EUROPEAN
COMMISSION

Brussels, XXX
[…](2025) XXX draft

REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

on the implementation of the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC)
Third river basin management plans
Second flood risk management plans

1. INTRODUCTION

Water is essential for life and thus for our society and economy. However, the EU's water resources continue to be under severe pressure due to structural mismanagement, unsustainable land use, hydro-morphological changes, pollution, climate change, increased demand for water and urbanisation. As outlined in the European Climate Risk Assessment[1], climate change is exacerbating these pressures and increasing water-related risks in the form of more frequent, prolonged droughts and extreme precipitation that threaten Europe's food security, public health, ecosystems, infrastructure and economy. Just in recent months, Europe has once again witnessed the significant impacts of extreme water-related events that have caused tragic losses of human life and many billions of euro of damage. In 2024, prolonged droughts were experienced in several Mediterranean countries, particularly affecting central and southern Italy, north-western Spain, Greece, and were followed by severe floods which affected most of central and eastern Europe, and later on also in Italy and Spain.

Sustainable water management, enshrined in the key EU Water Framework Directive[2] (WFD) and the Floods Directive[3] (FD), is at the heart of the response to the triple planetary crisis of climate change, biodiversity loss and pollution. It plays a pivotal role in strengthening the EU's resilience.

The adoption of this implementation report, a legal obligation of the Commission[4], comes at a crucial moment, when the realisation of the importance of water, both at EU and global level, is increasing in all parts of society. A large majority of the EU population participating in the most recent Eurobarometer survey on the environment[5] considers pollution, overconsumption and climate change as the main threats to water and support additional EU measures to address water problems in Europe. They also think that almost none of the main economic sectors are doing enough to use water efficiently. These concerns have also been reflected by EU institutions and stakeholders. The European Parliament called for the development of an EU Water Strategy[6]. The European Economic and Social Committee and the Committee of the Regions have been calling for an "EU Blue Deal"[7]. In the strategic agenda 2024–2029[8], the European Council committed to strengthening "water resilience across the Union" in the next mandate. The private sector and civil society organizations have also been increasingly calling for further action at EU level on water as demonstrated by the letter addressed to the highest level of the Commission[9]. At global level, the UN Water Conference of March 2023

[1] EEA (2024), European climate risk assessment. No 1/2024, https://www.eea.europa.eu/publications/european-climate-risk-assessment.
[2] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1).
[3] Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks (OJ L 288, 6.11.2007, p. 27).
[4] As required by Article 18 of the WFD and Article 16 of the FD.
[5] https://europa.eu/eurobarometer/surveys/detail/3173
[6] EP Resolution of 15 September 2022 on the consequences of drought, fire, and other extreme weather phenomena: increasing the EU's efforts to fight climate change (2022/2829(RSP)) and subsequent EP Plenary debates.
[7] The EESC Umbrella Opinion "A call for an EU Blue Deal" CCMI/209 (25 October 2023).
[8] https://www.consilium.europa.eu/en/european-council/strategic-agenda-2024-2029/
[9] Joint-Letter-on-the-Water-resilience-Initiative_-Final-Version-1.pdf (euase.net).

during which the EU presented its vision for a water-resilient world by 2050, provided strong momentum at international level.
Responding to these calls, the 2024-2029 Political Guidelines for the next College announced the adoption of a **new European Water Resilience Strategy** to strengthen Europe's water security by preserving water quality and quantity in the EU and beyond, enhancing the competitive innovative edge of our water industry, and addressing the root causes of water challenges, including pollution, biodiversity loss, and the impacts of climate change.

This report aims to convey to the Council, the new Parliament as well as the other EU institutions and stakeholders the latest evidence on the state of water, the pressures water resources are under and Member States' measures to achieve the environmental objectives set in these two Directives. It provides a comprehensive mapping of water challenges in the EU that will inform the development of the future Water Resilience Strategy.

In addition, given the 2027 deadline set under the WFD to reach good status for all EU waters, this report presents a unique opportunity to take stock of the situation on the ground and put forward recommendations to Member States to step up their efforts. The same applies for flood risk management objectives under the FD that are more relevant than ever.

As this is the first implementation report since the adoption of the European Green Deal, Member States' progress has been assessed under the prism of achieving the EU's biodiversity, zero-pollution and climate goals and an increasingly cleaner and circular economy. Therefore, the report is structured around the contribution of Member States' actions to tackling these three interrelated emergencies.

The report is based on the Commission's assessment of the third river basin management plans (RBMPs) and second flood risk management plans (FRMPs) for 2022-2027[10] as prepared and reported by Member States. These plans are based on monitoring data collected between 2016 and 2021. This means that while published after the Green Deal, the report largely depicts the situation before the Green Deal. It does not capture the expected benefits of the groundbreaking initiatives that the Green Deal has set out.

The report is accompanied by a series of Commission staff working documents providing an EU overview of the implementation of the WFD, related directives and the FD. The report includes individual Member State assessments and country-specific recommendations.

These recommendations will serve as the foundation for a structured dialogue with Member States to significantly improve implementation of these laws, building on the myriad of excellent practices and achievements across the EU.

Freshwater and marine ecosystems are interconnected. Riverine pollution, disruption to sediment flows and water shortages all have a very strong impact on the health of marine ecosystems, particularly the coastal ones, and the viability of social and economic activities that depend on them, such as transport, fisheries, aquaculture or tourism. The Marine Strategy Framework Directive (MSFD) complements the WFD and relies on the water-related and other EU policy instruments to achieve its objectives. To accelerate effective implementation, the Commission aims to encourage a more integrated and coherent approach in implementing

[10] The first RBMPs covered the period 2009-2015. The second RBMPs and the first FRMPs covered the period 2016-2021.

freshwater and marine water legislation, in line with a 'source-to-sea' approach[11]. For that reason, this report has been developed in close coordination with and is published at the same time as the assessments of the second programme of measures (PoMs) taken by the Member States under the Marine Strategy Framework Directive (MSFD). Particular attention has been paid to highlighting coordination efforts in the implementation of the Directives and the linkages between action under the WFD and the achievement of the objectives under the MSFD.

2. RBMPs AND FRMPs: STATE OF PLAY IN ADOPTION AND REPORTING

Although Member States were required to adopt their plans by March 2022, regrettably, many adopted them late. This led the Commission to launch legal proceedings against all Member States in breach of the legal requirements. Even at the time of finalising this assessment, not all Member States had adopted their RBMPs and FRMPs and submitted them to the Commission[12]. For that reason, this report does not cover those countries or regions.

The 7 Member States not included in the current RBMP assessment are Bulgaria, Cyprus, Greece, Malta, Portugal, Slovenia and Ireland, and the 6 Member States not included in the current FRMP assessment are Bulgaria, Cyprus, Greece, Malta, Portugal and Slovakia. The data from their RBMPs and FRMPs will be published once submitted electronically on the European Environment Agency's (EEA) Water Information System for Europe (WISE) platform[13]. In addition, the Commission will prepare country-specific staff working documents with an assessment of the plans and country-specific recommendations. The data will also become part of the 2026 Zero Pollution Monitoring and Outlook Report, next to informing work related to the implementation of the EU's biodiversity and climate adaptation strategies.

3. METHODOLOGY AND CONSIDERATIONS ON DATA COMPARABILITY

Both RBMPs and FRMPs are comprehensive documents, consisting of hundreds to thousands of pages of information, published in national languages. Their assessment, entailing processing extensive information in more than 20 languages, is a very challenging and complex task. The quality of the Commission assessments relies on the quality of the Member States' reports. Incomplete or deficient reporting can lead to wrong and/or incomplete assessments.

[11] Source-to-sea approach refers to the establishment of governance that increases collaboration and coherence across the source-to-sea system and reduces alteration of key flows (water, pollution, sediment, materials, biota, ecosystem services) resulting in measurable economic, social and environmental improvement across freshwater, coastal, nearshore, transitional and marine environments. It considers the entire source-to-sea system – stressing upstream and downstream environmental, social, and economic linkages and stimulating coordination across sectors and segments.

[12] By the cut-off date to be considered for this report's assessment of 30 September 2023, Bulgaria, Cyprus, Greece, Malta, and Portugal failed to submit their RBMPs and FRMPs e. Slovenia and Ireland only reported FRMPs, and Slovakia only reported its RBMPs. Spain did not report RBMPs for the Canary Islands.

[13] https://water.europa.eu/freshwater.

The lack of electronic reporting[14] or the partial submission of electronic reporting by some Member States[15] in the WISE database[16] made the Commission's assessment even more challenging. This situation is partly due to the technical difficulties faced by the Member States when using the EEA reporting platform and partly to Member States' insufficient progress in digitalising water data. As a result, the Commission had to base its assessment on data and information that was partly available in digital, easily comparable format and partly extracted manually from the RBMPs, the FRMPs and other relevant sources.

In addition to the above, when reading this report it should be noted that the comparability of the results deriving from the assessment of the current RBMP 2022-2027 with those of the previous period 2016-2021 is hampered due to different factors as follows.

1) Some Member States have significantly reclassified and re-delineated part of their water bodies, leading in some cases to a substantial change in their overall number.
2) Significant improvements in the geographic coverage of monitoring systems across Member States have reduced the number of bodies with a previously unknown status.
3) The number of substances included in Member States' monitoring programmes has also increased[17], and some quality standards have become stricter since the previous report.

Different national approaches to designating and monitoring the pollutants that are not of concern to all the EU but just to some places (known as 'river basin specific pollutants') can have a strong impact on the assessment status. In addition to a common set of pollutants, some countries monitor many more than others.

4. WHAT IS THE STATE OF EU WATERS?

This report's assessment of the third RBMPs covers 20 Member States. This represents around 90% of the EU's surface water bodies (rivers, lakes and transitional and coastal waters) and a similar percentage of the EU's groundwater bodies (or approximately 97 000 surface water bodies and 15 000 groundwater bodies).

Further insights into the status of Europe's water bodies is provided in the EEA State of European Waters 2024 Report[18] published on 15 Oct 2024. It should be noted however that that the EEA report covers a slightly smaller (19 EU Member States) and different subset of Member States since it is only based on electronic data submitted to WISE.

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[14] The format for electronic reporting and reporting guidance was drawn up jointly by Member States, stakeholders and the Commission as part of a collaborative process called the 'Common Implementation Strategy' (CIS).

[15] For Italy, Germany and Belgium, the analysis was based on partly complete electronic reporting, complemented by data in PDFs submitted for some RBMPs. As Denmark, Finland, Hungary, Luxembourg, Poland, Slovakia and Sweden either did not submit data electronically or did so at a much later date after the PDFs were submitted, their analysis has only (or mostly) been based on the PDF documents.

[16] https://water.europa.eu/freshwater.

[17] Not only the 12 new priority substances added in 2013 have been monitored and used by some Member States for status assessment (although the compliance date is only 22 December 2027), but also substances from the original 33 priority substances that had not been previously covered, even though they should have been.

[18] EEA Report 7/2024, *Europe's state of water 2024. The need for improved water resilience* (https://www.eea.europa.eu/en/analysis/publications/europes-state-of-water-2024).

Member States' level of knowledge of the state of water bodies has increased. There have been significant improvements in the geographic coverage of monitoring systems across most Member States and in the number of biological and chemical water-quality elements covered. Moreover, the number of priority substances[19] monitored by Member States has increased[20], and quality standards have in some cases become stricter since the last report. Nevertheless, there are still gaps in monitoring certain substances in some Member States[21], while differences in the methodologies Member States apply when monitoring priority substances can make results not always comparable. This means that Member States know much more about the features and the state of their water bodies. Issues that were once unknown or undetected are now being uncovered, and sometimes these discoveries point towards bad water status[22]. Nevertheless, over two decades after the entry into force of the WFD, 3 out of the 20 assessed Member States still have a vast majority of their surface water bodies with an unknown chemical status. These are Lithuania (94.6% of surface waters in unknown status), Denmark (92.5%) and Estonia (82.7%).

At the same time, the assessment clearly shows that, although the WFD prescribes some common elements for monitoring, there are great differences in Member States' **practices, monitoring frequency and parameters** measured. This is a major challenge in terms of comparability of the status assessment.

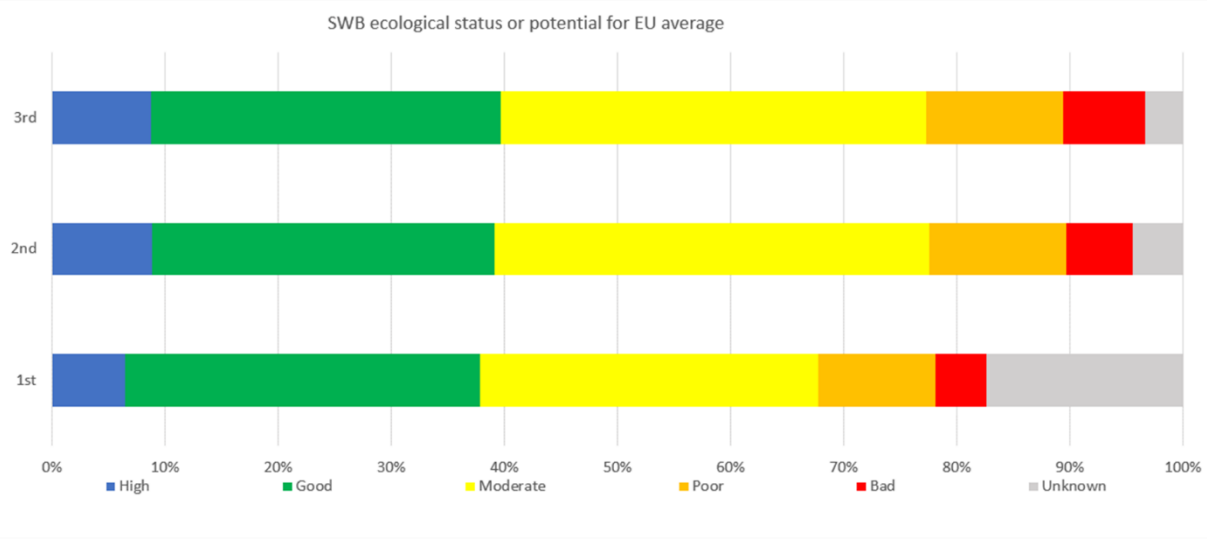
In addition to these differences and despite the progress, **major gaps in ecological status monitoring remain**, in terms of both spatial coverage and assessment confidence. An equally revealing observation is that Member States, rather than empirically monitoring the parameters, very often use expert judgement or extrapolation to group of waterbodies subject to similar pressures.

Surface Waters: what is their ecological status or ecological potential?

The Commission concludes that based on the data mainly from 2016-2021 reported in the third RBMPs for 2022-2027, 39.5% of surface water bodies in Europe appear to be in good ecological status or ecological potential[23]. This figure is about the same (39.1%) as that reported by the same countries in the second RBMPs for 2016-2021, which mainly used data from 2009-2015[24]. This is consistent with findings from the Nitrates Directives, which show that at EU level, 36% of rivers, 32% of lakes, 31% of coastal waters, 32% of transitional waters and 81% of marine waters were reported as eutrophic[25].

[19] Substances presenting a significant risk to or via the aquatic environment, listed in the Environment Quality Standards Directive, as amended in 2013 and in the Groundwater Directive.
[20] Not only the 12 new priority substances added in 2013 have been monitored and used by some Member States for status assessment (although the compliance date is only 22 December 2027), but also substances from the original 33 priority substances that had not been previously covered even though they should have been.
[21] The substances omitted the most are short-chain chlorinated paraffins. Other substances not included in all monitoring programmes included diuron, quinoxyfen and tributyltin. Feedback from the RBMPs indicated that the main reason that these substances were omitted was related to technical challenges in the analysis or lack of available standards to complete the analysis.
[22] Monitoring pollution presence across sediments and living species for long-term trend assessment continues to be varied within and across Member States and largely incomplete.
[23] Good ecological potential is the objective to be reached by a heavily modified or artificial water body.
[24] Data extracted from WISE Freshwater (https://water.europa.eu/freshwater).
[25] See the Report of the European Commission on the implementation of the Nitrates Directive from 2021, p. 5, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC1000.

Figure 1 – Change in the ecological status assessment of EU surface water bodies from the first, second and third RBMPs (Source: WISE freshwater and PDF data mining)



While some limited improvements have been observed in some Member States, other Member States reported either no improvement or a significant reduction in the percentage of surface water bodies with good or high ecological status or ecological potential. The significant reduction in the number of water bodies in good ecological status or ecological potential was reported by Poland (-22.9%), Lithuania (-15.5%), Slovakia (-14.9%), Czechia (-13.3%), Croatia (-9.1%) and Estonia (-7.6%). This reduction may be largely due to a much better knowledge and an improved understanding of the state of their water bodies compared to the previous cycle.

Despite the overall limited improvement in the percentage of water bodies in good or high ecological status, it is encouraging to note that, compared to the two previous RBMP cycles (2009-2015 and 2016-2021), there has been an improvement in certain biological and chemical quality parameters. This may reflect the positive effects of implementing previous measures. In particular, the recent EEA's State of Waters 2024 report[26] shows that the status of phytoplankton, benthic flora and invertebrates has improved in lakes, and there are visible improvements in benthic invertebrates in rivers and transitional waters. However, while noteworthy, these partial improvements are not sufficient to improve the overall state of water bodies and to reduce the associated risks to health and environment. Furthermore, these improvements tend to be overlooked since the WFD applies a 'one out, all out approach', which implies that a water body can only achieve good status if all biological and chemical quality elements are assessed at least as 'good'.

These partial and overlooked improvements may explain, at least partially, why the ecological status assessment in the third RBMPs (covering 2022-2027) shows an overall limited improvement in comparison to the previous report assessing the second RBMPs (covering 2016-2021). This lack of progress can also be due, besides the above-mentioned increase in knowledge and accuracy, to a possible increase in the underlying pressures, inadequate measures and insufficient progress in putting the planned measures in motion.

[26] https://www.eea.europa.eu/en/analysis/publications/europes-state-of-water-2024

Against this background, it is not surprising that most Member States indicated that they do not expect to achieve good ecological status or ecological potential for all their water bodies by 2027.

Member States have made significant progress in setting reference conditions[27] for different water types. Such conditions are essential to set benchmarks and measure the impacts of human activities on biological, physico-chemical and hydro-morphological elements. In addition, huge progress has been made at EU level thanks to the intercalibration exercise[28], which harmonises the national classifications of good ecological status. However, there is still a **harmonisation gap at EU level**, which hampers comparing the overall status assessment.

Surface Waters: what is their chemical status?

Achieving good chemical status is an indicator for moving **towards zero pollution.** As in the previous reporting cycle, there is a very big difference between surface and groundwaters, with the latter being often better protected.

The information provided in the third RBMPs shows that, in 2021, only 26.8% of surface waterbodies were in good chemical status, as compared to the 33.5% in 2015. This appears to show a significant deterioration.

While the share of surface waters in good status has remained stable or slightly improved in some Member States compared to 2015, it has decreased and, in some cases, significantly decreased in some others. The latter is the case, for example, in Lithuania (-98.7%), Finland (-49.5%), Poland (-34.2%), Czechia (-29.9%), the Netherlands (-29.8%), Slovakia (-26.3%), Croatia (-11.4%) and Latvia (-10.6%).

This deterioration may be largely due to improved monitoring and better knowledge of 'ubiquitous persistent, bioaccumulative and toxic' substances (uPBTs), major changes in the delineation of water bodies and more stringent standards for some substances.

Regarding **surface waters**, the significant lack of compliance is largely due to uPBTs. The most common of these compounds are **mercury** and **polycyclic aromatic hydrocarbons** (PAHs). These are already present in large quantities due to legacy pollution and new pollution that continues to enter the aquatic environment via atmospheric emissions from the combustion of fossil fuels and other fuels. Another major group of uPBTs are **polybrominated diphenyl ethers** (PBDEs), which are heavily used in paints, plastics, foam furniture padding, textiles, building materials and industrial processes. These 'usual suspects' have a very dominant effect on the classification of chemical status, because the environment has a limited ability to self-purify itself of these very frequent and persistent pollutants. Without these uPBT compounds, 81% of surface waterbodies would have reached good chemical status, which is roughly the same percentage as in the previous reporting cycle.

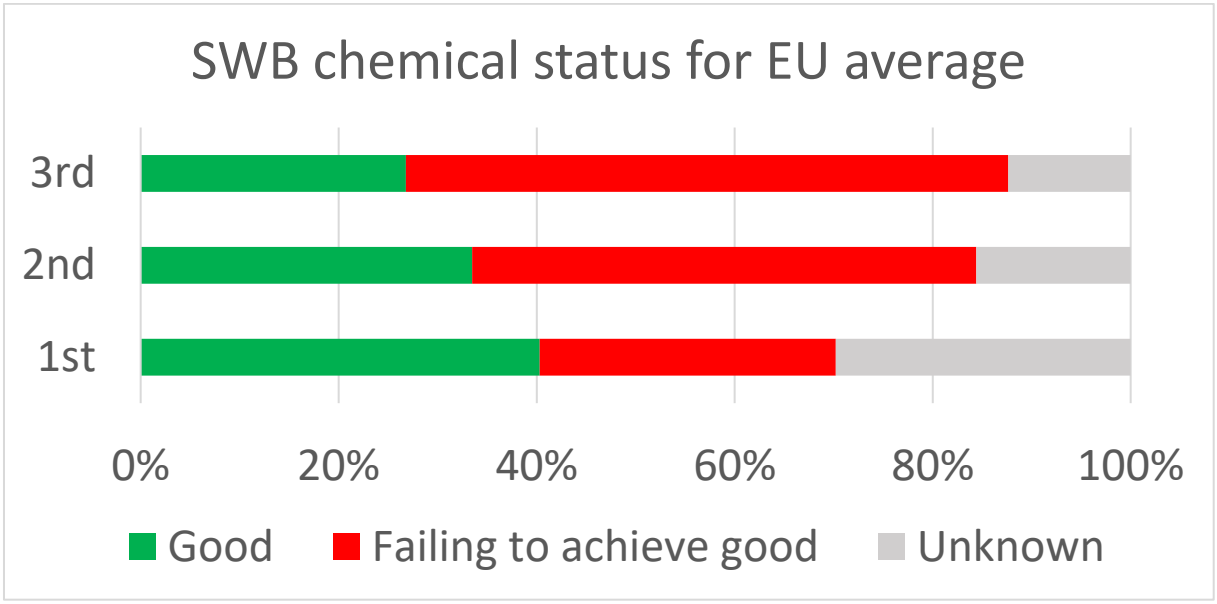
The other substances that cause Environmental Quality Standards' exceedance and the failure to achieve good chemical status vary across Member States. However, **metals** (e.g. lead,

[27] The WFD defines the reference conditions for an ecological system as the conditions that prevail in the absence or near absence of human disturbance.
[28] OJ L, 2024/721, 8.3.2024: http://data.europa.eu/eli/dec/2024/721/oj.

cadmium, nickel which are typically linked to mining waste, municipal and industrial wastewater, urban run-off), **biocides** and **pesticides** (tributyltin, chlorpyrifos), and **some persistent organic pollutants** (e.g. hexachlorobenzene) continue to commonly feature in the top of the list of substances leading to failure even if the use of some of these substances has been banned since many years.

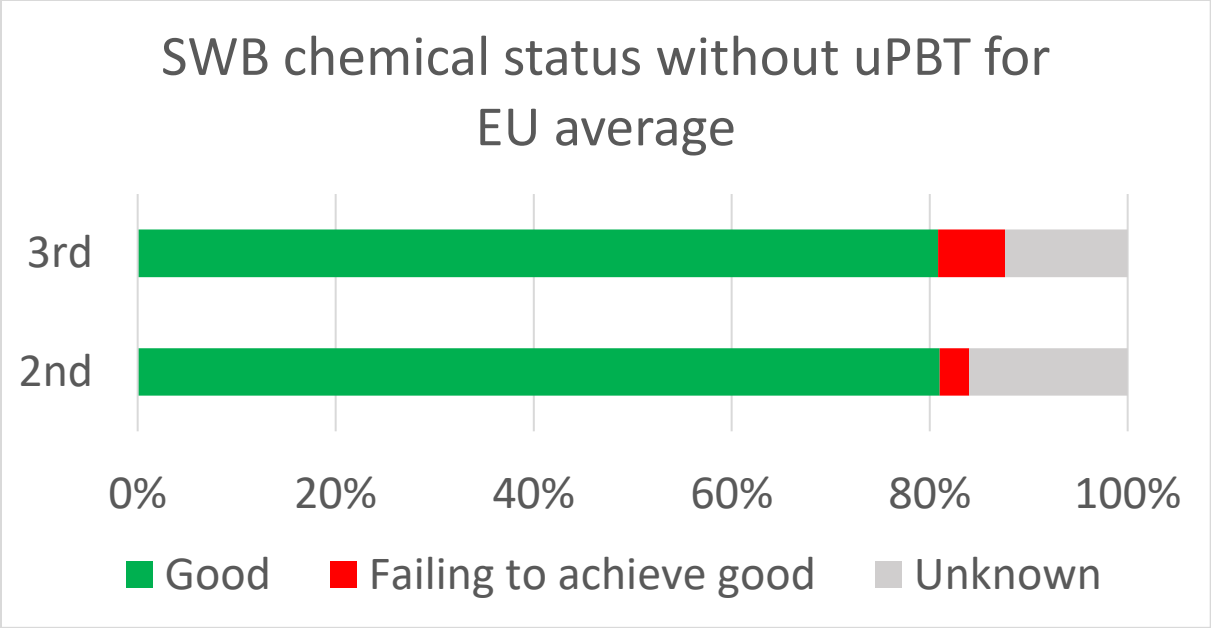
It should be noted that uPBTs also continue to be responsible for the failure to meet the good environmental status objective for contamination under the MSFD for 80% of the sea area[29].

Figure 2 – Change in the chemical status assessment of EU surface water bodies from the first, second and third RBMPs (all substances, including uPBTs) (Source: WISE freshwater and PDF data mining)



[29] Report from the Commission, First 'zero pollution' monitoring and outlook, 'Pathways towards cleaner air, water and soil for Europe' (COM(2022) 674 final, 8.12.2022).

Figure 3 – Change in the chemical status assessment of EU surface water bodies from the second and third RBMPs (without uPBTs) (Source: WISE freshwater and PDF data mining)



Groundwater bodies: what is their chemical status?

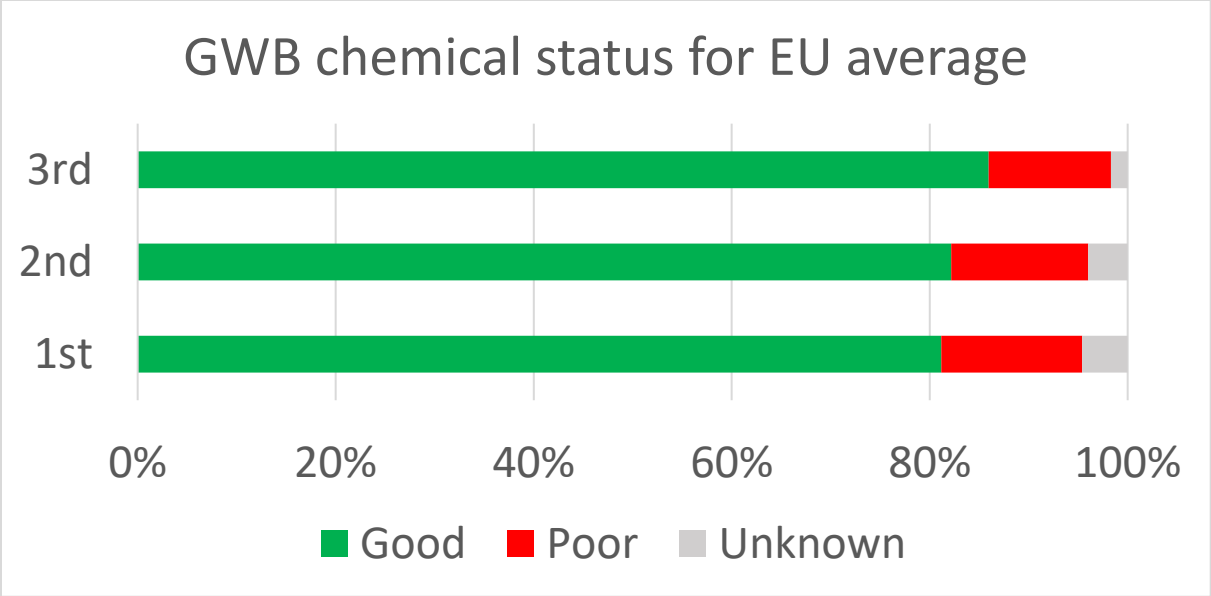
Regarding **groundwater bodies**, in 2021, based on the information provided in the 3rd RBMP, 86% of ground water bodies were in good chemical status. This is a slight improvement as compared to 82.2% for the same subset of countries in 2015.

The most commonly reported pollutants leading to poor chemical status are **nitrates**[30]. These mainly come from intensive agriculture and livestock farming through the improper or excessive use of fertilisers and slurries/manures, all of which contain nitrogen and phosphorous. This is the case for 17 out of the 20 Member States. Only Estonia, Latvia and Lithuania do not report nitrates as causing chemical status failure in their groundwaters. **Pesticides** and their metabolites are responsible for the failure to achieve good chemical status in nine Member States (Austria, Belgium, Czechia, Denmark, Estonia, France, Luxembourg, the Netherlands and Spain). **Phosphate** and **ammonium**, which also, mainly come from intensive agriculture and livestock farming, also lead to poor chemical status with a particular impact in countries such as Slovakia and Czechia.

Other substances mentioned as leading to a smaller percentage of groundwater bodies with poor chemical status (i.e. less than 10% according to some Member States) include naturally occurring pollutants, such as chloride, sulphate, potassium, iron and total organic carbon. Industrial solvents, PAHs, methyl tert-butyl ether (MTBE - primarily used as a fuel additive) and anionic surfactants (common in soaps and detergents) are less commonly cited as the cause of poor status (but were reported by Finland, France, Italy and Latvia).

[30] According to the EEA, the average nitrate concentration in EU groundwater bodies has not changed significantly since 2021 (EEA, 2023).

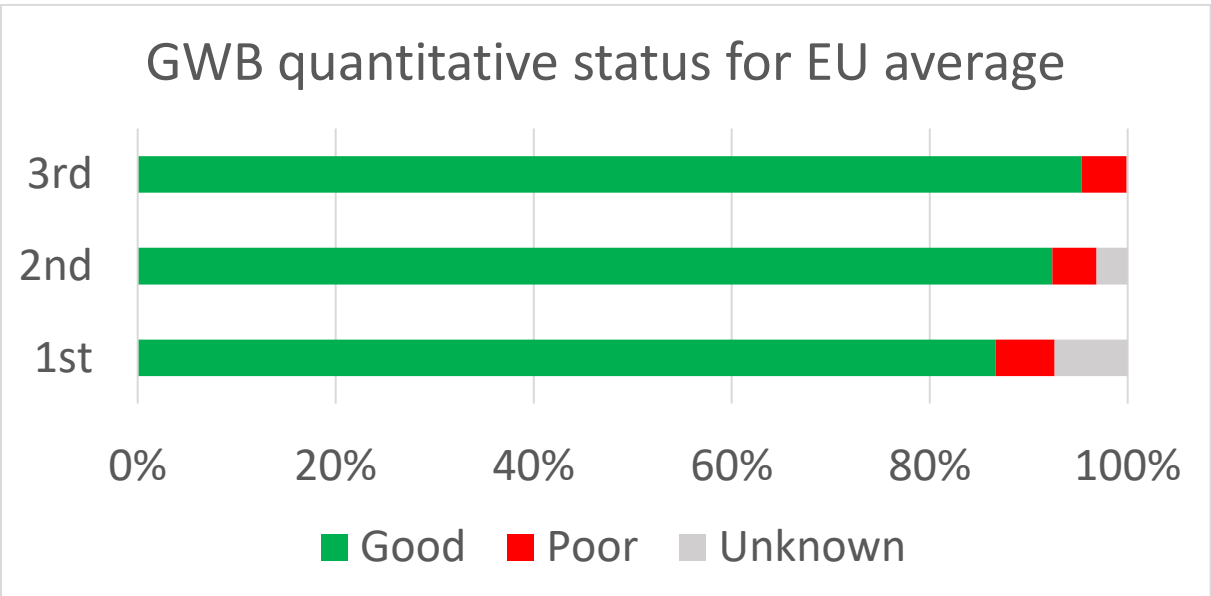
Figure 4 – Change in the chemical status assessment of EU groundwater bodies from the first, second and third RBMPs (Source: WISE freshwater and PDF data mining)



Groundwater bodies quantitative status – have they sufficient water?

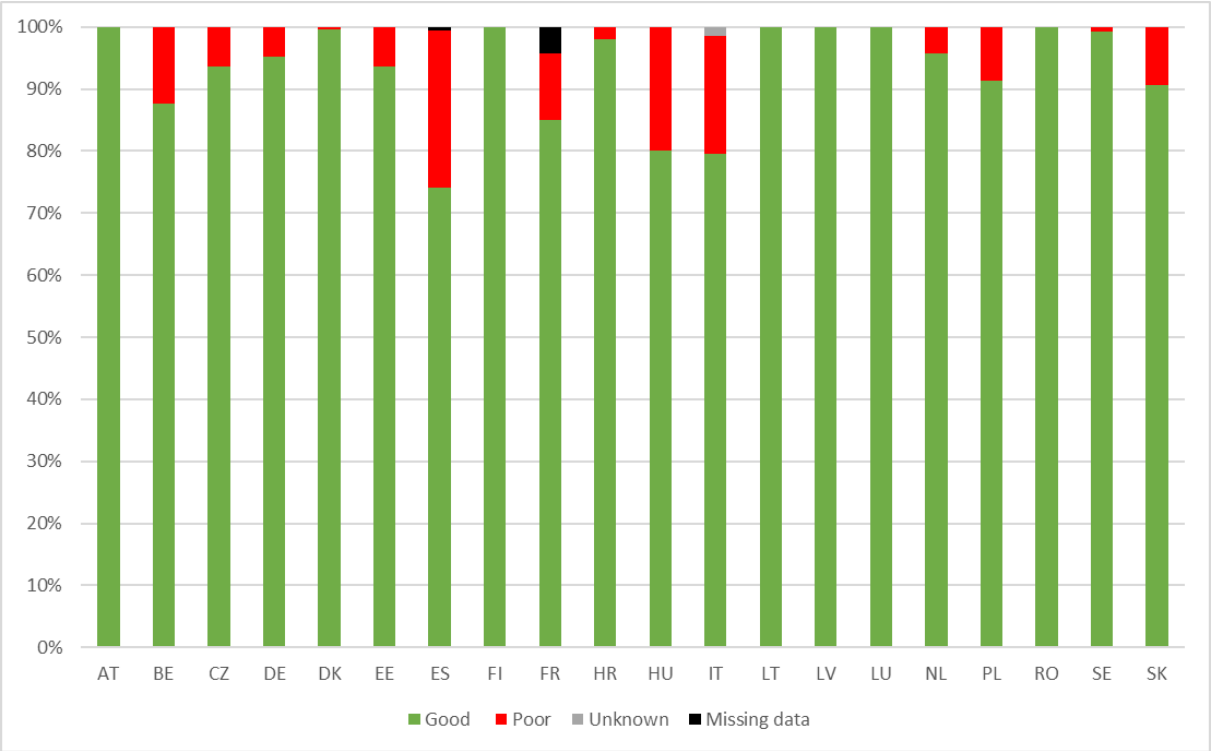
Comparing the quantitative status of groundwaters in the same set of Member States, it is encouraging to observe a small improvement: 95% of groundwater bodies were reported in good status in 2016-2021 against 92.4% in 2009-2015. The reported data show that the replenishment of groundwater bodies, a big proportion of the EU's reserves, appears mostly secured. Although this may indicate that climate change has not (yet) affected the EU's groundwaters, it needs to be stressed that not all Member States adequately consider the needs of groundwater-dependent ecosystems, and that this picture taken in 2021 does not capture the impacts of subsequent years which have been the driest this century.

Figure 5 – Change in the quantitative status assessment of EU's groundwater bodies from the first, second and third RBMPs (Source: WISE freshwater and PDF data mining)



Nevertheless, there are significant geographical differences across the 20 Member States covered in this report (see Figure 6).

Figure 6 – Overview of the quantitative status of groundwater bodies by Member State in 2021



In 84% of the identified cases groundwater bodies failed to achieve good quantitative status because more water is abstracted from the aquifer than its natural capacity to recharge. Other reasons for failing good quantitative status are saline intrusion (25%), impacts on aquatic ecosystems connected to groundwater bodies (20%) and dependent terrestrial ecosystems (9%).

Almost all reporting Member States[31] carried out a **water balance assessment**[32] for the third RBMPs, with most assessing long-term trends too. However, contrary to the provisions of the Groundwater Directive, when assessing the quantitative status of groundwater bodies, Member States do not always consider the needs of the **groundwater associated aquatic ecosystems** and **groundwater dependent terrestrial ecosystems**. This is a major gap since human activities that alter groundwater levels can significantly affect the status of surface water bodies or damage precious ecosystems, such as wetlands.

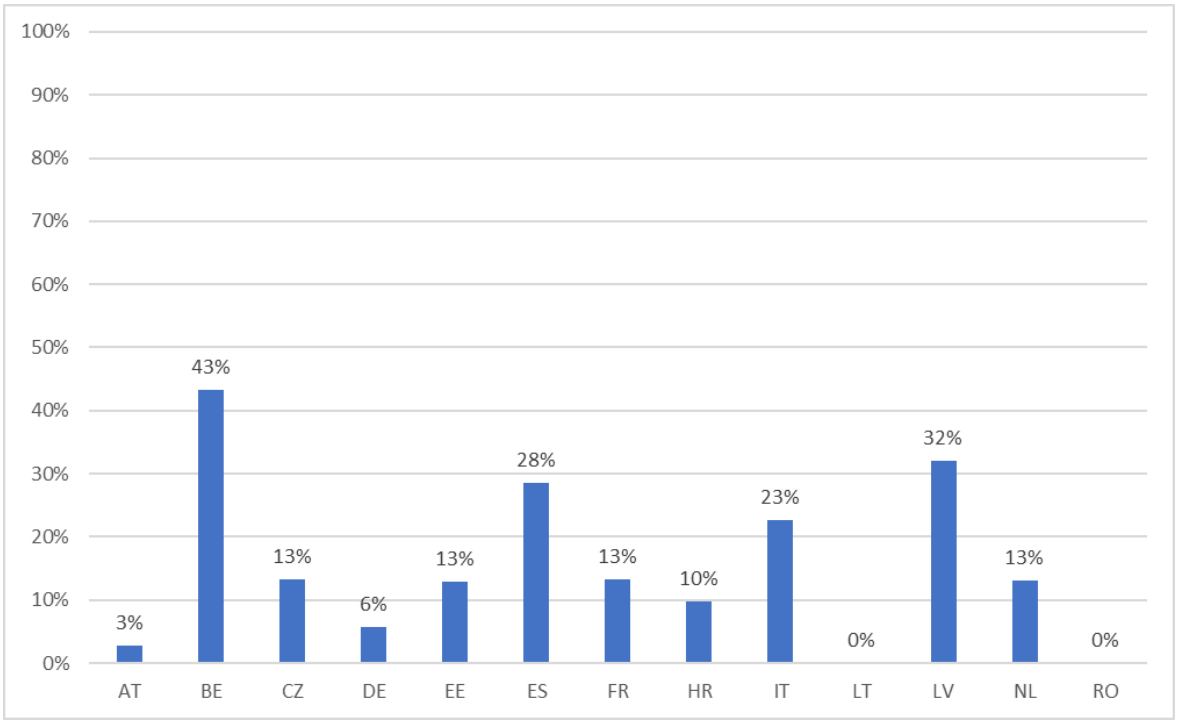
Throughout the past three implementation cycles, Member States have reported a high proportion of groundwaters as being in good quantitative status. However, this sits in contrast with the increase in water scarcity across the EU and the observed increased reliance on groundwater bodies as a source of supply for public services and irrigation, which leads to

[31] Except Luxembourg where the exercise is ongoing.
[32] A water balance is the amount of water available for allocation, counted as inflows minus outflows in a given river basin or sub-basin.

increased abstractions[33]. This stresses the importance for Member States to better apply agreed methodologies to assess the quantitative status by duly factoring in seasonal variations and the accelerating impacts of climate change, while relying less on historical trends and fully considering the role of groundwaters in supporting rivers and ecosystems. An assessment that is only based on groundwater levels is insufficient[34]. The situation also indicates, as suggested by the EEA, that there could be a need to revise existing methodologies.

Significantly, several Member States expect the situation to worsen as they predict that the number of groundwater bodies at risk of not achieving good quantitative status by 2027 will increase in some cases quite substantially (see Figure 7 below).

Figure 7 – Percentage of groundwater bodies that Member States report as at risk of not achieving good quantitative status by 2027 (only countries with e-reporting)



- **Box 1: Why is the EU still so far from reaching the WFD's objectives?**
- Over the years, implementation of the WFD has gradually improved the knowledge and understanding of the state of the EU's rivers, lakes, transitional waters, coastal waters and groundwaters. This improved knowledge partly explains some of the trends outlined above.
- However, as well documented in the 2019 Fitness Check of the Water Framework Directive[35], many factors have played and continue to play a role in hindering effective WFD implementation and contributed to the overall slow progress since its

[33] According to the EEA, the groundwater share of total water abstraction has increased from 19% in 2000 to 23% in 2019.
[34] See Common Implementation Strategy Guidance note No. 18.
[35] SWD(2019) 439 final, p. 116.

inception. These factors include:

- late identification or underestimation of the pressures as well as of the efforts needed to create a governance framework fit for specific conditions in Member States;
- an insufficient reduction in the overall pressures on waterbodies, particularly linked to diffuse pollution (unlike the relative success in dealing with point source pollution) and habitat degradation (for which restoration measures to address pressures from the past, including hydro-morphological changes and legacy pollution, would be much needed);
- the slow introduction of effective policy measures as Member States' programmes of measures are often insufficiently based on the analysis of pressures and impacts, and there is a tendency to rely on easy technological fixes that address point source pollution but leave other sources of pollution largely untargeted;
- limited consistency across relevant policies as good status of water bodies also critically depends on integrating water objectives into other policy areas, such as agriculture, energy and transport;
- measures to achieve good water status are not prioritised unlike other economic activities;
- a predominant reliance on basic measures[36] instead of additional supplementary measures implemented at a scale sufficient to reach the WFD objectives;
- the time for nature to respond to measures before the expected results are produced;
- the increasingly felt impacts of climate change (i.e. water temperature increase);
- the lack of funding and constraints in administrative capacity.

5. GOVERNANCE AND CROSS-CUTTING ASPECTS

Proper governance is essential for the smooth operation of complex water management systems in Member States, which rely on the involvement of many different administrative levels and affected parties. All Member States have designated their **competent authorities** for each river basin district (RBD). These districts often involve several authorities with responsibilities for different aspects of the RBMPs. Similarly, all Member States have designated competent authorities for the Floods Directive (FD). These may differ from the ones appointed under the WFD, and, in certain Member States, management units identified in line with the FD are not the same as the RBDs.

As required by the FD, many Member States indicate that the FRMPs and the RBMPs have been developed in a coordinated and sometimes simultaneous manner[37]. The vast majority of Member States has carried out a joint consultation of their RBMPs and the FRMPs[38], and a few have integrated the two plans into a single plan. The situation among Member States is clearly more uneven for the MSFD's programme of measures. Only a few Member States show evidence of clear coordination in developing the WFD and MSFD's programmes of measures in terms of process, content and consistency in response to the same pressures. Similar evidence of little coordination emerges from the parallel MSFD reporting on the

[36] In particular, the Urban Wastewater Treatment Directive and the Nitrates Directive, which appear as 'basic measures' in the WFD programmes of measures.
[37] Overall, 15 of the 21 Member States provided strong evidence in their FRMPs that coordination was ensured with the WFD, while the other 6 had at least some evidence.
[38] Regarding joint consultations of draft FRMPs and RBMPs, 15 Member States reported having carried them out, compared to 13 Member States in the previous cycle.

second programme of measures[39]. This is therefore an area where Member States need to intensify efforts to implement a **source-to-sea approach.**

Coordination mechanisms, while in place overall, mainly appear insufficient in ensuring there are complete synergies and the appropriate consistency across different government levels (e.g. insufficiently harmonised approaches to implementing the WFD at subnational levels). Coordination with other sectoral policies (e.g. agriculture, energy) is also insufficient, particularly in relation to measures needed to address the most significant pressures. Notwithstanding the fact that proper implementation and enforcement of the WFD and other environmental legislation is the responsibility of environmental competent authorities, it is essential to ensure a more effective integration of WFD objectives in sectoral policies and funding instruments (such as the CAP). This entails aligning the interventions supported by the CAP with the measures in the RBMPs.

Most Member States have made notable efforts to boost **public participation and the active involvement of stakeholders** in developing their RBMPs and FRMPs using a variety of consultation channels and mechanisms. Overall, a broad range of stakeholders was involved in most Member States. However, many plans do not explain how the input received was taken on board and whether those consulted were informed of how their views were considered. Such transparent communication would increase collective ownership of the plans.

Pressures

The most significant pressures for surface water bodies[40] in all reporting Member States are: **pollution from atmospheric deposition** (affecting 59% of waterbodies), **hydro-morphological changes** (57%) stemming from drainage and irrigation for agriculture, hydropower, flood protection, navigation or drinking water supply, and **pollution from agriculture** (32%). Other main pressures across the EU are **urban wastewater discharges** (14%), **discharges not connected to the sewage system** (9%) and **abstraction** (9%) for multiple purposes. Other pressures most commonly identified in the RBMPs are pollution from **urban run-off** (8%) **storm overflows** (5%) and **discharges from industrial installations** (6%). It should be noted that the same water body can be subject to multiple pressures, so the total does not add up to 100%.

Regrettably, 13% of the EU's water bodies also continue to be affected by unidentified anthropogenic pressures, so there is still room for increasing knowledge in this area. No significant pressure is only identified in 10% of the reported water bodies.

The pressure from **invasive alien species –** those of both EU[41] and national concern – on freshwater and marine ecosystems in Europe is increasing, as demonstrated by a number of

[39] Commission Report to the Council and the European Parliament on the Commission's Assessment of the Member States' Programmes of Measures as updated under Article 17 of Directive 2008/56/EC COM(2025) 3 and related Staff Working Document SWD(2025) 1

[40] Based on WISE freshwater data covering 18 of the 20 Member States for which the data are available electronically as of June 2024.

[41] As listed in Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species.

reports[42]. Despite the direct impact these species can have on achieving good ecological status, this pressure seems to be understated and is only identified in 2.2% of the reported waterbodies. Information on invasive alien species and the measures taken to tackle the problem is very often missing or not very detailed in the RBMPs.

While 71% of the EU's **groundwater bodies** are reported as not being subject to any significant pressures, almost 30% of them is affected by a range of pressures. This particularly includes **diffuse agricultural pollution** (e.g. pesticides and fertilisers), which affects 59% of the impacted groundwater bodies, **abstraction for public water supply** (25%), **abstraction for agriculture** (22%), **industrial use** (12%) and **other purposes** (12%). Diffuse pollution from other sources, notably **urban run-off** (16%) and **discharges not connected to sewerage network** (6%), are also major pressures, as are pollution from **contaminated or abandoned industrial sites** (17%) and **legacy pollution** (13%).

Programmes of measures

The picture is nuanced for the analysis of the programmes of measures (PoMs) that Member States are obliged to draw up to prevent or limit those pressures.

A considerable number of measures announced in the second RBMPs were not implemented. As in the past, insufficient funding of measures has been identified as the most significant obstacle (86%), followed by unexpected delays (81%), the lack of appropriate national mechanisms, such as national regulations and other measures not yet adopted (70%), and governance issues (57%). Difficulties to acquire the land required to implement certain measures is also regularly raised as a key challenge.

The third PoMs presented in the 2022-2027 RBMPs show that Member States continue to have different approaches to their design and reporting. The PoMs often contain a fairly long set of measures but do not seem to feature several key elements. Most notably, there's no clear assessment of the gap to be bridged to reach good status. There is also insufficient information on the prioritisation of the measures based on the required cost-effectiveness analysis. The costs and the financing of the planned measures are often missing. Since Member States often argue that they face funding difficulties, it suggests that the resources needed to implement the PoMs are not always secured upfront. This weakens the effectiveness of the PoMs.

6. TACKLING THE TRIPLE PLANETARY CRISIS

6.1. TOWARDS ZERO-POLLUTION RIVERS, LAKES, COASTAL WATERS AND GROUNDWATERS

6.1.1 What is being done to combat pollution from agriculture?

Diffuse pollution from **agriculture** is one of the main pollution pressures on EU water bodies identified by all reporting Member States in almost all RBDs and affects both surface and groundwater bodies. This is essentially due to unsustainable land management practices and

[42] For instance, freshwater invasive non-native species have increased seven-fold in number over the last 100 years according to Cid, N. and Cardoso, A. C., 2013, European freshwater alien species, 'Global Freshwater Biodiversity Atlas' (atlas. freshwaterbiodiversity.eu).

excessive and improper use on one hand of fertilisers and slurries/manures which contain nitrogen leading to nitrates in water, on the other hand of pesticides and other hazardous substances. As set out in Section 2 above, nitrates are the biggest pollutant in groundwater bodies, and they also cause surface water bodies to become eutrophic. This is consistent with the findings on the nutrient loads across EU marine regions that show that for all regions, except the Black Sea, the largest source of nitrogen in the sea comes from agriculture[43]. A more nuanced picture is seen for phosphorous, where the largest contributor for almost all the marine regions is wastewater, and agriculture is the second largest.

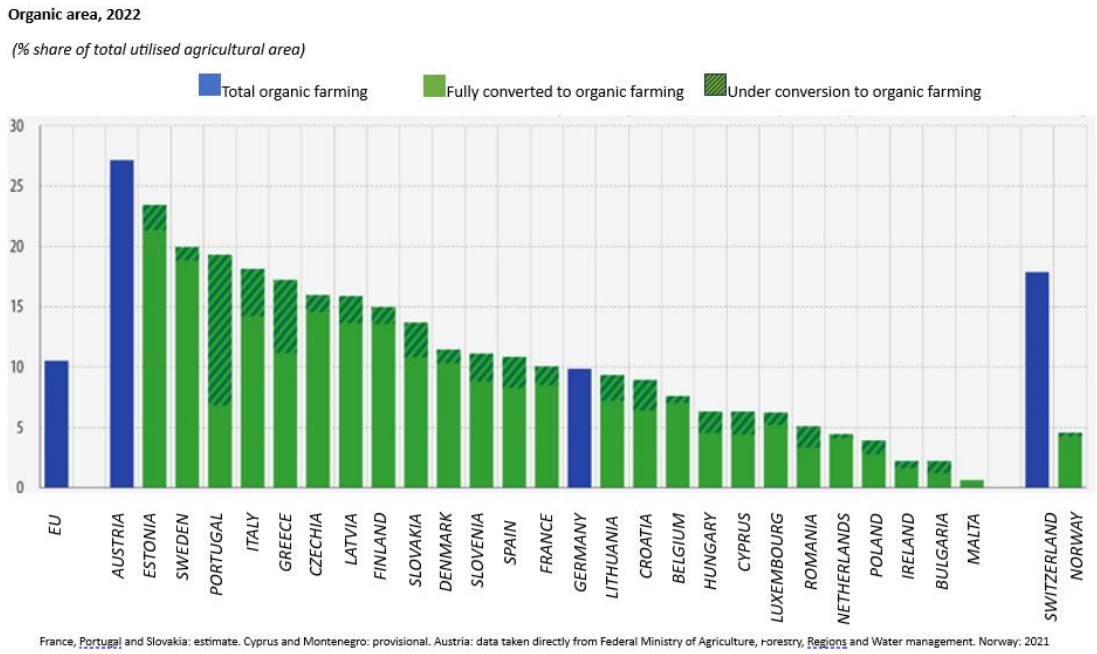
Although considerable improvements have been observed compared to the 1990s and most Member States and farmers have made significant efforts to reduce nutrient losses in waters, the freshwater quality data show that results have stagnated. This indicates that, to reignite a downward trend in nutrient concentrations, more radical measures are needed, which could be politically difficult to adopt. Current measures are still not sufficient to reach the objectives of the Nitrates Directive and the WFD, almost 35 and 25 years after their adoption, respectively. This can also be seen in the marine environment, notably in the Baltic Sea, the marine region with the highest proportion of coastal waters where nutrient conditions is a problem (58%). Eutrophication also occurs in the southern North Sea, along the north-western coast of France and near riverine outflows in the Mediterranean Sea. At the same time, widespread oxygen-depleted areas are observed in the Baltic Sea and the Black Sea, which are caused by eutrophication, natural conditions and higher water temperatures due to climate change impacts.

This stagnation can be explained by the fact that there is limited progress in most Member States in developing **quantitative gap assessments** as a basis to determine how to reduce the load of **nutrients** and **pesticides**. The Commission made this recommendation during the previous cycle, but few Member States have presented the nutrient load reductions and even fewer Member States have reported having carried out assessments of the effectiveness of the measures taken so far.

At the same time, a clear and encouraging trend is **the steady increase in the share of farmland under organic farming in the EU**, which usually results in lower levels of nutrient and pesticide pollution. However, the pace of adoption varies across Member States, ranging from close to 30% of total farming production in Austria to less than 1% in Malta (see Figure 8 below).

[43] Report on the implementation of the Marine Strategy Framework Directive (europa.eu).

Figure 8 – Share of the total utilised agricultural area under organic farming in 2022 by Member State (Source: EUROSTAT 2024)[44]



Basic measures are usually in place, but not all Member States assess whether the planned measures will be sufficient to gradually achieve good status. Where gap assessments have been made, Member States report that the measures will 'not fully' close the gap needed to reduce nutrient and pesticide pollution by 2027. This is consistent with the Commission's previous findings, including under the Nitrates Directive.

In addition, mandatory measures are limited to those set out under relevant EU legislation[45] and applicable requirements (cross-compliance and greening) under the common agriculture policy (CAP) 2014-2022.

Many Member States seem to impose restrictions on the use of pesticides mainly when it is necessary to improve the status of water bodies used for drinking water abstraction. Such mandatory requirements for farmers stemming from the implementation of the Water Framework Directive can be supported by the CAP under the so-called WFD payments, but this instrument remains under-utilised[46].

Several voluntary measures have been in place often supported through the CAP, notably through agri-environment climate commitments[47] (AECC) and other relevant measures

[44] EU organic farming: 16.9 million hectares in 2022 - Eurostat (europa.eu).

[45] In particular, the Nitrates Directive, the Regulation on placing of Plant Protection Products on the Market (Regulation (EC) No 1107/2009), the Sustainable Use Directive (2009/128/EC).

[46] Four Member States (Austria, Denmark, Luxembourg and Spain) supported these payments under the Rural Development Programmes (2014-2022) and five Member States have included such payments in their CAP Strategic Plans 2023-2027 (Austria, Denmark, Italy, Luxembourg and Spain). These payments have mostly focussed on restrictions on / ban on fertilisation and pesticide use. in drinking water protected areas, and nitrogen reducing measures in coastal catchment areas in the case of DK.

[47] Payments for multi-annual commitments for environment and climate friendly agricultural practices which go beyond the baseline of mandatory requirements.

included in the Rural Development Programmes (2014-2022) developed by Member States. However, these measures, together with the basic measures implemented, have not been sufficient to reduce pressures from nitrates and pesticides. This might have been due to a variety of factors including intrinsic limitations in the design of the voluntary measures in questions, the fact that measures were not sufficiently programmed by Member States, limited uptake by farmers, or limited uptake in the most affected areas.

Based on the submitted information, the agricultural measures announced under the second RBMP have not all been implemented as planned. The reported challenges include insufficient funding and delays.

With respect to the CAP 2023-2027, an increased contribution to tackling pollution from nitrates and pesticides can be expected[48]. It includes enhanced conditionality[49] standards, such as strengthened soil management requirements (e.g. crop rotation/ diversification, buffer strips) and a new requirement linked to controls on diffuse sources of pollution from phosphates. The instruments available under rural development funding[50] (AECCs including organic farming, support for investments, WFD payments, training / advice, innovation and cooperation) continue to be available and have been complemented with eco-schemes which support environment/climate friendly practices; Member States have to dedicate at least 25% of EAGF funding to these schemes[51]. Support from eco-schemes and AECC covers inter alia improved nutrient management[52] and the sustainable use of pesticides[53].

No Member State is using **thresholds for nutrient concentrations** to assess the good ecological status of surface waters, and only some are determining the required **load reduction** upstream in the relevant river basin. As outlined earlier, this also has an impact on achieving the objectives set in the Marine Strategy Framework Directive since, based on the data reported by the Member States under Article 8 of the MSFD in 2018, 87% of the sea area did not achieve the good environmental status objective for eutrophication.

6.1.2 What is being done to combat pollution from other sectors?

Pollution from sectors such as **urban settlements, industry or energy** also poses a threat to the aquatic environment and to human health via the environment.

Basic measures to deal with pollution from these sectors are generally in place. These include authorisation and permitting systems to control wastewater point source discharges, registers of wastewater discharges, the prohibition or restriction of all direct discharges to groundwater,

[48] See "Mapping and analysis of CAP strategic plans" (2023-2027) (file:///C:/Users/faltech/Downloads/mapping%20and%20analysis%20of%20cap%20strategic%20plans-KF0323354ENN%20(3).pdf).

[49] Conditionality links the full receipt of CAP support to the compliance of farmers and other beneficiaries with basic standards concerning the environment, climate change, public health, plant health and animal welfare. The basic standards encompass statutory management requirements (SMRs) and standards of good agricultural and environmental conditions of land (GAEC standards).

[50] European Agricultural Fund for Rural Development (EAFRD), c.f. Regulation 1305/2013

[51] See article 97(1) and (2) of Regulation 2021/2115.

[52] Support for farming practices to improve nutrient management are planned to be carried out on 15,2% of the EU's agricultural area.

[53] 27% of EU's agricultural area is planned to be covered with commitments which lead to a sustainable use of pesticides in order to reduce risks and impacts of pesticides such as pesticides leakage.

and/or dedicated measures to eliminate or reduce pollution from priority substances and other substances.

In most cases, specific measures have been implemented to deal with pollutants that are causing failures to reach good chemical or ecological status of waterbodies. Examples of these measures include efforts to reduce or stop the release of certain pollutants into water and the remediation of contaminated sites, addressing historical pollution in sediments, groundwater and soil. However, not all national RBMPs provide the same level of detail in terms of explicitly linking individual substances to specific measures to combat pollution. More progress is needed on this front and in developing a gap analysis to inform the design of the measures.

All Member States reported **inventories of emissions, discharges and losses** of harmful substances. However, there are large differences among and within Member States in both the coverage of the relevant toxic substances and their completeness. The top 10 substances for which emission inventories have been most commonly set up are mercury, benzo(a)pyrene, fluoranthene, benzo (g,h,i)perylene (PAHs), nickel, lead, and cadmium (heavy metals), and nonylphenol (non-ionic surfactants), perfluorooctanesulfonic acid (PFOS, a type of PFAS) and tributyltin-cation (a highly toxic biocide).

Most Member States have reported basic measures related to the construction or upgrade of wastewater treatments plants acknowledging that additional efforts are needed to comply with the Urban Wastewater Treatment Directive (UWWTD). Currently, 82% of EU's urban wastewaters are collected and treated in line with EU standards.

The implementation of the revised UWWTD will further reduce pollution from urban wastewaters. It includes new rules on storm overflows and urban run-off that will help Member States to more effectively address these pressures that had not been covered by EU legislation.

While the WFD does not cover pollution from litter, including plastics, this is a key area where synergies with the MSFD must be created since a very large amount of plastic in the sea come from rivers. The assessment of the programmes of measures under the MSFD shows that Member States have taken many measures to address the main sources of litter, starting with activities related to sewage from urban areas and other land-based sources (e.g. industry, agriculture). This has led to an estimated 29% reduction in **beach litter** between 2015 and 2021 across all EU sea basins. These measures are also likely to have had a positive impact on rivers, lakes and coastal waters.

Given the significant pressure that atmospheric depositions continue to pose on the health of water bodies, action at source to reduce emissions of pollutants, including uPBTs, resulting from the use of fossil fuels through the integrated approach to the pollution in different environmental media advocated for in the Zero Pollution Action Plan remains a priority to achieve the objectives of the WFD. In this respect, the more stringent standards adopted under the recently revised Ambient Air Quality Directive, the revised industrial Emissions Directive, the effective implementation of the Mercury Regulation, and the EU's overall decarbonisation efforts are expected to have a positive impact on the reduction of emissions of some individual substances that enter the water environment via air emissions.

6.2 RESTORING RIVERS, LAKES, COASTAL WATERS AND GROUNDWATERS

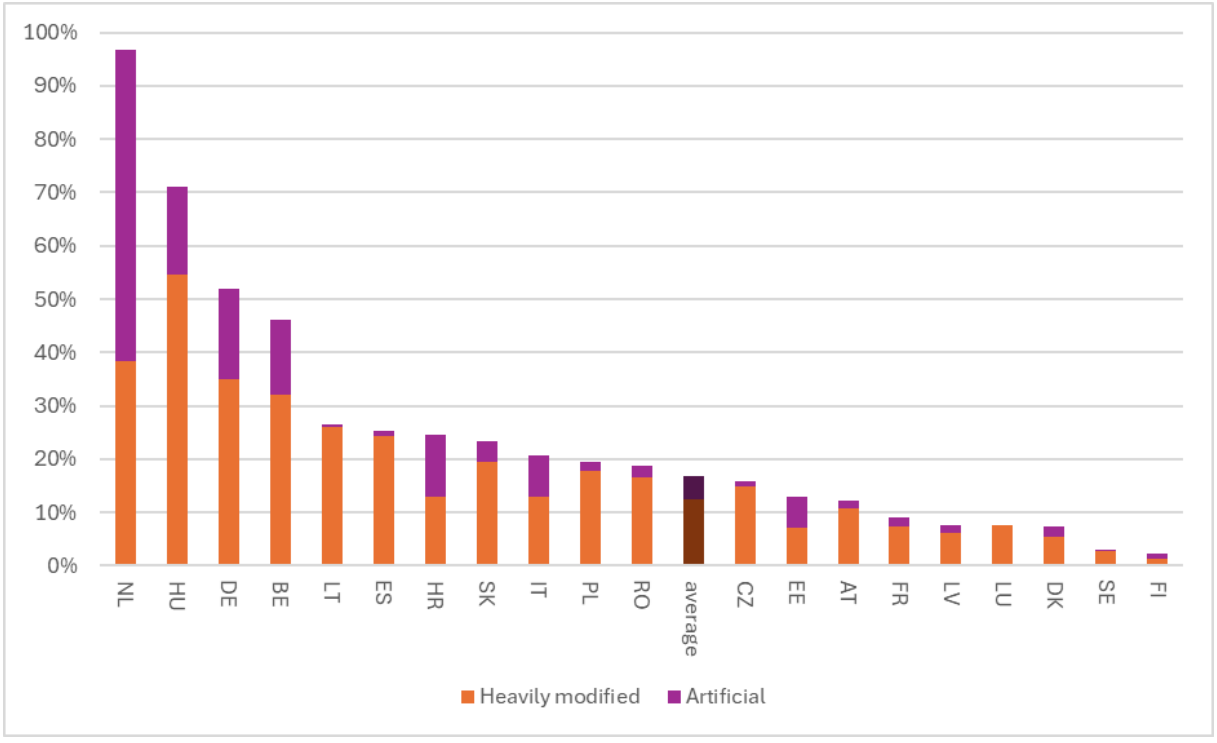
6.2.1 Changes to physical features and natural flow of water bodies – what is the level of human intervention in the water system?

For hundreds of years, human activities have physically changed the shape of EU rivers, lakes, estuaries and coastal waters by eliminating natural features, introducing concrete infrastructure (i.e. heavily modified water bodies) and creating new canals and reservoirs (i.e. artificial water bodies). This has all resulted in new, but non-natural, water systems.

The RBMPs show very big differences between Member States on the degree of human intervention in their natural aquatic environments. The more intense the human intervention, the more waterbody features are modified, with some becoming completely artificial. The proportion of these **heavily modified water bodies** (HMWBs) and **artificial water bodies** (AWBs) has slightly increased in this reporting cycle: 12.4% of them were designated as heavily modified and 4.4% as artificial[54] in the 20 Member States considered in the analysis compared to 11.9% and 4.1% in the previous reporting cycle.

Figure 9 below reveals the very high level of human intervention in some Member States (Netherlands, Hungary, Germany and Belgium) and the well-preserved natural state in some others (such as Finland and Sweden).

Figure 9 – Percentage of surface water bodies that have been designated as heavily modified or artificial in the third RBMPs by Member State



[54] However, there are still three Member States for which the designation is either not yet complete (Croatia, Slovakia) or undergoing revision (Sweden).

Three Member States (Austria, Croatia, Slovakia) reported a significant increase in their share of HMWBs and AWBs, which seems to be the result of a reclassification of certain water bodies and, to a lesser extent, new alterations. Sweden is also expected to significantly increase its own share as a result of a new methodology.

The main uses of water that triggered a high degree of human intervention that led to water bodies being classified as heavily modified are: (i) flood protection (37%); (ii) agriculture (land drainage 23%, irrigation 15%); (iii) hydropower (21%); (iv) drinking water supply (11%); and (v) other urban development (10%).

Given their altered features, such waterbodies are not required to achieve good ecological status but only good ecological potential (GEP), which needs to be defined by the Member State following the requirements in WFD Annex V".

It is encouraging to see that there have been methodological improvements to determine what would constitute GEP as required by the WFD. However, Member States continue to define GEP differently and use different assumptions and criteria in their assessments. Moreover, some Member States have failed to define the GEP for all HMWBs, which leaves them without clear objectives to be reached.

Based on information available in WISE for the 16 Member States[55] that had managed to report electronically by the time this report was finalised, only 16.8% of the HMWBs and AWBs have reached GEP. However, this hides considerable differences among Member States (with the proportion of relevant waterbodies meeting GEP ranging from none in Belgium and the Netherlands to about half in Spain and Romania).

6.2.2 Protected areas

There are different reasons why certain water bodies are protected by the law. For surface water bodies, protected areas have been designated under the Drinking Water, Bathing Water, Habitats and Birds and Nitrates Directives as well as for the protection of economically significant aquatic species (i.e. aquaculture). In this reporting cycle, most Member States reported a higher number of water bodies associated with protected areas designated under other EU legislation and, as required by the WFD, have an updated **register of protected areas** in place.

A very positive development is that, with few exceptions, there seems to be **better monitoring of these areas –** probably linked to the general monitoring improvements under the WFD.

Water bodies associated with protected areas may need to achieve more stringent or specific water management objectives, compared to the good status objectives set by the WFD. This is to ensure compliance with the relevant legislation aiming to protect specific ecosystems, species, and drinking and bathing water. This may entail adopting additional measures.

As required by the Nature Directives, Member States have predominantly set up specific objectives for **habitats and species protected areas (Natura 2000 sites)**, although in some cases work is ongoing to determine the exact needs. In some cases, Member States have also

[55] As available by 31 May 2024.

set additional objectives and measures for **sensitive areas** under the UWWTD, **bathing waters** and **drinking water safeguard zones** although the objectives or measures are often reported in somewhat general terms[56]. Some Member States with a commercial interest in shellfish production (or less often in freshwater fish) have designated **protected areas for economically significant aquatic species[57].** For the shellfish areas, some Member States (Croatia, the Netherlands and Romania) have set the same objectives that were in the Shellfish Directives, which have since been repealed[58]. One Member States (France) applies different microbiological standards as compared to the repealed directives for all these areas. While Italy and Spain apply the same standards in some areas and different standards in other areas. For Poland, the information on standards is unclear.

Where additional objectives have been set, they have been predominantly achieved for drinking water safeguard zones shellfish designated areas and bathing waters, while only a small share of the objectives set for Natura 2000 sites have been achieved.

Regrettably, in almost all Member States the designation of protected areas does not seem to bring about the expected improvements in the overall status of the water bodies. On the contrary, as illustrated in Figure 10 below, data show an **increase in the number of water bodies associated with protected areas in bad status** compared to the previous cycle. This could partly be linked to the significant reduction in the number of areas with an unknown status. However, it also confirms limited progress in implementing the Nature Directives compared to the 2013-2018 period assessed in the 2020 'State of Nature' report. This report revealed that only 17% of protected river, lake, alluvial and riparian habitats were in good conservation status, and a large majority of protected fish and amphibian species were in poor or bad conservation status (80% and 60% of the population, respectively)[59]. This suggests that the 'protected area' designation still falls short of ensuring the better water management needed to protect the surface and groundwaters in these areas.

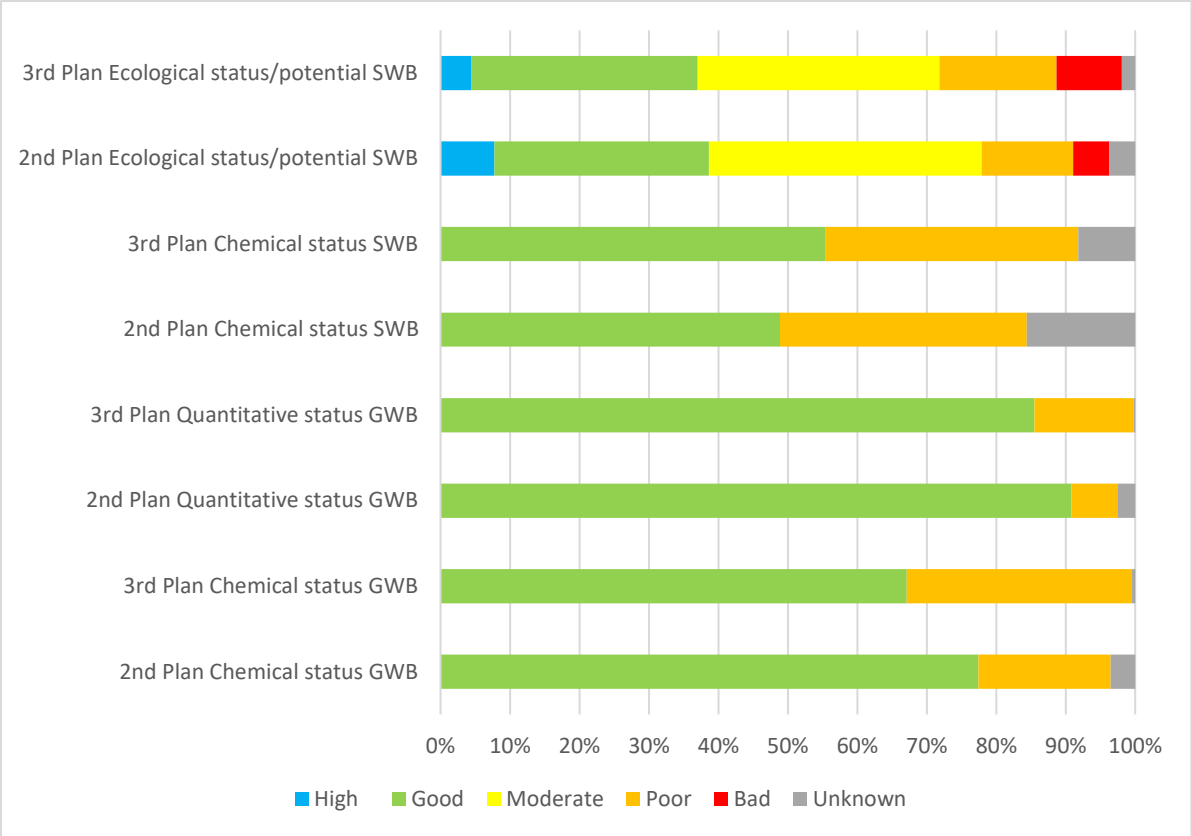
Figure 10 – Status of water bodies in protected areas based on second and third RBMP data (Source: Third RBMP electronic reporting)

[56] For habitats and species protected areas, some Member States reported measures, while others clearly referred to management plans under the relevant directives (Birds and Habitats). In some cases, for these protected areas, it is assumed that reaching WFD good status is sufficient to meet the additional objectives.

[57] These are Croatia, France, Italy, the Netherlands, Poland, Romania, and Spain for shellfish and Croatia, Italy and Latvia for freshwater fish.

[58] Former Directive 2006/44/EC of the European Parliament and of the Council on the quality of fresh waters needing protection or improvement in order to support fish life, and Directive 2006/113/EC of the European Parliament and of the Council of 12 December 2006 on the quality required of shellfish waters, whose validity ended in 2013. According to the WFD, the level of protection from these repealed Directives should be maintained through the inclusion of the areas, designated under the previous Fish and Shellfish directives, as protected areas under WFD.

[59] State of nature in the EU - Results from reporting under the nature directives 2013-2018; https://www.eea.europa.eu/publications/state-of-nature-in-the-eu-2020.



6.2.3 What is being done to reduce hydro-morphological pressures and restore nature?

Physical and hydrological alterations are reported as being a significant pressure in almost all river basin districts. The sectors causing this significant pressure include agriculture (both irrigation and drainage), hydropower, flood protection, navigation, and drinking water supply.

All Member States have reported measures that aim to reduce the negative environmental impacts of **hydro-morphological pressures** by improving flow regime, restoring river continuity and ensuring ecological flows are respected. This includes building fish passes, demolishing old and obsolete barriers, restoring rivers by improving riparian areas and flood plains and restoring riverbanks to their natural state. For instance, based on a recent report of Dam Removal Europe[60] – a coalition of non-governmental organisations – 487 barriers were removed in 15 European countries in 2023, up 50% from 2022's record number. France appears to be the trailblazer, followed by Spain, Sweden, Denmark and Estonia. These measures can contribute to 25 000 km of free-flowing rivers, the 2030 target set under the EU biodiversity strategy and the recently adopted Nature Restoration Law[61]. Nevertheless, river fragmentation and degradation of protected EU aquatic and water-dependent habitats and species, particularly wetlands and floodplains, remain a major challenge.

While not all the barriers in rivers are related to hydropower production, hydropower plants (HPPs) continue to be a very significant pressure on ecological status in several Member

[60] New Report: Dam Removal Movement Breaks Barriers and Records - Dam Removal Europe. Data were provided by ministries, municipalities, water agencies, river trusts, NGOs, scientists, researchers and river restoration practitioners.
[61] OJ L, 2024/1991, 29.7.2024.

States due to the disruption of river continuity with major impacts on fish migration, fish mortality and changes in hydrological flows and sediments movement. Refurbishing existing HPPs, including through win-win solutions that can contribute to achieving the WFD objectives, should generally be prioritised over new HPPs. Further efforts should be made to ensure that such plants' operations are more sustainable and adapted to evolving hydrological conditions linked to accelerating climate change impacts. This includes the periodic review of permits, including mitigation measures to reduce impacts of HPPs operation.

Only a few Member States (Austria, Belgium, France, Latvia, Luxembourg, Poland, Romania) report specifically prioritising **nature-based solutions** over other measures.

Determining and implementing minimum **ecological flows (e-flows)**[62] is essential for safeguarding the ecological status of surface water bodies. However, it is a source of strong concern that this work is progressing slowly in many Member States. In addition, despite guidance at EU level, there is a lack of consistency in how e-flows are defined. With a few exceptions, in most Member States the definition of e-flows is still being developed, and their actual implementation on the ground is progressing slowly and often only for some water bodies. The respect of e-flows only seems to be clearly linked to granting and reviewing abstraction permits in some cases.

6.2.4 What are Member States doing to reduce abstractions and tackle water scarcity?

It is important to differentiate between droughts (a lower level of precipitation) and water scarcity (a more systemic unbalance between available water and demand). Water scarcity is perceived as a growing issue in most Member States, with over-abstractions reported as being responsible for failure to achieve good quantitative or ecological status of a significant portion of water bodies[63].

There are **significant differences in water use** across different regions in the EU. In 2019[64], at EU level, abstraction for cooling in electricity generation was the largest contributor to total annual water abstraction (32%), followed by abstraction for agriculture (28%), public water supply (20%), manufacturing (13%) and cooling in manufacturing (5%), with mining, quarrying and construction accounting for only 1% of total abstraction each. However, agriculture, including livestock farming activities, is the largest net consumer [65]with 59% of

[62] For the purpose of the WFD, an ecological flow is 'a hydrological regime consistent with the achievement of the environmental objectives in natural surface water bodies as mentioned in Article 4(1)'. In other words, it is the "amount of water required for the aquatic ecosystem to continue to thrive and provide the services we rely upon".

[63] Among the 13 countries for which the information is available thanks to e-reporting, water abstractions are reported to be responsible for the failure to achieve good quantitative or ecological status in Spain (25%), Hungary (20%), Italy (19%), France (11%) and Belgium (11%) as regards groundwater and France (17%), Austria (12%), Spain (11%), Italy (9%) and Croatia (8%) in relation to surface waters. Although they failed to submit their reports, this is known to be also a significant issue in Cyprus, Greece and Malta.

[64] EEA's analysis of water abstractions between 2000 and 2019, https://www.eea.europa.eu/en/analysis/indicators/water-abstraction-by-source-and.

[65] According to the EEA Report 12/2021 *"Water resources across Europe — confronting water stress: an updated assessment"*, "water consumption" is the part of water used that is not returned to groundwater or surface water because it is incorporated into products (e.g. food and beverages) or consumed by households (e.g. drinking water) or livestock.

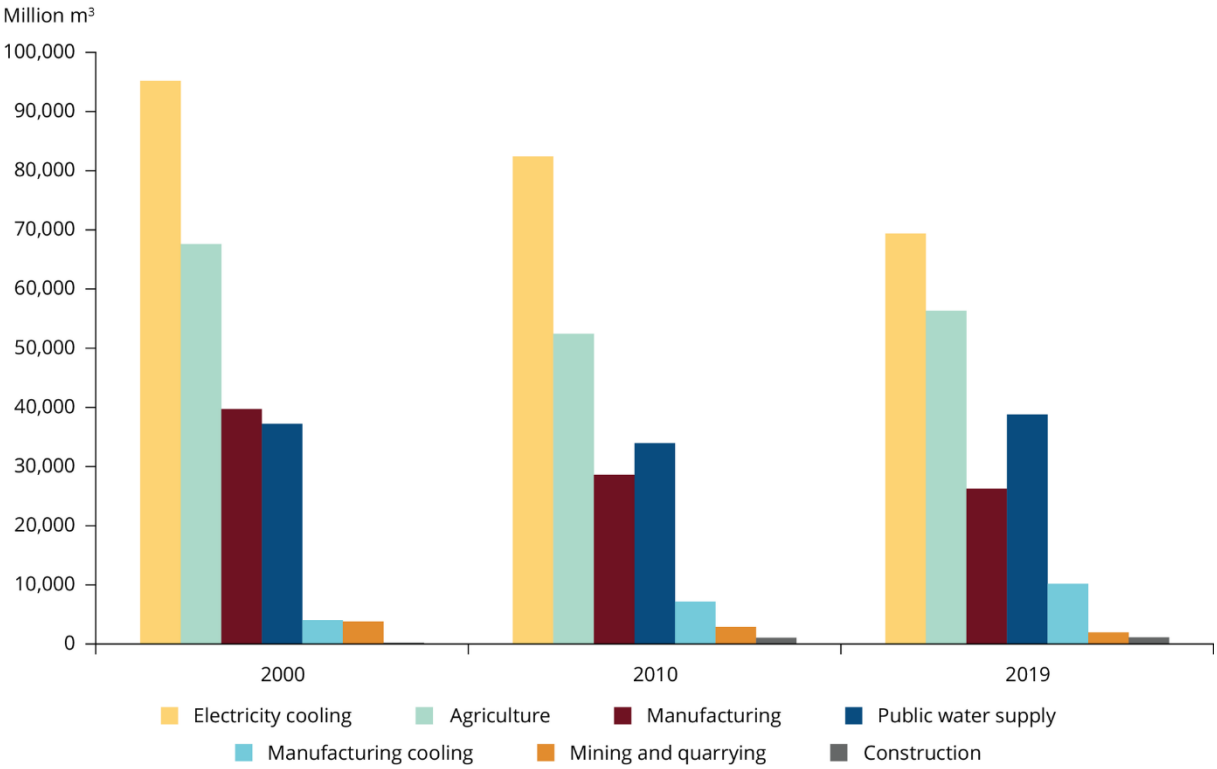
EU water consumption in 2019[66] as most water abstracted is either consumed by crops and farm animals or evaporates, rather than being returned to the same source it was abstracted from. Other main water consuming sectors are cooling for manufacturing and electricity generation (17 %), households and services (13%) and mining, quarrying, construction and manufacturing (11 %). EEA analysis shows that, between 2000 and 2019, there was a 17.6% reduction in water abstraction, reflecting policy measures implemented under the WFD.

However, while abstraction declined in some sectors, such as for cooling in electricity generation (-27%), it increased in others. For instance, water abstraction for cooling in manufacturing almost tripled, and abstraction for public water supply increased by 4%, with a particularly sharp increase since 2010 (14%). Water abstraction for agriculture decreased by 15% during the same 2000-2019 period, but has, since 2010 increased by 8%, mainly because of the increasing demand for irrigation in southern Europe where water scarcity is exacerbated by climate change. There is therefore an increasingly compelling need to adopt changes in practices, including a much better uptake of water reuse in line with the 2020 Water Reuse Regulation, and to switch to crops more adapted to the region-specific hydrological conditions, as well as improved soil management. Without such changes, water demand for agricultural irrigation will also significantly increase in regions where, to date, there is limited irrigation: this will only exacerbate water scarcity.

The CAP 2023-2027 is supporting efforts to increase water resilience in agriculture. Conditionality has been strengthened to include inter alia a new standard[67] covering controls on abstraction. Inter alia the Member States' CAP Strategic Plans provide significant support for practices to improve soil health, with positive effects on water storage capacity with a target to cover 47% of the EU's agricultural area with such support. Investments in improving the efficiency of irrigation installations, the use of recycled water for irrigation and rainwater harvesting can also be supported. However, in the regions most affected by water scarcity support for more systemic transformative changes towards less water intensive production systems will need to be envisaged.

[66] EEA Report 7/2024, *Europe's state of water 2024. The need for improved water resilience* (https://www.eea.europa.eu/en/analysis/publications/europes-state-of-water-2024).
[67] Statutory management requirement 1 (SMR1) on controls on abstraction and impoundment and controls on diffuse pollution from phosphates (WFD articles 11(3)(e) and (h)).

Figure 11 – Water abstraction by economic sector in the 27 EU Member States, 2000-2019 (EEA, 2022)



Basic and supplementary measures to reduce **abstraction** have generally been set out, but their implementation is inconsistent across Europe. These measures focus on control of abstractions, water efficiency and reuse, natural water retention, e-flows, research and knowledge building. There have been some notable attempts to reduce water consumption, such as the new French Water Plan that has a target to reduce abstractions by 10% by 2030.

As reported in 2021 by the European Court of Auditors (ECA)[68], Member States have made progress in setting up **prior authorisation systems for water abstraction**, systems for detecting illegal water use and in some cases pricing mechanisms with the potential to incentivise water efficiency. However, the fact that most of them exempt small abstractions from inspections or registration is problematic. This can lead to the cumulative impact of many, continued small abstractions over a whole river basin, negatively affecting the status of water bodies, particularly in Member States already facing water scarcity problems. While noting that several Member States have introduced water pricing mechanisms that incentivise efficient use of irrigation water, the ECA also identified as problematic the practice of significantly lower water prices in agriculture than elsewhere in the economy, including derogations for irrigation.

The frequency with which Member States **review abstraction permits**, as required by the WFD[69], is very different, ranging from 6 years to several decades or even indefinite periods of time. This situation makes it sometimes impossible to properly factor in the evolving situation in water bodies, including from a climate change perspective. The Commission is currently

[68] Special report 20/2021: Sustainable water use in EU agriculture.
[69] Article 11(3)(e) of the WFD requires Member States to carry out regular mandatory reviews.

involved in enforcing the obligation to review such permits to ensure all Member States correctly implement it[70].

The issue of **unauthorised / illegal water abstraction** (i.e. abstraction either without a permit or exceeding permit conditions) is only explicitly mentioned in some RBMPs from four Member States. However, the problem has also been recognised in other parts of Europe. Even where mentioned, these references usually lack a quantification of the current issue and trends compared to the second RBMPs. In some of these countries, efforts are ongoing to close illegal wells to prevent such unlawful appropriation of this common resource.

As in the past, several Member States are tackling water scarcity by focusing their measures on increasing supply. These measures include drilling **new wells**, constructing **new dams and reservoirs, expanding irrigation infrastructure for agriculture** and constructing **large-scale water transfer infrastructure** and **desalinisation plants**. However, very limited information is provided in the RBMPs on such measures, including as regards their environmental and economic viability and the consideration of long-term climate scenarios.

6.3 TACKLING THE CLIMATE CRISIS

As outlined in the European Climate Risk Assessment[71] and as recognized by the Commission in its Communication on managing climate risks[72], the EU and its Member States must become significantly better at preparing for and effectively addressing climate risks[73]. The evidence that climate change is already having a substantial impact on the occurrence and severity of water-related risks, such as droughts and floods, in much of Europe is mounting[74]. Boosting water resilience[75] through effective implementation of the WFD and the FD is therefore a pre-requisite to achieve the climate resilience objectives of the EU climate law[76]

[70] Letters of formal notice on this subject have been sent to Austria, Finland, the Netherlands and Slovenia,; for Ireland, the issue is dealt with in the context of the long-standing infringement procedure for lack of correct transposition of several provisions of the WFD, including Article 11.

[71] EEA (2024), European climate risk assessment. No 1/2024, https://www.eea.europa.eu/publications/european-climate-risk-assessment. Europe is the fastest-warming continent in the world. Extreme heat is becoming more frequent while precipitation patterns are changing. Downpours and other precipitation extremes are increasing in severity, and recent years have seen catastrophic floods in various regions. At the same time, southern Europe can expect considerable declines in overall rainfall and more severe droughts.

[72] Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions Managing climate risks - protecting people and prosperity, COM(2024) 91 final, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024DC0091

[73] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Managing climate risks - protecting people and prosperity (COM(2024) 91 final), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52024DC0091.

[74] Temperatures in Europe have increased more than twice the global average over the past 30 years – the highest of any continent in the world, November 2022 report, the World Meteorological Organization, https://wmo.int/publication-series/state-of-climate-europe-2022 and Climate Change 2022: Impacts, Adaptation and Vulnerability, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FullReport.pdf.

[75] The need to strengthening resilience to climate change climate was stressed in the 2021 EU Strategy on Adaptation to Climate Change and in the 2021 European Climate Law.

[76] Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law').

and the EU adaptation strategy[77]. At the same time, the objectives of the WFD and the FD can only be achieved by taking into full consideration the impacts of climate change.

6.3.1 Have climate resilience and drought risk management been duly considered?

Although the obligation to adapt the RBMPs to climate change is not explicitly stated in the WFD, the stepwise and cyclical approach of the WFD planning process is well suited to managing climate change impacts in an adaptive way.

An increasing number of Member States reported a systemic consideration of **climate change** impacts and an effort to align their programme of measures with their **national climate adaptation plan**. 70% of the assessed Member States (14 of 20) reported having completed an analysis of how climate change is affecting their water bodies. However, it is often unclear whether and to what extent the result of such analysis helped identify the key pressures and determine the most effective measures.

In the third RBMPs, climate change effects were mostly linked to droughts and lower water availability, even if floods continued to remain a major concern. Most Member States framed these climate impacts around their effects on agriculture (irrigation risks), inland navigation and energy generation (hydropower, some thermal power). This is a considerable difference from the second RBMP, where excess water (i.e. floods) was perceived as the main climate impact. This is also coherent with the increased concern over water scarcity across most Member States outlined in section 6.2.4 above. Importantly, although not legally required under the WFD, 16 of the 20 assessed Member States reported droughts as a significant occurrence; an increasing number of Member States reported that they had developed or were developing drought management plans at national, regional or RBD levels.

Climate change is also having a growing impact on water quality in several Member States. An increasing number of Member States have invoked the **Article 4(6) exemption for temporarily failing to reach good ecological status due to prolonged droughts**.

Some Member States have recently developed national water strategies (e.g. France and Germany) in response to the increased number of droughts. These are complementary to the RBMPs but have not been considered in the Member States' reports. However, these national strategies can include major additional measures that should be implemented with the RBMPs in a cohesive manner.

As regards the impacts of climate change on flood risk management, the findings from the assessment of the second FRMPs and the two steps[78] before the FRMPs are encouraging. All Member States (compared to just half in the first preliminary flood risk assessments) considered climate change in their second preliminary flood risk assessments (PFRAs) and nearly all considered it in their second flood hazard and risk maps (FHRMs) (also compared to just half previously), even though this is not explicitly required for maps in the FD. In the second FRMPs, all 21 assessed Member States provided evidence that climate change impacts were considered (compared to over a third previously). Nearly all Member States, compared to only half in the first cycle, discussed future climate scenarios in their FRMPs with varying

[77] COM(2021) 82 final - Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions "Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change".
[78] The preliminary flood risk assessments and the flood hazard and risk maps.

timeframes (between 2030 and 2115). Almost all Member States made the connection to their national adaptation strategies (compared to less than half for the first FRMPs).

6.3.2 Progress towards climate resilience under the Floods Directive

Floods are the most common risk in Member States' National Risk Assessments[79]. As indicated in the EUCRA, Europe is facing more and stronger climate hazards, including heavy precipitation leading pluvial and fluvial floods, and sea level rise leading to coastal floods.

Notable progress in flood risk management has been achieved throughout the EU since the introduction of the 2007 Floods Directive. FRMPs are the main tool to mitigate potential adverse consequences of flooding and are the third of the cyclical, three-step approach introduced by the FD. The current FRMPs, which are the second set, cover 2022-2027 just like the third RBMPs. The two steps before the FRMPs, namely the second PFRAs[80] and the second FHRMs were carried out by the Member States earlier. Both were assessed by the Commission[81].

In terms of completeness, all 21 Member States that reported on time to be considered in this assessment provided contextual information in their FRMPs about their PFRAs and FHRMs

Compared to the previous cycle, flood risk management has improved in the assessed Member States. All Member States have set flood risk management objectives. Some set a few broad objectives supported by more specific sub-objectives, and others presented a number of more detailed objectives, compared to the past. All of them included measures to achieve their objectives.

A few Member States have set targets that allow for quantitatively assessing progress compared to the previous cycle. However, several Member States make a clear link between the measures in the plans and the objectives these measures are intended to achieve. When comparing the same Member States, 14 have this clear link in their plans compared to only 7 in the previous plans.

The plans include progress on implementing the measures rather than the progress towards targets set by the objectives to reducing flood risks. It is thus difficult to conclude how effective flood risk management has been across the EU.

The number of measures in the FRMPs varies significantly across Member States, ranging from below 100 to over 10 000 measures. This variation depends on the size of the country, the amount of areas of potential significant flood risk and the choice of individual or grouped measures.

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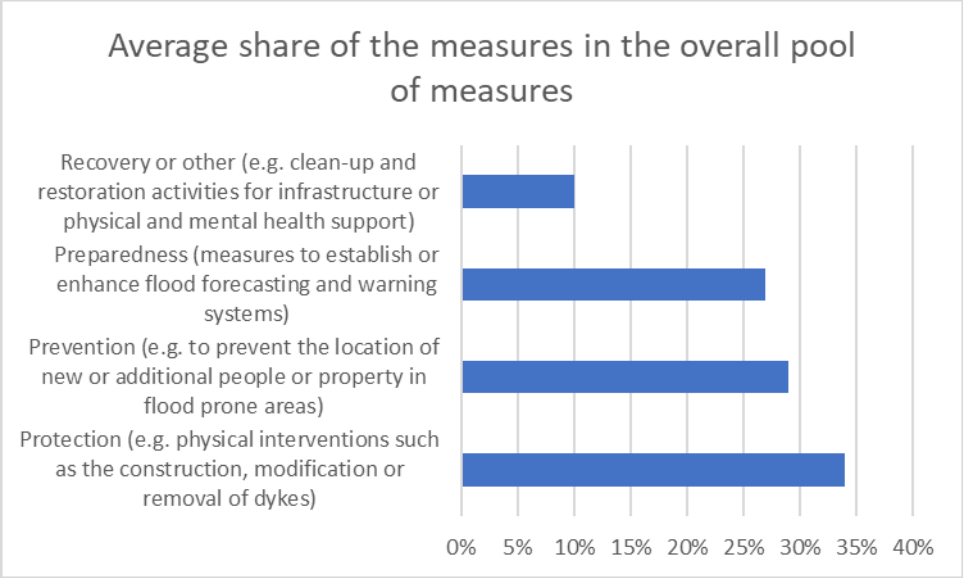
[79] COM(2024) 130 final - Report from the Commission to the European Parliament and the Council on progress on implementation of article 6 of the Union Civil Protection Mechanism (Decision No 1313/2013/EU) Preventing and managing disaster risk in Europe.

[80] There are about 14 000 areas of potential significant flood risk (APSFRs) in the EU, for an overview see the flood risk areas viewer available at https://discomap.eea.europa.eu/floodsviewer/.

[81] For the Commission's assessments of Member States' second PFRAs, see the documents published under the Sixth Implementation Report. For the Commission's assessments of Member States' second FHRMs and second FRMPs, see the documents under the current Seventh Implementation Report, https://environment.ec.europa.eu/topics/water/water-framework-directive/implementation-reports_en.

Figure 12 – Share of measure by type (prevention, protection, preparedness, recovery)



There are two broad clusters of Member States: one consists of Member States that prioritise prevention and/or preparedness measures, and the other cluster of Member States prioritises protection . Although protection measures are still the most frequently reported in the second FRMPs, prevention and preparedness measures now account for a slightly larger share of the EU total. In terms of non-structural measures[82], all assessed FRMPs refer to spatial planning. However, references to legal or policy frameworks that link spatial planning and flood risk management were only in 8 of the 21 assessed Member States. It is encouraging that all Member States include nature-based solutions in some or all their FRMPs; however, there is no evidence yet of a notable change on the ground in terms of large-scale uptake of nature-based solutions instead of or combined with traditional infrastructure. Although the FD does not mention insurance, 12 of the 21 Member States make at least a reference to it. This confirms the valuable role that insurance as a risk transfer mechanism could play in promoting climate adaptation.

A positive trend is how Member States prioritise flood risk management measures. All Member States prioritised measures or provided a timeframe for their implementation (not all did so in their first FRMPs). For example, the analysis indicates that most measures were classified in the three highest priority categories (high, very high and critical), i.e. 50% or more of the measures in 13 Member States (out of the 21 analysed) falls in one of these categories. In contrast, far fewer Member States reported significant shares of measures in the two lowest priority categories (medium and low). In the transition from the first to the second FRMPs, there has been a slight downward shift in the urgency of measures across Member States, from critical to very high priority and from very high to high priority. There have also been some upward shifts in urgency, mainly from low and moderate priority to high priority. 15 of the 21 Member States have made some cost-benefit analysis of their measures although few have used it to prioritise them. Because the ratio of Member States using cost-benefit analysis is more or less the same as in the previous cycle, progress mainly relates to the improved methodologies applied in some Member States.

[82] Measures not involving civil engineering structures, such as raising awareness, ensuring early warning systems, disaster prevention and response plans and spatial planning.

Indespensible elements of flood risk management are reliable forecasting and early warning systems to promptly activate civil protection measures, along with a strong response capacity during and after such events. The Commission is supporting Member States through action in this field at EU level, including through the Copernicus' European Flood Awareness System which support preparatory measures before and during major flood events strike[83]. Copernicus' rapid mapping service provides on-demand and fast provision (within hours or days) of geospatial information, supporting emergency management activities before, during and immediately after a disaster. Once disaster strikes, Member States can call on the Union Civil Protection Mechanism, which has substantially strengthened cooperation between countries on civil protection and improved prevention, preparedness and response to disasters[84], for instance, by developing disaster resilience goals[85]. The Commission is encouraging the uptake of Copernicus' emergency management services, and promoting the sharing of lessons learnt and best practices among Member States, especially after major flood events.

7. ENSURING SOCIO-ECONOMIC SOUNDNESS

Given the limited progress in reaching good status, a large majority of water bodies are covered by various **exemptions** set out in Article 4 of the WFD[86]. It must be mentioned that the number of exemptions related to Articles 4(4) and 4(5) of the WFD has increased. The justifications for such exemptions have generally improved in terms of meeting the WFD requirements to be based on appropriate, evident and transparent criteria. However, not all Member States provide sufficiently detailed information at the level of the affected water body and only about half of the assessed Member States provide sufficient details in all RBMPs.

In line with Articles 9 and 11 of the WFD and its Annex III[87], updating and reporting the **water economic analysis** and the related use of **cost recovery instruments**, including water pricing, are becoming a more established practice in RBMPs. Nevertheless, the reporting often does not make clear links to key challenges and developments in the river basin district. Therefore, it is unclear how the economic analysis has informed the choices on cost recovery, pricing and more generally the design of the PoMs. For instance, the reporting on water

[83] EFAS is the first operational European system monitoring and forecasting floods across Europe. It supports preparatory measures before and during major flood events strike. It provides complementary, added-value information to the relevant national and regional authorities. EFAS also keeps the Emergency Response Coordination Centre informed about ongoing and possibly upcoming flood events across Europe. Recently EFAS v5.0 introduced several major changes to the system, including a higher spatial resolution.

[84] Report to the European Parliament and the Council on progress on implementing Article 6 (UCPM) Preventing and managing disaster risk in Europe 12.3.2024 COM(2024)130 & SWD(2024)130.

[85] https://civil-protection-humanitarian-aid.ec.europa.eu/document/download/7b124199-d4d7-43fe-b852-8cee69674d19_en

[86] Article 4(4) allows for an extension of the deadline for achieving good status or potential beyond 2015 (as set by Article 4(1)). Article 4(5) allows for the achievement of less stringent objectives. Article 4(6) allows for a temporary deterioration in the status of water bodies. Article 4(7) sets out conditions in which deterioration of status or failure to achieve the WFD objectives may be permitted for new modifications to the physical characteristics of surface water bodies, alterations to the level of groundwater and deterioration from high to good status as a result of new sustainable human development activities.

[87] Annex III to the WFD stipulates that the economic analysis should contain enough information in sufficient detail to describe and justify the cost recovery arrangements for water services and related obligations (Article 9). The analysis should also be able to help judge the most cost-effective combination of measures in respect of water uses to be included in the programme of measures, PoMs (Article 11).

services does not provide much detail. Many of the RBMPs typically report on the two broadly defined water services, namely drinking water supply and sanitation services; therefore, they tend not to recognise and discuss the individual water services that fall under or are directly linked to these categories, such as water storage and reuse. This makes it difficult to have a sufficiently complete understanding of water uses in the country, including their economic significance and potential for cost recovery, and the pressures they put on water bodies.

In addition, compared to the elements required under Article 9 of the WFD, some major implementation gaps remain, in particular those listed below.

- The assessment of whether existing pricing policies provide 'adequate incentives' for more efficient water use.
- The assessment of environmental and resource costs and their inclusion in the cost recovery arrangements.
- The assessment of whether water uses and the key water-user sectors (including agriculture, industry and households) provide an 'adequate contribution' to the costs of providing water services in line with the polluter-pays principle. The reported data often lack details on the environmental and resource costs as well as on the water uses that exert the most significant cost pressures on the main water services (i.e. water supply and sanitation).

More investments are essential to meet the WFD objectives and make EU societies more water resilient. For Member States that submitted reports electronically, some information on the funding needs for the WFD is available and shows that an increase in funding to implement their measures is often required. This would include an additional EU financial contribution. However, the information is either incomplete, contradictory or even missing for some of the electronic reports (i.e. Estonia, Latvia and the Netherlands). For the 10 Member States for which information is available, the cumulative funding needs between 2022 and 2027 is calculated to be EUR 89.4 billion (approximately EUR 15 billion a year) but, given data limitations, this is likely to be an underestimation.

As regards the funding needs for implementing the FRMPs, 16 Member States (compared to 10 in the first FRMPs) provided some information on the estimated cost of measures. This comes to roughly EUR 35 billion between 2022 and 2027 (approximately EUR 6 billion a year) although this is likely to be an underestimation. The information provided varied significantly in scope and detail and often did not cover all measures even within a given Member State.

While limited information is provided in many of the RBMPs, it is worth noting that EU funding instruments including the Common Agricultural Policy, the Cohesion Policy and the Recovery and Resilience Facility played a significant role in supporting the implementation of RBMP and FRMP measures across Member States. Furthermore, the Commission through the Horizon Europe programme is providing extensive support for research to close the knowledge gaps and promote the deployment of innovative solutions, including through the Mission on Oceans and Freshwaters. Finally, through the Technical Support Instrument, the Commission is also supporting Member States in designing, developing and implementing reforms in water policy.

Nevertheless, analysis shows – for the EU as a whole – there is a failure to meet the annual investment needs, which are estimated to be EUR 77 billion a year, with a financing gap currently estimated at around EUR 25 billion a year[88]. This amount is largely based on water supply and sanitation needs, while costs for other measures related to the implementation of the WFD and the FD may not be fully reflected. Regrettably, for most Member States, the RBMPs do not contain a clear investment schedule that considers long-term water supply and demand forecasts based on the latest climate scenarios and adaptation strategies. More generally, the reported economic analyses do not clearly show how cost-effectiveness assessments have informed the selection of measures in the PoMs (which should ideally include many more investment measures). Further progress in the economic underpinning of the PoMs would greatly facilitate water-related decisions and investments.

8. TRANSBOUNDARY COOPERATION UNDER THE WFD AND THE FD

For river basins crossing national borders, the WFD requires Member States to coordinate among each other and also make reasonable efforts with non-EU countries where relevant. The analysis shows that, while the degree of cooperation differs, there is a stable institutional framework in place for transboundary coordination mechanisms across different international river basin districts (iRBDs)[89]. There are a few examples of existing arrangements that were further 'upgraded', compared to the previous cycle.

International RBMPs (iRBMPs) have been developed for the largest iRBDs and provide the framework for cooperation among Member States. Such frameworks focus on data sharing, joint monitoring and research projects, joint coordination on assessing the status, relevant priority indicators and agreed threshold values. This cooperation on indicators and threshold values, however, does not imply full convergence on the assessment results among the different countries that share the river basins.

Except for the Danube iRBMP that sets out measures of international relevance, the other iRBMPs essentially compile the national measures drawn up by each Member State; therefore, it is unclear to what extent consistency is ensured between measures taken by upstream and downstream countries. For instance, fish passes have been installed in the upstream parts of the Rhine, but similar measures have not yet been fully implemented downstream, which hampers the effectiveness of the upstream measures. Similarly, in the case of nutrient load reduction, there is a general lack of consideration of the upstream contribution needed to achieve the good status objectives for downstream waterbodies, particularly for the coastal and transitional waters that are most sensitive to nutrients.

It is noted with concern that transboundary cooperation on groundwaters is very limited. Many iRBDs have not identified cross-border groundwaters; therefore, the delineation and characterisation of groundwater bodies are performed by each country individually. Where transboundary aquifers are identified (e.g. the Scheldt, Vistula, Elbe and Danube), the characterisation is left to bilateral discussions. There is also limited cooperation on monitoring the qualitative and quantitative indicators for assessing the status of groundwaters.

[88] DG Environment, Environmental investment needs, financing and gaps in the EU-27 – update 2024 (internal analysis). Note that the next Environmental Implementation Report planned for spring 2025 will include further public information and updates on the topic.

[89] International agreements are in place for most iRDBs and often establish an international coordinating body and, less frequently, a joint RBMP. Only a few basins in the EU have neither of these.

With drought and water scarcity challenges becoming increasingly more pressing across the EU, quantitative aspects of water management are likely to become more important in the context of iRBDs. With some exceptions, such as the Albufeira Convention between Portugal and Spain, cooperation in the iRBDs on tackling water scarcity and drought is so far limited and should be further encouraged.

The WFD Article 12 procedure for **issues that cannot be dealt with at Member State level** has been invoked once since the previous report. In 2019, Czechia raised concerns about depleting groundwater levels as a result of the cross-border impacts of the Turow mine in Poland. The procedure was stopped in February 2022 following an agreement between Poland and Czechia in the context of a case brought before the Court of Justice (which had suspended the procedure under Article 12 itself).

Although not directly linked to the activation of Article 12, the Oder River disaster, one of the largest ecological disasters in Europe in recent memory, which led to a massive fish die-off in July and August 2022, demonstrated the consequences of inadequate communication between neighbouring countries and between these and the European Commission. The incident underlined the importance of effective transboundary cooperation to ensure a timely and adequate response to such disasters. The Commission provided support and expertise from the outset and produced, in cooperation with the EEA, a report that analysed the disaster's causes and set out key recommendations to prevent future ecological disasters in EU rivers[90].

The Floods Directive, like the WFD, requires Member States to coordinate their efforts within transboundary river basins, including with non-EU countries. Where basin-wide coordination organisations are in place, the development of an international FRMP invariably led to setting out common, high level objectives and, in almost all cases, drawing up a number of coordinated and common measures[91]. Within those river basin organisations, dedicated working groups follow implementation of international FRMPs at national level. Extensive public consultations on some of the basins, such as the Danube and the Rhine, took place. In addition, the existence of climate change adaptation strategies at basin level with direct links to the FD is significant in these efforts[92].

9. CONCLUSIONS AND OUTLOOK

Overall, the assessment shows that knowledge and monitoring of EU water bodies have significantly improved compared to the previous cycle. Unfortunately, the state of EU water bodies has failed to significantly improve when looking at the aggregated figures. There are clearly positive reductions in certain pressures where Member States have increased their water expenditure or made significant progress in implementing other relevant legislation[93]. For groundwaters bodies, a large majority has good quantitative and chemical status with a positive trend since the last reporting cycle.

In contrast, surface waters are in a highly critical situation. Less than a half (39.5%) of the assessed EU surface water bodies is in good ecological status, and less than a third (26.8%) in

[90] https://publications.jrc.ec.europa.eu/repository/handle/JRC132271

[91] Such as sharing hydrological data, exchanging national practices on pluvial floods and conducting studies on improving flood forecasting across the basin, as opposed to, for example, flood-protection building embankments.

[92] The strategy for the Rhine dates back to 2015 and the strategy for the Danube back to 2018.

[93] This concerns in particular the Urban Wastewater Treatment, Nitrates, and Industrial Emissions Directives and EU law on chemicals.

good chemical status. The reasons for this are manifold. For chemicals, some positive trends are masked by historic, widespread contamination of mercury and other ubiquitous, bioaccumulative and toxic pollutants or were overshadowed by new emerging pollution challenges. For the ecological status, there has been some improvement in certain biological quality elements. However, EU rivers, lakes and coastal waters are still subject to significant pressures and, even when effective measures are taken, progress may not be swiftly visible when monitoring as nature needs sufficient time to recover. It is encouraging to see a reduction in water bodies with an 'unknown status', but there are new challenges related to data comparability, which hinders objective assessments. All this requires reflections on how to improve data quality and comparability.

Despite these data issues, much remains to be done to fully achieve the objectives of the WFD and related directives. The onus is primarily on Member States, who need to raise the level of ambition and accelerate action.

It is already clear from Member States' forecasts that full compliance with the WFD's objectives by 2027 will not be achieved with the programme of measures set out in the third RBMPs.

As possibilities for exemptions are limited, tackling the significant funding gaps and better integrating water in other relevant policies will be particularly crucial. Several measures agreed under the European Green Deal (e.g. the revised Industrial Emissions and Urban Wastewater Treatment Directives) can help make swift progress if implemented early. It is worrying to note that several Member States have already indicated that they intend to make extensive use of exemptions in 2027, either by applying less stringent environmental objectives or extending the deadline. The Commission will also continue to engage proactively with the co-legislators to strengthen measures to tackle water pollution, including by paying increased attention to new emerging pollutants, e.g. PFAS, microplastics and pharmaceuticals.

For the Floods Directive, Member States have built on their experience from the first cycle and made incremental changes to their approaches to flood risk management. Three developments stand out: (a) a significant increase at EU level in the number of areas identified as having a potentially significant flood risk; (b) the adoption, by nearly all Member States, of GIS-based internet viewers to publish their flood hazard and risk maps, making them much more accessible; and (c) an improvement in the way climate change is considered, e.g. through modelling and scenarios. To continue progress in reducing the potential adverse effects of major flooding, Member States will need to make sustained efforts to improve planning capacity, particularly in terms of better monitoring progress to reach their objectives to reduce flood risks. They also need to plan and implement measures which will help to deal with future climatic conditions, among others by increasing (or restoring) the natural water retention, among others by restoring and reconnecting flood plains, as well as ensuring that flood prevention measures are dimensioned on future flood conditions. They also need to ensure adequate resources to effectively implement the FRMPs.

In this report and its accompanying staff working documents, the Commission issues some general and country-specific recommendations on how Member States can make further progress in better implementing both the WFD and the FD, thereby helping boost the EU's water resilience.

These recommendations will be the basis for a structured dialogue with Member States that the Commission will swiftly launch. These dialogues will enable securing better implementation and, where appropriate, better enforcement of the requirements under the WFD and the FD in close coordination with the enforcement efforts covering key pressures on the aquatic environment.

Along with continuing to work with Member States, the Commission will work with the public and all stakeholders to promote compliance. This will also be reflected in the next Environmental Implementation Review in 2025.

The Commission, in consultation with Member States and the EEA, will collect lessons learnt from this reporting exercise and identify opportunities to simplify and reduce the administrative burden and improve data management, in particular data comparability, while improving the electronic reporting platform's efficiency.

Finally, the Commission will continue to support Member States in their implementation efforts by facilitating the use of available and future funding, strengthening the availability of relevant data, information and knowledge as well as the exchange of good practices as part of the Common Implementation Strategy.

The findings of this assessment will also feed in the preparation of the announced Water Resilience Strategy.

10. RECOMMENDATIONS

Although country-specific recommendations are provided in the individual country assessments, the recommendations set out below are relevant for all EU Member States.

WATER FRAMEWORK DIRECTIVE

1. All Member States should **increase their level of ambition** and **accelerate action to reduce the compliance gap** as much as possible by 2027. This implies:
    a. **developing more robust programmes of measures** based on a clearer assessment of the gap to be bridged to reach good status and a clearer prioritisation of measures;
    b. decisively **tackling structural obstacles identified when implementing measures**, such as insufficient administrative capacity and resources;
    c. **strengthening governance** by improving **public consultations** and **coordination between the different administrative levels and authorities** dealing with implementation of other relevant EU legislation, particularly the Floods, the Marine Strategy Framework and the Nitrates Directives;
    d. ensuring full compliance with WFD provisions on the **periodic review of permits/controls** for all activities impacting water bodies (including abstraction, impoundment, discharges) and **effective, dissuasive, and proportionate sanction regimes**; consider, where applicable, revisions to existing exemptions of small abstractions from registration and permitting requirements, so cumulative impacts are managed better.

2. All Member States should **increase investment and ensure adequate financing to effectively implement the PoMs** to reach the objectives. This involves in particular:
    a. developing **long-term investment plans** and clearly identifying the source of financing for each measure, including the effective use of EU funding provided

through the Common Agricultural Policy, the Cohesion Policy 2021-2027 and the Recovery and Resilience Facility;

b. strengthening efforts to fully apply the **cost recovery principle** for water services so that all key water-users and water use sectors provide an adequate contribution to the water services costs;
c. making better and wider use of the '**polluter-pays principle**', eliminating harmful environmental subsidies and ensuring **affordable, just and fair pricing mechanisms** for **all** water users in line with Article 9 of the WFD.

3. All Member States should put in place **additional measures to reduce existing persistent environmental challenges (pressures)** based on robust gap analyses.
   This includes:
   a. **stepping up action to reduce nutrient pollution,** including by setting and achieving maximum nutrient loads in all river basin districts, in line not only with the WFD but also the MSFD and Nitrates Directive;
   b. **Strengthening measures against pesticide pollution** by reducing the use of chemical pesticides, promoting integrated pest management and more sustainable practices (e.g. precision farming), setting and achieving maximum chemical pesticide loads in all river basin districts and introducing more stringent restrictions in protected areas for drinking water abstraction;
   c. further **reducing point source pollution** to tackle nutrients, priority substances and river specific pollutants, e.g. by reviewing existing permits for point source emissions to lower pollutant loads or introducing obligations to temporarily suspend or limit discharges in emergencies, considering the new obligations under the revised IED and UWWTD;
   d. boosting efforts on **nature-based solutions**, including re-naturalisation and ecosystem restoration to reduce **hydro-morphological pressures**;
   e. stepping up efforts to **improve river continuity,** the general hydrological situation and aquatic species protection, including for migratory species;
   f. **setting out ecological flows (i.e. the level of water that must be left in the water body for the ecosystem to properly function)** for all RBDs and **effectively applying** them in water-allocation decisions and issuing or periodically reviewing permits for abstractions and impoundments in line with Article 11 of the WFD.
   g. more systematically including the **water needs of groundwater-dependent ecosystems** (both terrestrial and aquatic) when assessing the quantitative status of groundwater bodies.

4. In light of **water scarcities** experienced across the EU, Member States should:
   a. **improve climate-proofing** measures in the PoMs and, where relevant, develop suitable measures or plans for strengthened resilience;
   b. proactively **draw up or improve, regularly update and monitor accurate water balances for all river basins**, taking into account all water inputs and abstractions, natural losses and the needs of water-dependent ecosystems; this includes increasing direct monitoring and metering across water uses, continuously updating water abstraction registers and inspecting unauthorised and illegal water abstractions;
   c. take effective measures to promote **water reuse, efficiency and circularity**, while maximising the use of **nature-based solutions** for more sustainable water storage across soils and ecosystems;

d. when planning new **dams** and **reservoirs**, carefully assess their environmental impacts, including against the WFD objectives and ensure that such actions are part of integrated water management and of coherent **water resilience** strategies, which include duly considering **long-term climate scenarios**.

5. To achieve the WFD objectives and strengthen water resilience, **Member States should further improve transboundary cooperation**, in particular on:
    a. **the delineation** and **characterisation** of water bodies, **joint or coordinated monitoring programmes** and **status assessment methodologies** (e.g. commonly agreed reference conditions for biological quality elements and EQSs for pollutants);
    b. **quantitative aspects** of water management through relevant international cooperation mechanisms and bodies.

6. If the WFD objectives cannot be met for a specific water body and exemptions are invoked, Member States should do so in line with the **restrictive interpretation** stemming from case law of the Court of Justice of the European Union and provide sufficiently **detailed justifications**, ensuring that their **application is regularly reviewed**. This implies:
    a. ensuring that lowering objectives (- Article 4(5)- of the WFD)) - is **well documented and justified**, in particular as regards disproportionate costs and unfeasibility and considering the implementation shortcomings to date, rather than applying for the exemption as a default option for the failure to achieve the objectives by 2027;
    b. recognising that the **possibilities for time extensions** (Article 4(4) of the WFD- **are extremely limited**;
    c. providing much better information on the **exemptions** for new projects under Article 4(7); this includes better justifications for the use of these exemptions by detailing cumulative effects, assessing alternative, more environmentally friendly options, and giving information on the measures taken to mitigate possible adverse effects.

7. On **monitoring, assessment, data management and reporting, Member States should:**
    a. ensure, in cooperation with the Commission and the EEA, **timely and more complete electronic reporting** for future cycles, making better use of the opportunities stemming from digitalisation and earth observation to reduce the administrative burden and improve accuracy;
    b. further **improve data quality and comparability** by harmonising data collection methods across all RBDs on monitoring, assessments, projections, etc. and make all data publicly available via their timely publication in line with the requirements of the INSPIRE, Open Data and Public Sector Information (PSI) Directives and the public sector High Value Datasets[94] thus reducing the reporting burden;
    c. further **strengthen monitoring systems** to close gaps in both geographic coverage and the parameters analysed in order to increase **confidence in the status assessments**, reduce reliance on expert judgement or the grouping of

[94] (Commission Implementing Regulation (EU) 2023/138) laying down a list of specific high-value datasets and the arrangements for their publication and re-use.

different water bodies, and complete the work on setting up reference conditions for all water types;

d. develop methodologies for a more harmonised definition of **good ecological potential** to rapidly improve the status of HMWBs and AWBs.

8. Proactively **use the new policies and legal instruments agreed in the context of the European Green Deal** to step up implementation efforts that benefit the WFD, focusing on the co-benefits arising from, amongst others, the revised **Urban Wastewater Treatment Directive, the Industrial Emissions Directive** and the new **Nature Restoration Law**.

FLOODS DIRECTIVE

1. Member States should continue **improving their flood hazard and risk maps** (FHRMs), in particular by:
    a. consistently and clearly considering water abstraction areas, recreational waters and Natura 2000 areas;
    b. Taking pluvial flooding into account more, given the increased frequency and intensity of heavy precipitation;
    c. improving the GIS-based FHRM viewers that integrate all relevant information and are easy for the general public to use.

2. Member States should continue making **further efforts to improve their flood risk management planning**, in particular:
    a. future FRMPs should provide details on how the FHRMs informed the choice of objectives and measures;
    b. the FRMP's **objectives should be specific, have a deadline** where possible and be linked to **quantitative progress indicators;**
    c. the FRMPs should contain an assessment of the progress made towards achieving the objectives set in the previous FRMP.

3. To improve the **effectiveness of the measures** taken, Member States should ensure that there is a **clear link between the FRMP's objectives and its measures** and provide information on the **methods used to prioritise measures**. Where possible, a **cost-benefit analysis** of measures should be carried out and factored into their prioritisation. In addition, the FRMP should provide information on the total cost of the planned measures.

4. The FRMP should set out the **methods to monitor progress** in concretely implementing the measures.

5. All Member States should consider future **climate scenarios** in their FRMPs.

6. All Member States should increase efforts to implement Nature-based Solutions more widely, either in isolation or in combination with traditional infrastructure.

7. Next to investments for flood prevention and protection, all Member States should consider the cost of flood events on public budgets; **insurance** should be considered as an option for adaptation to the impacts of climate change.

8. Provisions for the **protection of cultural heritage** from flooding risks should systematically be integrated into the FRMP.

9. On **governance**, all Member States should clearly set out in their FRMPs how coordination with the WFD will happen and provide details on the public consultation and stakeholder involvement, including on how possible comments were taken into account. Consultations should be aimed to last 6 months.