



Living
Rivers
Europe

Adapting to the climate and water crises

Joint position paper for a water resilient Europe

26 October 2023



From heat waves to droughts, floods and forest fires, the impacts of climate change are growing in both frequency and intensity across Europe. All of Europe and all sectors of its economy are affected in different ways, but there is a common factor: **climate change impacts are frequently felt through excesses or shortages of water** (WWE, 2020). For decades we have been overexploiting and degrading our water resources, and this has affected all the services that healthy rivers, lakes and wetlands provide, including aquifer recharge, water purification for drinking water, and healthy soil moisture levels for farming, while also resulting in an unprecedented loss of aquatic biodiversity and habitats. Climate change is now exposing the dangers of continuing with this approach (WWE, 2023).

Improving the way we manage water and use the land in the catchment area is key to adapting to climate change, just like reducing carbon emissions is key to mitigating climate change. This should not mean building more grey water infrastructure to contain, transport, pump or store water. Building new dams, implementing large-scale water transfers and channelling riverbeds should be avoided, as in most cases heavy infrastructure only increases vulnerability to climate change impacts in the long run.

At the core of a water and climate resilient Europe is changing the way we value and manage water. The priority for adapting to the climate and water crises should be to protect and restore freshwater ecosystems and re-establish natural or near-natural water regimes. **To ensure clean and sufficient water for people, we must maintain healthy freshwater ecosystems for nature.** Healthy freshwater ecosystems replenish aquifers, sustain the water cycle, and ensure that rivers, lakes, wetlands, and groundwater are in good condition.

This means rewetting wetlands so that they can absorb and filter water and store it in the ground. It means re-meandering and reconnecting rivers to their floodplains to ensure natural flows and sustain riverine habitats. It also means extracting only the amount of water we need for sustainable farming and drinking water in the most water-stressed areas.

While some work should be done at Member State level, there is also a strong need for the EU to guide, coordinate and drive Member States' water and climate adaptation action, in a more stringent way than the current [EU Climate Adaptation Strategy](#) does. Despite strong EU nature, water and climate legislation, a large challenge still remains to ensure coherence between the various relevant EU policies, and to improve their implementation.

BUILDING NEW DAMS, IMPLEMENTING LARGE-SCALE WATER TRANSFERS AND CHANNELLING RIVERBEDS SHOULD BE AVOIDED, AS IN MOST CASES HEAVY INFRASTRUCTURE ONLY INCREASES VULNERABILITY TO CLIMATE CHANGE IMPACTS IN THE LONG RUN.



OUR ASKS

Ahead of the EU elections, and as a contribution to the [initiative for water resilience](#) proposed by European Commission President Von der Leyen, we¹ call for:

A FULLY IMPLEMENTED EU GREEN DEAL to build a resilient Europe, mitigate climate change, halt biodiversity loss and limit resource use, including water. This includes the urgent adoption of an ambitious **EU Nature Restoration Law**, and using the National Restoration Plans to enhance nature-based climate change adaptation.

A NEW WATER AND CLIMATE RESILIENCE LAW setting a requirement for Member States to create **EU Natural Water Reserves to protect critical water supplies and their catchments in water-stressed areas**. These would become part of the EU's water infrastructure, the protection and restoration of which should be of overriding public interest. In addition, the Law should provide adequate finance for upscaling the restoration or protection of floodplains, rivers, wetlands, and natural water retention measures, for instance through an **EU Sponge Facility**. It should also launch a framework for the setting of sectoral **water efficiency and water abstraction targets** at basin level, covering all water users.

THE FULL ENFORCEMENT OF THE EU WATER FRAMEWORK DIRECTIVE including an increase in the European Commission's legal resources to deal with the current backlog of pending complaints and cases.

CLIMATE ADAPTATION PROOFING OF ALL NEW EU LEGISLATIVE AND NON LEGISLATIVE ACTS by an independent, scientific "Adaptation Panel" which would screen all EU measures and legislative proposals and ensure the integration of climate change adaptation into sectoral plans affecting water and land use.

THE ELIMINATION OF EU SUBSIDIES FOR ACTIVITIES WHICH ARE HARMFUL TO RIVER MORPHOLOGY, WATER QUALITY, NATURAL WATER RETENTION IN THE LANDSCAPE, AND GROUNDWATER, in line with target 18 of the Global Biodiversity Framework.²

Jump to page [8](#) for more details on our asks.

A MOMENTUM FOR MORE EU ACTION ON WATER RESILIENCE

Water-related disasters have multiplied and intensified during recent years, with severe consequences for people and the economy

- » The floods which hit Greece in September 2023 affected primarily the Thessaly plain, which accounts for over one-quarter of the country's agricultural production. It is estimated that the land will need five years to become fertile again ([M. Zachariah, V.i Kotroni et. al., 2023](#)).
- » Massive floods in parts of Belgium, Germany and the Netherlands in July 2021 caused over 200 fatalities and immense infrastructure damage ([Copernicus, 2021](#)).
- » Navigation was disrupted on the Rhine river in Summer 2022 because of low water levels ([Central Commission for the Navigation on the Rhine, 2023](#)).
- » The casualties, damage and disruptions caused by such extreme weather events reveal the lack of Europe's preparedness to the rapidly changing climate, which leads to multiple shocks in a wide range of economic sectors. For example, hydropower production dropped by 20% in January-October 2022 in Europe due to low rainfall ([IEA, 2023](#)), and 62,000km² of cropland was affected by drought in Europe on average every year during the period 2000-2021 – twice the surface area of Belgium ([EEA, 2021](#)).
- » Around 30% of the European population lives in areas with permanent water stress and up to 70% live in areas with seasonal water stress during summer ([EEA, 2023](#)). A tenth of Europe's urban population currently lives in areas at risk of flooding, while over 170,000 people may be exposed to river flooding on an annual basis ([EEA, 2023](#)).

Decision makers are increasingly aware of the growing imbalance between water demand and water availability and the need to adapt to the impacts of climate change

Many Member States have adopted national adaptation strategies or plans based on the assumption that global warming will exceed the Paris Agreement limit of 1.5 degrees by 2100. At the Environment Council meeting on 20 June 2023, France, Greece, Portugal, Romania and Spain all acknowledged the multiple effects of climate change, including floods and low water levels. They called for the EU to prepare for global warming scenarios leading to 1.5° degrees in 2030 and to strengthen policies for climate change adaptation (see [recording](#)). The European Economic and Social Committee has also been working on water as a cross-cutting theme in 2023 and will make proposals for an EU Blue Deal addressing water scarcity and poverty in autumn 2023 ([EESC, 2023](#)).

International momentum for better protecting and restoring natural resources

There is a growing realisation that nature is part of the solution to adapting to climate change. On 8 June 2023, the European Central Bank published a report showing that 75% of all bank loans in the euro zone are to companies that are dependent on at least one ecosystem service, and the Vice-Chair of the ECB's Supervisory Board declared that "the economy and banks need nature to survive" in the face of climate change. The Kunming-Montreal Global Biodiversity Framework (GBF) adopted in December 2022 at the CBD COP 15 saw, for the first time, the inclusion of inland waters in the global conservation and restoration targets. Interestingly, the Kunming-Montreal GBF also plans for the progressive phase out or reform of subsidies that harm biodiversity by at least 500 billion per year by 2030, while scaling up positive incentives for biodiversity's conservation and sustainable use.

**NATURE
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CHANGE**

ADAPTING TO A CHANGING CLIMATE MUST ENTAIL STORING MORE WATER IN NATURE

The adaptation challenge: maintaining a functional water cycle

About 30-40% of precipitation in Europe is “green water”³ – water stored in soils and biomass, which is evaporated, or absorbed and evapotranspired by plants, and returned directly to the atmosphere. Green water is needed to maintain processes within ecosystems, as well as the functions, goods and services provided by these ecosystems. At the same time, “blue water” – water transiting in rivers, lakes and aquifers, is needed for drinking water and food and for biodiversity. **Adapting to climate change means making sure there’s simultaneously enough “green” and “blue” water for plants, animals and people** (INRAE). This is all the more important as “freshwater change” was found to be the sixth planetary boundary to be crossed out of nine in total, with both green and blue water boundaries transgressed (Stockholm Resilience Centre, 2023).

Climate change already is and will continue to impact water availability and quality

Southern European countries are already experiencing water stress (JRC, 2020), and changing precipitation patterns (more intense but less frequent rainfall) alter the blue cycle and the natural recharge of groundwater.⁴ Water stress affects freshwater biodiversity directly – for instance, when high water temperatures cause endemic aquatic species to die or invasive species to proliferate. It also affects freshwater biodiversity indirectly when climate change exacerbates other pressures such as water abstraction, the construction of dams (IUCN, 2011), or pollution (when low water levels in rivers or lakes caused by drought result in higher concentration of pollutants). Climate change also affects all the ecosystem services that healthy rivers, lakes and wetlands deliver to us such as water purification or water storage. And water stress will only intensify: **climate change effects are expected to cause seasonal reductions in water availability in most parts of Europe** including decreases in river discharges of up to 40% (EEA, 2021).

Climate change is exacerbating water issues which are primarily caused by water and connected land mismanagement

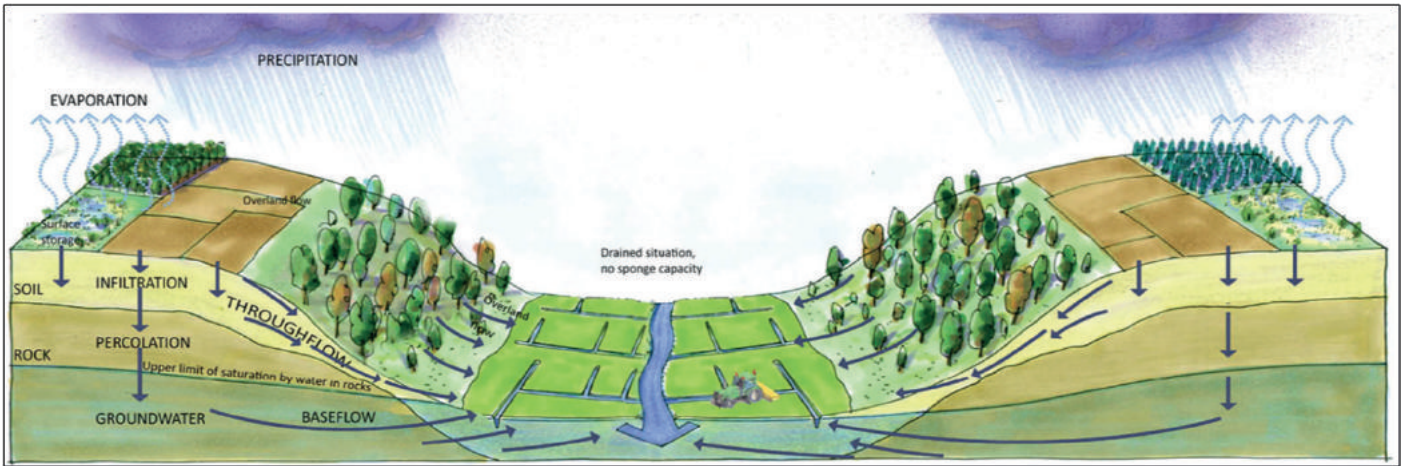
Damming, rectification of and channelling rivers, pollution, over-abstraction, destruction of watersheds, wetland and landscape drainage, soil sealing and failed land use planning are primarily responsible for Europe’s inability to meet the objectives set by the Water Framework Directive (EEA, 2018). For instance, **irrigation has been sucking wetlands dry – between 56% and 65% of Europe’s wetlands have been drained for agriculture**,⁵ and a region like Flanders, Belgium has lost 75% of its wetlands during the past 50-60 years alone (Wetlands 4Cities, 2022). River channelling, a widespread practice in Europe, also leads to riverbed incisions, which in turn cause groundwater levels to drop. Climate change is aggravating the pressures on freshwater ecosystems which have been overexploited for decades.

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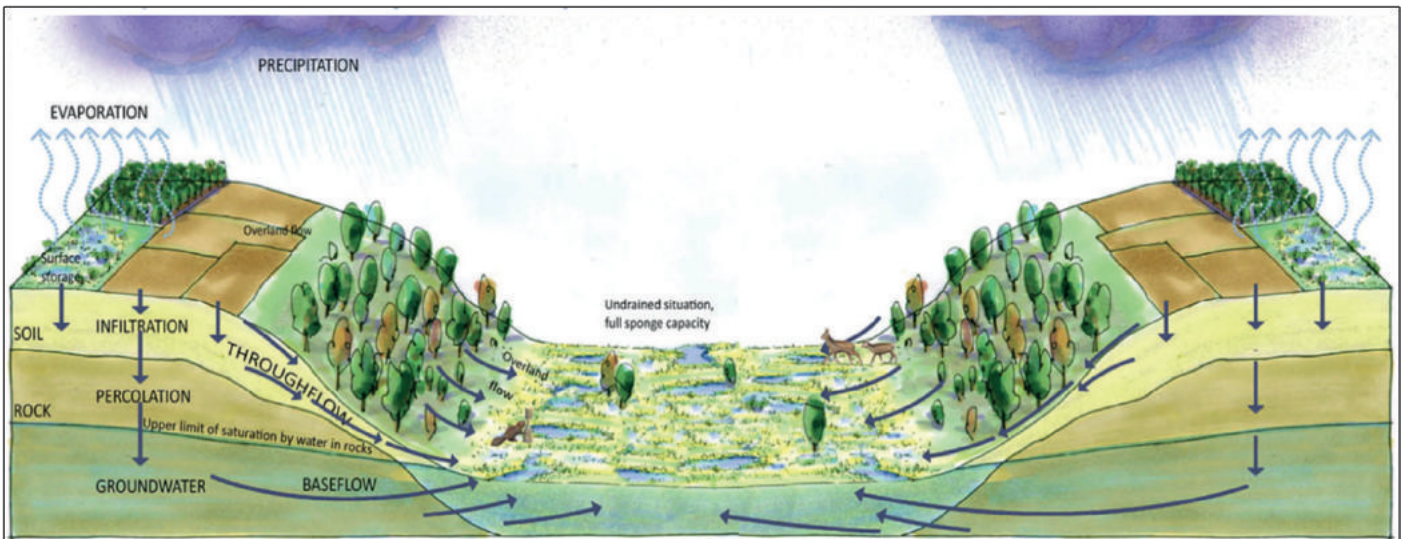
Natural freshwater ecosystems are needed to build our resilience to the impacts of climate change

Intact and restored freshwater ecosystems and the ecological flows supporting them⁶ – are crucial to supporting the water cycle and many human activities. **It is therefore vital to reserve water for nature and keep it in the landscape to mitigate the effects of water scarcity and droughts.**

Wetlands for instance, including peatlands, act as natural sponges which help retain water and cope with floods, heatwaves and droughts, as represented below. They can function as a managed aquifer recharge which increases soil moisture, enhances the drought resilience of plains and therefore helps safeguard agricultural production.⁷



Current drained landscape



Restored sponge function by blocking drainage

Illustration of the functioning of a sponge wetland (Wetlands International).

Free-flowing rivers recharge vast networks of groundwater which are increasingly strained by growing human demand, and their floodplains support healthy organic soils, water retention, and improved water quality (EEA, 2019). Free-flowing rivers transport sediment to healthy floodplains and deltas, which help reduce risks from floods, droughts and sea level rise, and provide critical habitats including for migratory species.

Small water bodies, such as natural ponds in meadows or forest landscapes, also have the capacity to store stormwater and interact with groundwater, contribute to microclimate regulation, and can store carbon through sediment accumulation. But their ability to deliver such ecosystem services is also affected by climate change (IGB, 2023).

The risks of maladaptation⁸

Against the backdrop of rising temperatures and declining rainfall, many voices have been raised in Southern Europe to ask for new, large water infrastructure projects such as artificial reservoirs for water storage (France, Italy) or water diversion schemes (Spain, Greece). In many cases, such projects are examples of maladaptation⁹ as in the long run they often result in large water losses through evaporation. They may also create lock-ins of water-intensive agricultural practices that are difficult to change, as well as exacerbate inequalities (between those who benefit from such infrastructure projects and those who do not), and alter the natural process of aquifer recharge through flow diversion (WWF, 2023). In too many cases there might not even be enough water to fill them.

OUR ASKS FOR A WATER RESILIENT EUROPE

Adapting to climate change requires a better integration between EU policies, so that sectoral policy goals (such as the necessary development of renewable energy, or the management of flood risks) do not result in the deterioration or impede the recovery of freshwater ecosystems, which are crucial to climate adaptation. The 2012 [Water Blueprint for Europe](#) already warned that **if water is not sustainably managed, water use may exceed the ability of our environment to supply enough water**. The Blueprint stressed the need for a comprehensive management of Europe's water resources, addressing all users of water as well as water's interactions with other resources, such as land and energy. In order to improve consistency between EU policies and accelerate the transition towards a water resilient Europe, we recommend:

A fully implemented EU Green Deal

Continuing to fully implement the EU Green Deal is a prerequisite for building a resilient Europe, mitigating climate change, halting biodiversity loss and limiting resource use, including water. In the short term, this means that the European Parliament and Council need to adopt an ambitious EU Nature Restoration Law, as this Law is essential to halt biodiversity loss in Europe and restore freshwater ecosystems and species (including free-flowing rivers and their floodplains). In the medium-term, the European Commission must urge Member States to ensure consistency between the National Restoration Plans and their National climate adaptation strategies, and to use their National Restoration Plans for implementing nature-based climate change adaptation.

A new Water and Climate Resilience Law

Under the lead of DG Environment, the law should set legal requirements for ecosystem-based adaptation, including:

- **A requirement for Member States to create EU Natural Water Reserves to protect critical water supplies and their catchments in water-stressed areas.** The Reserves would cover groundwater and natural lakes, rivers, floodplains, wetlands (including peatlands) which are necessary for drinking water provision, water retention in soils and coping with floods and droughts.

While the Birds and Habitat Directive and the Marine Strategy Framework Directive ([Directive 2008/56/EC](#)) provide an EU legal framework for the protection of the land (including surface water bodies such as lakes and rivers) and sea area, they do not account for groundwater bodies. In the EU Natural Water Reserves:

- » Abstractions, drainage and damming/creation of impoundments would be either prohibited or limited i.e. only to drinking water provision and sustainable farming, which would prevent maladaptation actions.
- » Defining and implementing ecological flows based on up-to-date climate scenarios would be mandatory, and water allocation schemes adapted.
- » Restoration of the natural processes and functions of all the ecosystems in the Reserves would be mandatory.
- » EU Natural Water Reserves would be recognised and defined as integral components of the EU's water infrastructure so that they become eligible for EU funding or financing traditionally earmarked to grey infrastructure (European Regional Development Fund, EU Solidarity Fund).
- » Member States would need to identify relevant protection and restoration actions needed to ensure that those Reserves fulfil all their environment and climate economic services. Those actions would be considered of overriding public interest.

The Water and Climate Resilience Law should require Member States to identify Natural Water Reserves based on up-to-date assessments of climate risks (i.e the EU Climate Risk Assessment tool). Such Natural Water Reserves already exist under different forms in Spain and in most basins in metropolitan France (see box below); the concept could be expanded.

Natural Water Reserves would complement the Water Framework Directive's requirement for Member States to identify water bodies used for drinking water abstraction, making sure they meet the objectives set in Article 4 and in the Drinking Water Directive, and ensure their necessary protection (Article 7). Indeed the WFD mentions that "Member States may establish safeguard zones for those bodies of water" (Article 7(3))¹⁰ – but are not obliged to do so. Natural Water Reserves would also complement the EU Nature Restoration Law to be adopted at the end of 2023, as it does not address groundwater bodies specifically and might not specifically address the rewetting of wetlands, either.

RIVER, LAKE AND GROUNDWATER NATURE RESERVES IN SPAIN

River nature reserves were introduced into Spanish Water Law (Article 42) in 2005, "with the purpose of preserving, without alterations, those sections of rivers with little or no human intervention." In 2022, the government added lake and groundwater nature reserves, so the country now counts 289 river, lake and groundwater nature reserves covering more than 3,848 km of watercourses. Currently, the law states that no new water concessions can be granted in the reserves (except in case of emergency for urban water supply), and that no activities shall be permitted that might affect the hydromorphological conditions and other natural properties of the river. It is not yet clear what this will imply for the new groundwater reserves.

GROUNDWATER RESERVES IN THE LOIRE-BRETAGNE RIVER BASIN, FRANCE

In 2022, at the request of the Regional Health Agency, the Loire-Bretagne river basin authorities created aquifers reserved for drinking water supply, where additional abstractions are only permitted for drinking water. New abstractions for uses other than drinking water may only be accepted under limited conditions: to replace existing abstractions in the same reservoir and the same sector, and in the absence of a quantitative deficit of the water table. Management plans should then be drawn up with relevant stakeholders, in order to specify which other abstractions may be permitted in the future, and to recommend actions to preserve the quantitative balance of the aquifer, based on foreseeable trends in water abstraction and their medium-term impact on the water table level. Similar schemes exist in most French river basins.¹¹

Read more about these examples in [WWE, 2023, page 38](#)

- **An EU Sponge Facility** to foster and finance the restoration and/or preservation of natural sponge landscapes which promote water retention and the replenishment of aquifers, such as floodplains, wetlands, peatlands, natural water retention measures¹², or hybrid (green and grey) measures when they serve restoration and protection. This facility could include a mixture of EU funds (earmarked within the next Multiannual Financial Framework, or from a new fund such as an EU Nature Restoration Fund); private and/or philanthropic finance; and loans and credits from financial institutions such as the European Investment Bank. The establishment of an EU Sponge Facility, boosting the implementation of nature-based solutions, would enhance the implementation of the EU Biodiversity Strategy, EU Nature Restoration Law and the Water Framework and Floods Directives.

- **An EU framework for the development of water efficiency and water abstraction targets** by economic sector, following the recommendation of the 2012 EU [Blueprint to Safeguard Europe's Water Resources](#).¹³ These targets should be developed at river basin level, based on up-to-date assessments of climate risks (i.e the EU Climate Risk Assessment tool) and should cover all water users, including industry, agriculture and households. The Commission should develop – together with Member States and stakeholders – a common EU methodology for setting these water efficiency and water abstraction targets. The 2011 [EU Roadmap to a Resource Efficient Europe](#), for instance, recommended that water abstraction should stay below 20% of available renewable water resources. Such targets would also feed into the global corporate [science-based targets for nature](#) process.

Full enforcement of environmental law, in particular the EU Water Framework Directive

Various breaches to the Water framework Directive have been [reported by NGOs](#) in recent years, but the European Commission has frequently not followed up or infringement procedures have lagged for years. The European Commission needs to take appropriate legal action and flag breaches when reviewing the third River Basin Management Plans and second Flood Risk Management Plans. In particular, the European Commission should ask Member States to thoroughly justify any exemptions used in River Basin Management Plans from the requirements for having periodically updated registers and authorisations for water abstraction, as well as exemptions from the requirement of applying the principle of cost recovery for water services.¹⁴ The European Commission post-2024 should increase its legal resources in order to be able to deal with the legal backlog. Also, there should be no leniency for Member States not achieving the Water Framework Directive's deadline of reaching good water status by 2027. The European Commission should be prepared to screen how foreseen exemptions in the Directive are used and justified, to make sure that they are not used on a systematic basis but only to account for exceptional circumstances, as foreseen by the legislation and its Common Implementation Strategy.

Climate Adaptation proofing of all new EU legislative and non legislative acts

The European Commission should work with the European Environmental Agency to regularly develop reference climate change scenarios which are frequently updated and communicated to the wider public (i.e. +1.5°C in 2030), based on the latest science, and develop adaptation pathways accordingly. Based on those scenarios, the European Commission should create an independent scientific body – or “Adaptation panel” – which should be asked to provide public scientific advice and a public opinion to the European Commission on the coherence of the Commission's measures or legislative proposals with the adaptation trajectory of the EU. This Panel should screen all impact assessments, fitness checks, and major evaluations and issue a “positive”, “positive with reservations”, or “negative” opinion to the political level of the Commission in the same way as the Regulatory Scrutiny Board does. Most importantly, the Commission should be bound to provide public justifications if it decides not to follow the Adaptation panel's scientific advice. This panel could be created as a separate chamber under the European Scientific Advisory Board on Climate Change (ESABCC), but with dedicated scientific experts on climate adaptation.

Eliminate subsidies for activities which are harmful to river morphology, natural water retention in the landscape, water quality and groundwater

For instance, in the agriculture sector, the European Commission should apply the recommendations of the Court of Auditors 2021 report on “Sustainable water use in agriculture”, which concluded that CAP funds are more likely to promote greater rather than more efficient water use (ECA, 2021). This adds to the fact that environmental and resource costs are not well reflected in water pricing for agricultural use. Rather than putting in place incentivising water prices, Member States tend to have lower water prices for agriculture which do not reflect the pressures caused by the sector on water quantity and quality. In 2026, the Commission should evaluate (interim evaluation) the impact of rural development funding and market support on water use in the post-2020 CAP. When preparing the post-2027 CAP, the European institutions should eliminate CAP payments that support water-intensive crops or the increase of irrigation in areas at risk of or suffering from water stress; and continue the phase-out of CAP payments for land drainage for agriculture, while introducing new payments for natural water retention on arable lands. The Commission should also ask Member States to better enforce water pricing obligations and the polluter-pays principle under the Water Framework Directive in order to stop the “hidden subsidies” created by disproportionately low water prices for farmers.

Another example is the energy sector, river fragmentation created by hydropower plants reduces the capacity of rivers to mitigate the impact of droughts or floods (Grill G. et. al., 2019). Therefore, new hydropower developments should no longer be eligible for State Aid, EU funds including the Connecting Europe Facility (funding for Projects of Common Interest), when they contravene the achievement of existing environmental legislation and the Do No Significant Harm principle, and also harm water resilience.

Water should also be at the heart of the EU Industrial Policy so that industrial sectors whose supply chains are highly dependent on water (mining, digital, etc.) have obligations to reduce their water use.

ANNEX – OVERVIEW OF CURRENT EU POLICIES ADDRESSING WATER RESILIENCE

Currently, water management and climate change impacts are mostly covered by three EU policy streams: water policy (mainly the Water Framework Directive and Floods Directive), climate policy and biodiversity policy. However, those EU policies only partially address water resilience.

EU water policy

The Water Framework Directive (WFD) and Floods Directive: the cornerstone of water management

The River Basin Management Plans required by the WFD ([Directive 2000/60/EC](#)) constitute a relevant framework to address many of the impacts of climate change, in particular floods, drought and water scarcity issues. Of special relevance are the WFD's aims to ensure a good quantitative status of groundwater bodies; achieve good ecological status of surface water bodies¹⁵ (Art 4); as well as the requirements to identify significant pressures from abstraction and flow variations (Art 5); and to set up controls over the abstraction of fresh surface water and groundwater, and impoundment of fresh surface water (Art. 11(3)(e)). Although climate change is not named per se in the WFD, one of the purposes of the directive is to “contribute to mitigating the effects of floods and droughts” (Article 1(e)), and the planning process defined by the WFD provides scope for integrating climate change in the list of anthropogenic pressures affecting water status, as well as for establishing appropriate measures balancing water availability and demand. The economic principles of the WFD also offer instruments to manage water uses, such as water pricing or the polluter pays principle although they have been largely neglected by Member States. The no.24 guidance document on “river basin management in a changing climate” (CIS, no 24), is currently being updated under the WFD Common Implementation Strategy to reflect the current science and good practices.

Climate change is leading to both water quantity and quality issues, and yet the WFD does not address quantity issues in surface water bodies since quantitative management is the exclusive competence of Member States in the EU Treaties. This means climate change impacts on water levels in rivers or lakes (for instance, the higher frequency of droughts) are only required to be dealt with by the WFD if the analysis of pressures shows that measures are necessary to attain good ecological or chemical status of surface waters, or the quantitative status of groundwater. However, the impacts of climate change on the ecological status of water are too often neglected in the analysis of pressures, and even when they are analysed, it still takes a long time until the planning of relevant measures actually happens. Also, integrating climate change into the implementation of the WFD often triggers requests from Member States to postpone the achievement of good status or to set lower environmental objectives.

Climate change is specifically mentioned in [Directive 2007/60/EC](#) on the assessment and management of flood risks. The impacts of climate change on the occurrence of floods is one of the key issues to consider for Member States in their preliminary flood risk assessment prior to Flood Risk Management Plans. But this only covers one of the impacts of climate change.

The Drinking water Directive: protecting drinking water resources

The revised [Directive 2020/2184](#) on the quality of water intended for human consumption entered into force in 2021 and included measures to reduce water leakages (Art 4(3)); and risk assessment and management of the catchment areas for drinking water abstraction (Art 7).

EU policies on water efficiency: improving water savings

Several pieces of EU legislation aim at reducing the water intensity of some sectors. For instance, [Regulation 2020/741](#) on minimum requirements for water reuse, which will enter into force in 2023, was also presented as an instrument to lower the pressure on water bodies. Stronger water efficiency

provisions could also see the light in the revised Industrial Emissions Directive. However, those measures do not tackle the overall water demand and can even in some cases justify higher abstractions.

EU climate policy

The EU Climate adaptation strategy lacks concrete targets and deadlines

The European Commission adopted its new EU strategy on adaptation to climate change on 24 February 2021 ([COM/2021/82 final](#)). In comparison to mitigation, the EU was quite late in tackling this topic, as the first white paper on adapting to climate change was only published in 2009, followed by a first EU strategy on adaptation to climate change in 2013. Although the European Parliament called for binding and quantifiable goals on adaptation, both at EU and Member State level ([2020/2532\(RSP\)](#), 2020), the revised adaptation strategy failed to include legally binding targets and specific measures. It does have a specific section on water and includes relevant commitments, in particular to “improve coordination of thematic plans and other mechanisms such as water resource allocation and water permits”, and “help guarantee a stable and secure supply of drinking water by encouraging the incorporation of the risks of climate change in risk analyses of water management”, but concrete targets and deadlines are missing ([EEB](#), 2021).

The EU Climate Law

The European Climate Law ([Regulation \(EU\) 2021/1119](#)) requires Member States to adopt and implement national adaptation strategies and plans, and to promote nature-based solutions and ecosystem-based adaptations (Article 5(4)). Also, when assessing the progress made by Member States on adaptation (expected on 25 October 2023 and then every five years), the Commission shall take the necessary measures in accordance with the Treaties if it finds that Union measures are inconsistent with ensuring progress on adaptation or if the progress is insufficient (Art 6(3)). In addition, the Commission shall assess whether its own draft measures or legislative proposals, including budgetary proposals, are consistent with ensuring progress on adaptation. However, in case they are not, the Commission can still go ahead, provided that they can present the reasons (Art 6(4)). The Better Regulation guidelines also oblige the European Commission, when conducting impact assessments, to assess policy options on the basis of how consistent they are with the objectives of the European Climate Law ([EC](#), 2021). This is also reflected in Tool #36 of the Commission's Better Regulation Toolbox ([EC](#), 2023). Those principles ought to be applied by the Commission's services when preparing proposals and their fulfilment should be duly assessed by the Regulatory Scrutiny Board, but it is questionable whether this is really the case.

EU biodiversity policy

EU Biodiversity policies

The EU Biodiversity Strategy for 2030 lists climate change as one of the five main direct drivers of biodiversity loss and recognises that nature is a vital ally in the fight against climate change ([COM/2020/380 final](#), 2021). The EU Nature Restoration Law, proposed by the European Commission in 2022, sets climate change adaptation as one of its main goals ([COM/2022/304 final](#)). Specific targets for river connectivity and restoration of the natural functions of floodplains are a way to address the water-related aspects of adaptation (Art.7). But there seems to be a missing link between biodiversity conservation and restoration objectives on the one hand, and the water quantity and quality that they require on the other. The EU Biodiversity Strategy recommends that Member State authorities should review water abstraction and impoundment permits to implement ecological flows in order to achieve WFD objectives and plans to provide technical support to Member States in 2023. However, the Commission has indicated that no formal guidance document will be issued under the WFD CIS, so how this support will be provided is not yet clear. Although the WFD requires Member States to include measures to achieve the conservation objectives of the Birds and Habitats directive in their River Basin Management Plans, this requirement is poorly implemented ([Wetlands international](#), [EEB](#), 2022), which means that water is not managed in a way that ensures sufficient and good quality water for protected ecosystems.

REFERENCES

1. Living Rivers Europe is a coalition of six environmental and angling organisations: WWF's European network, the European Anglers Alliance, European Environmental Bureau, European Rivers Network, Wetlands International Europe and The Nature Conservancy.
2. Reduce harmful incentives by at least \$500 billion per year (CBD).
3. van der Ent, R. J., H. H. G. Savenije, B. Schaefli, and S. C. Steele Dunne (2010), Origin and fate of atmospheric moisture over continents, Water Resour. Res., 46, W09525.
4. 72% of aquifers had levels below normal in August 2023 in France (BRGM, 2023).
5. Xu, T.; Weng, B.; Yan, D.; Wang, K.; Li, X.; Bi, W.; Li, M.; Cheng, X.; Liu, Y. Wetlands of International Importance: Status, Threats, and Future Protection, Int. J. Environ. Res. Public Health 2019, 16, 1818.
6. Defined as the "amount of water required for the aquatic ecosystem to continue to thrive and provide the [ecosystem] services we rely upon" (European Commission, Ecological flows in the implementation of the Water Framework Directive, Technical Report, 2015- 086).
7. Pinke, Z., Long decline in soil moisture urges restoration of European wetlands. 2022: Global Land Programme.
8. Defined as any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli; or an adaptation that does not succeed in reducing vulnerability but increases it instead (UNFCCC).
9. Defined by the IPCC as "actions that may lead to increased risk of adverse climate-related outcomes, including via increased greenhouse gas emissions, increased or shifted vulnerability to climate change, more inequitable outcomes, or diminished welfare, now or in the future."
10. which is already done in Spain and in most basins in metropolitan France (Loire Bretagne, Adour Garonne, Seine Normandie, Rhin Meuse and Rhône Méditerranée Corse).
11. Loire-Bretagne, Adour Garonne, Seine Normandie, Rhin Meuse and Rhône Méditerranée Corse.
12. Examples are provided under <http://nwrp.eu/>.
13. The Blueprint recommends the setting of water efficiency targets, but we think targets should also cover abstraction to ensure a net reduction of water use.
14. The use of such exemptions is well documented for agriculture – see EU Court of Auditors, Sustainable water use in agriculture: CAP funds more likely to promote greater rather than more efficient water use, 2021 – Recommendation 1. It also extends to other sectors, such as hydropower and navigation.
15. including in terms of supporting environmental river ecological flow regimes requirements and hydromorphology.

Living Rivers Europe is a coalition of six environmental and angling organisations: WWF's European network, the European Anglers Alliance, European Environmental Bureau, European Rivers Network, Wetlands International Europe and The Nature Conservancy. Living Rivers Europe puts forward a strong vision of healthy river ecosystems flourishing with wildlife to the benefit of society at large, the economy and sustainable development in Europe. To make this vision a reality and give our water ecosystems a real future we stress the importance of an ambitious implementation of the EU Water Framework Directive and related policies. Together with our members and supporters, representing a dedicated movement of over 40 million people across Europe, we aim to ensure that the loss of aquatic wildlife is halted and reversed and that European waters are managed more sustainably.

