a global leader in water technology with 40%⁶ of all related patents worldwide, **but also by improving water efficiency and strengthening competitiveness**, including reduced consumption, cost savings, and enhanced energy production (17% of EU water consumption is used as feedstock or a cooling agent in energy processes). According to the strategy, **the EU should aim to enhance water efficiency by at least 10% by 2030**.

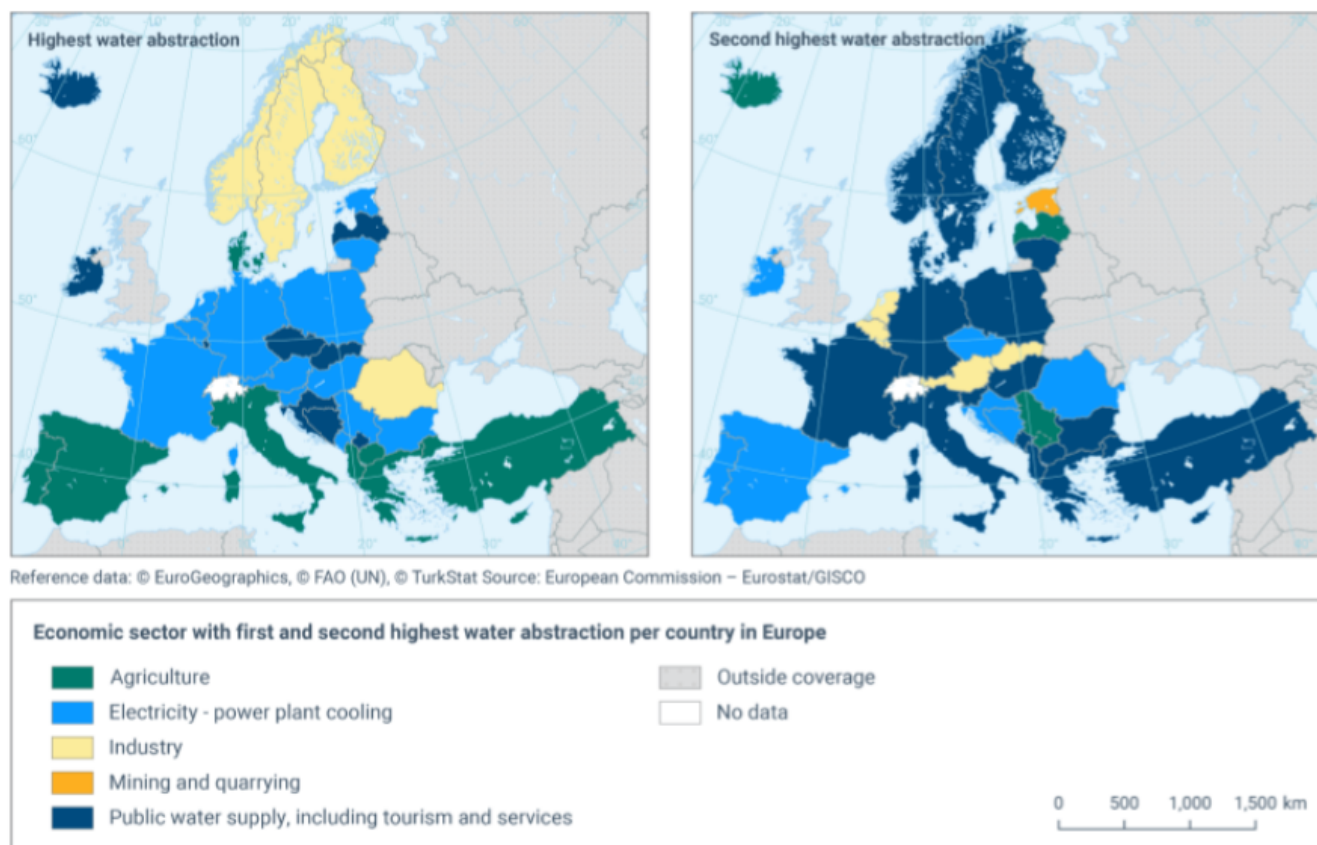
Key sectors for enhancing water efficiency. The economic sectors with the highest levels of water withdrawals have high savings potential and should therefore be considered priority areas for implementing efficiency and adaptation measures. These sectors include **cooling power plants for electricity production, agriculture, public water supply, and industry (Figure 1)**. During the period 2000-2022, these four sectors were responsible for 98% of total water withdrawals within EU economic sectors. The distribution of water abstraction by sector varies significantly between countries, depending on their economic structure. In Spain, agriculture concentrates around 60% of the total water withdrawal.

⁴: The Water Framework Directive (WFD, 2000), the Energy Efficiency Directive (2023), the Common Agricultural Policy (2023), and plans related to the circular economy and climate change adaptation, among others.

⁵: [European Water Resilience Strategy](#)

⁶: European Patent Office, "Innovation in water-related technologies" (July 2024).

FIGURE 1. ECONOMIC SECTORS WITH THE HIGHEST WATER ABSTRACTION PRESSURE AT THE COUNTRY LEVEL, 2020-2022



Source: Water savings for a water-resilient Europe (EAE)

The **European Water Resilience Strategy** establishes **specific actions in five key areas for the period 2025-2030 to make Europe water resilient**:

- 1. Effective implementation and governance:** No additional regulation is needed, the strategy **focuses on effectively implementing the current EU water related directives** (e.g. 2000 Water Framework Directive) **or even reduce administrative burden** by simplifying (e.g. the revision of the Marine Strategy Framework Directive). To accelerate and enhance implementation, **structured dialogues with all member states** will be launched as well as regular exchanges to promote best practices and identify implementation challenges.
- 2. Investments:** The current annual water-related capital investment (EU, EIB and national budgets) stand at €55 billion⁷ but there is an **annual investment gap of around €23 billion (0.1% of EU GDP) to implement the existing water legislation**. Within the proposals, an increase of available cohesion policy funds for water resilience investments, a roadmap for nature credits in order to scale-up these markets, and closer cooperation with the EIB to step up public and private investments in the area of water, both in the EU and globally. The **EIB** has a mandate to support Water Resilience Strategy **with over €15 billion during 2025-2027**.

⁷: In 2022 prices.

Furthermore, the **Water Resilience Investment Accelerator would be launched to implement 20 pilot innovative cases** for natural water retention and water efficiency and inspire similar actions across the EU. **Private investment will need to be significantly stepped up.**

3. **Accelerate digitalisation and AI:** Digitalisation could unlock a deep shift in water management and promote sustainable water use through **EU-wide action plans**. These plans would face the **digital challenges of the water sector such as analogue and aging systems or large data sets in many different repositories**. **A “one-stop shop” for Earth Observation products relevant to water management – a Water Thematic Hub- would be provided by Copernicus.**
4. **Research and innovation, industry and skills to strengthen competitiveness:** Urgent action is required to **ensure pollutant-free drinking water** (e.g. PFAS). Currently, only c.40% of the EU’s surface waters meet good ecological status, and less than 30% meet good chemical status. Health-related costs linked to persistent pollutants are estimated at €52–84 billion annually across EEA countries. While **remediation is costly, targeted research and innovation—supported by public-private collaboration—can deliver the technological solutions** needed to reduce these impacts.

Additionally, **water resilience should be integrated into all industrial sectors** (e.g. to improve water reuse across production processes). **A pilot project will be launched to promote water efficiency in selected industries.** The proposed Ecodesign for Sustainable Products Regulation and the EU Ecolabel seek to reduce the water footprint and enable consumers to make informed choices by selecting more water-efficient products.

The Commission also plans to **support competitiveness** with the launch of the Water Smart Industrial Innovation, the Knowledge and Innovation Community (KIC) in Water, Marine and Maritime Sectors and Ecosystems under the European Institute of Technology (EIT). The up-coming EU Start-up and Scale-up Strategy will have a special focus on water resilience.

Security and preparedness to boost collective resilience. Need to **enhance EU real-time early warning and monitoring systems** for floods and droughts with a **strengthened coordination among European, national and local governments**. Other measures include to **adopt a European Climate Adaptation Plan** or enhance resilience of on/offshore water infrastructure (through the implementation of the Critical Entities Resilience Directive).

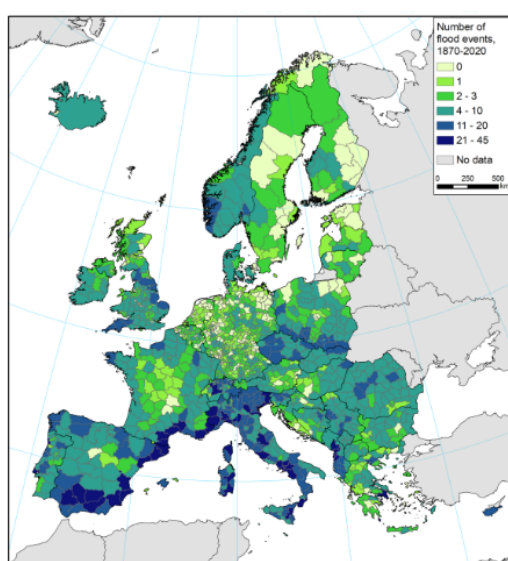
2. Spain’s Path to Sustainable Water Adaptation⁸

Spain faces serious physical and economic impacts due to climate change, with **considerable vulnerability to extreme events like floods, droughts, heatwaves, and wildfires (Figure 2)**. Between 1980 and 2023, weather and climate-related extreme events caused economic losses amounting to €95.9 billion, of which only 5% were insured, well below

⁸. [2025 Country Report-Spain](#)

30-40% in Germany, France or Netherlands, and over 60% in Denmark.⁹ It aggravated preexisting vulnerabilities, with more than 32,000 fatalities during the analyzed period. Compared to other EU countries, Spain ranks second in flood occurrences (304 between 1870 and 2020), behind Italy, which recorded by far the highest number (743). However, the number of fatalities in Spain (4,395)¹⁰, was slightly higher than in Italy (4,167), underscoring its vulnerability and the crucial role that climate adaptation strategies must play (**Figure 3**). **National policy measures related to climate adaptation have further strengthened over recent years, but additional efforts are required.**¹¹

FIGURE 2. NUMBER OF FLOOD EVENTS IN EUROPE



Source: D. Patrotny et al., 2024, Hanze v2.1: an improved database of flood impacts in Europe from 1870 to 2020

FIGURE 3. KEY INDICATORS TRACKING PROGRESS ON CLIMATE ADAPTATION AND WATER RESILIENCE

	Spain			EU-27	
	2018	2021	2023	2018	2021
Drought impact on ecosystems (area impacted by drought as % of total)	0.36	0.74	6.84	6.77	2.76
Economic losses from extreme events (EUR million at constant 2022 prices)	2,17	2,91	7,13	24,14	62,98
Water Exploitation Index Plus, WEI+ (total water consumption as % of renewable freshwater resources)*	6.0	6.7	-	4.5	4.5

*This indicator measures total water consumption as a percentage of the renewable fresh water resources available from a given territory and period. Values about 20% are generally considered to be a sign of water scarcity, while values equal or greater than 40% indicate situations of severe water scarcity.

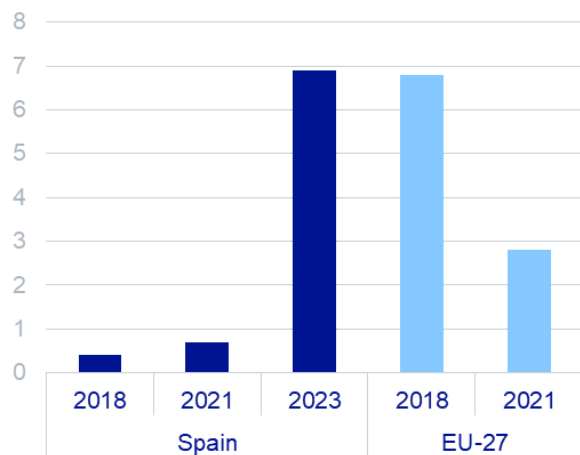
Source: BBVA Research form 2025 Country Report Spain

⁹: [EEA, 2024, Economic losses from weather and climate-related extremes in Europe.](#)

¹⁰: [D. Paprotny et al., 2024, Hanze v2.1: an improved database of flood impacts in Europe from 1870 to 2020](#)

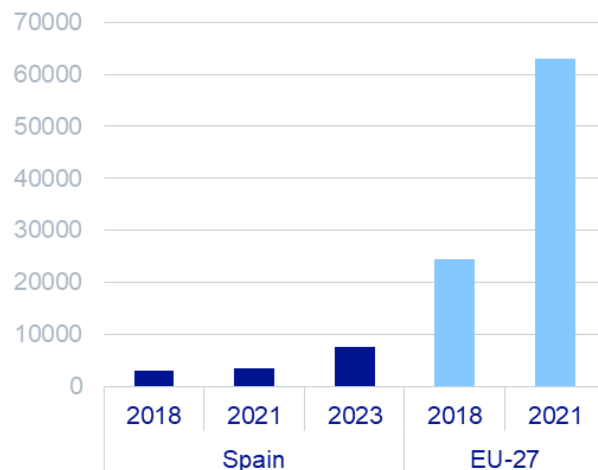
¹¹: For an analysis of the economic impact of extreme climate events, see [Assessing the impact of extreme climate events: Evidence from the Valencia Floods-BBVA Research](#). May 9, 2025.

FIGURE 4. DROUGHT IMPACT ON ECOSYSTEMS
(AREA IMPACTED BY DROUGHT AS % OF TOTAL)



Source: 2025 Spain Country Report

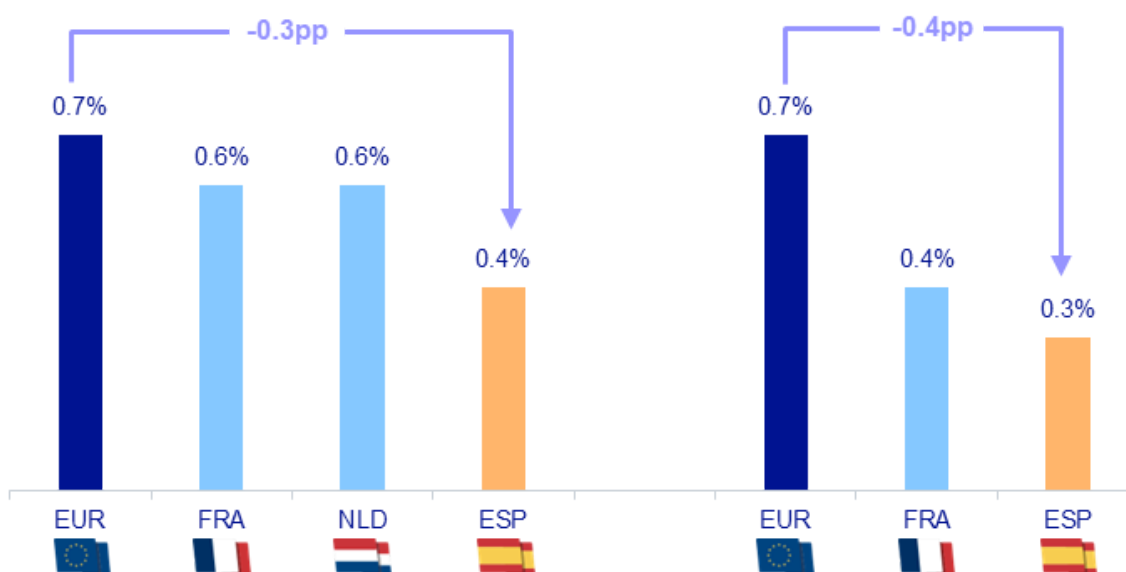
FIGURE 5. ECONOMIC LOSSES FROM EXTREME EVENTS
(EUR MILLION AT CONSTANT 2022 PRICES)



Source: 2025 Spain Country Report

Vast areas in Spain endure water stress, largely because of the competing demands of agriculture, tourism, and energy sectors. Agriculture is the largest water consumer and, despite cutting its usage by 7% between 2016 and 2020, it still accounted for 77% of total withdrawals in 2022—placing significant pressure on water resources. Measures to curb water use in agriculture have been introduced—more efficient irrigation, deployment of non-conventional water sources, and promotion of drought-resilient crops—**yet formidable challenges persist, especially in regions under severe water stress.**

FIGURE 6. RENEWAL RATE IN WATER SUPPLY AND SEWAGE (LEFT) AND TREATMENT ASSETS (RIGHT). % 2019*



Source: PWC "Estimación del déficit de inversiones en el ciclo urbano del agua en España (*). The asset renewal rate is the rate at which infrastructure is renewed each year. It is expressed as a percentage of the depreciable amount of the asset

Water management remains critical, with aging infrastructure, governance and

efficiency challenges—26% of water supply and 44% of wastewater networks are over 40 years old. In 2019, the renewal rate for water supply and sewerage assets was just 0.4%, below the EU average (0.7%). Similarly, the renewal rate for wastewater treatment infrastructure was 0.4 points below the European average (**Figure 6**).¹²

Wastewater treatment is also of particular concern. Despite improved compliance over time, Spain has experienced significant difficulties in properly implementing the Urban Wastewater Treatment Directive. This partial implementation has forced the European Commission to take legal action. In its recently published country report for Spain,¹³ the European Commission recommends that Spain adopt appropriate measures and implement the necessary projects to comply with the Directive requirements, taking advantage of available EU funding.¹⁴

Greater water infrastructure investments are needed to strengthen water resilience. Spain has already mobilized significant resources in the past to address its water-related investment needs. From the early 2000s to 2007-2008, public investment in water infrastructures followed an upward trend, reaching a historic peak of over €5 billion (**Figure 7**). After the financial crisis, investment fell sharply, bottoming out below €1.5 billion by 2014. Although a gradual recovery began in 2019, reaching €2 billion by 2024, **recent water investment levels remain well below (around 55%) those of the pre-financial crisis and far from what is needed to strengthen water resilience in Spain.** Further infrastructures are essential to strengthen water management—mainly in areas such as wastewater collection and treatment, water reuse, leakage reduction, and the overall improvement of water supply systems. Spain has faced serious difficulties in implementing the Urban Wastewater Treatment Directive, which is an area of particular concern for the European Commission.¹⁵

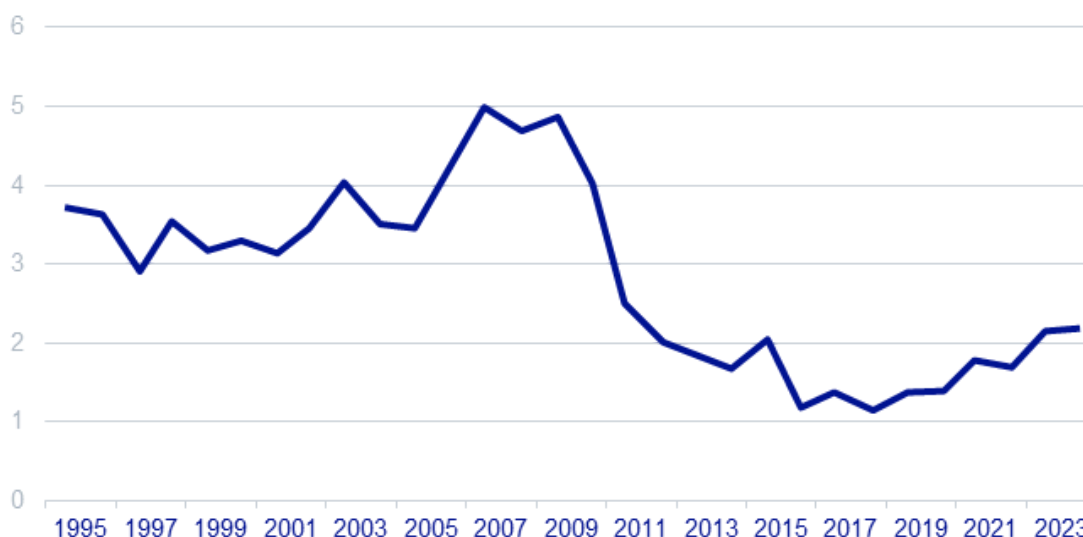
¹²: [Estimación del déficit de inversiones en el ciclo urbano del agua en España](#)

¹³: [2025 Country Report - Spain](#)

¹⁴: The European Regional Development Fund and the Recovery and Resilience Facility.

¹⁵: [2025 Country Report - Spain](#)

FIGURE 7. PUBLIC INVESTMENT IN WATER INFRASTRUCTURE IN SPAIN
(EUR BILLION AT CONSTANCE 2020 PRICES)



Source: BBVA Research from IVIE database of Capital Stock and Services

Spain's water investment needs are estimated at around €6 billion per year, triple the current investment. Both the European Commission and PwC¹⁶ estimate annual water investment needs of around €6 billion in the coming years (€5.7 billion and €6.2 billion, respectively). Taking the current level of public water investment in Spain as a reference (around €2 billion in 2023 and 2024), this results in an **investment gap of around €4 billion annually. This figure differs from that estimated by the European Commission (€1.8 billion) and PwC (€5 billion)**, mainly due to the different level taken as a reference: €4.9 billion (peak 2007) for the Commission and €1.2 billion (average 2017-2022) for PwC.

In this context, strengthening Spain's water resilience is both an environmental imperative and an economic necessity. By tackling current challenges and investing in strategic solutions, Spain can safeguard its ecosystems while ensuring long-term stability for key economic sectors. These efforts will also position the country in alignment with EU recommendations, reinforcing its commitment to sustainable and resilient water governance.

¹⁶: [Estimación del déficit de inversiones en el ciclo urbano del agua en España](#)

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