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REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

on the implementation of the Water Framework Directive (2000/60/EC), the Environmental Quality Standards Directive (2008/105/EC amended by Directive 2013/39/EU) and the Floods Directive (2007/60/EC)

Implementation of planned Programmes of Measures
New Priority Substances
Preliminary Flood Risk Assessments and Areas of Potential Significant Flood Risk

{SWD(2021) 970 final} - {SWD(2021) 971 final}

1. Introduction

With the adoption of the European Green Deal[1], the EU has taken crucial steps to address the simultaneous, interconnected crises of climate change, health risk, biodiversity loss and pollution across all environmental media. The sustainable management of water quality and quantity plays a pivotal role in the response to this crisis, drawing on the existing legislative framework and the ambitious implementation of the European Green Deal and its subsequent initiatives. The financing now available for implementing the Member States' recovery and resilience plans is an additional support, helping them address existing pressures on freshwater quality and quantity, thereby also stimulating the transition to a clean, circular and carbon-free European economy in respect of the 'do no harm' principle.

In 2021, Europe once again witnessed the impacts of extreme water-related incidents, aggravated by the effects of climate change: dramatic flood events in the Rhine and Meuse river basins and unprecedented heatwaves and forest fires caused tragic losses of human lives and many billions of euro of damage. While only partially related to proper water policy, these events point to the importance of improved freshwater management, consistently pursued over a long time, including across national borders.

The Water Framework Directive[2] (WFD) provides the main framework and the overall objectives for water policy in Europe, and for the attainment of good status of all surface and ground-waters. The Environmental Quality Standards Directive[3] (EQSD) and Groundwater Directive[4] (GWD) complement the WFD for surface water and groundwater standards respectively. The 2019 fitness check of EU water law[5], covering these three Directives and the Floods Directive[6], concluded that the existing legislative framework is broadly fit for purpose, with some scope for improvement. It concluded that reaching the objectives of the WFD and the Floods Directive will require sufficient funding, faster implementation, and better integration of their objectives in sectoral legislation. Some of the legislation's shortcomings and possible measures on chemicals will be assessed in the impact assessment ongoing for the lists of substances in groundwater and surface water.[7]

This report aims to provide further insights and will be another checkpoint for progress in the overall implementation of the legislation, as a stepping stone towards assessment of the next generation (2022-2027) of river basin management plans (RBMPs) and flood risk management plans.

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[1] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
[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 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, OJ L 348, 24.12.2008, p. 84, as amended by Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013, OJ L 226, 24.8.2013, p. 1
[4] Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration, OJ L 372, 27.12.2006, p. 19
[5] https://ec.europa.eu/environment/water/fitness_check_of_the_eu_water_legislation/index_en.htm
[6] 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
[7] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12662-Integrated-water-management-revised-lists-of-surface-and-groundwater-pollutants_en

It includes the Commission's assessment of recent mandatory water-related reporting from Member States:

- Progress on implementing the programmes of measures (PoMs) under the WFD, second cycle (2016-2021);
- The monitoring of priority substances in surface water, added to the list under the EQSD in 2013;
- The review and update of the preliminary flood risk assessments from the first cycle of the Floods Directive (2016-2021).

2. Reporting

The second RBMPs under the WFD (due by December 2015) were assessed by the Commission in 2019[8]. Interim reports on the implementation of PoMs were due by December 2018. The Commission, under Article 18 of the WFD, has to inform the Parliament and the Council on progress in the implementation of the PoMs within 3 years of its assessment report of the RBMPs. All Member States have reported on the interim implementation of their PoMs.

As regards the EQSD this report assesses progress on the implementation of requirements related to the 12 new substances added to the list of priority substances in surface water, agreed in 2013. Specifically, Directive 2008/105/EC, amended by Directive 2013/39/EU, Article 3 (1a) (ii), requires Member States to establish and submit to the Commission a supplementary monitoring programme and a preliminary programme of measures covering the newly listed substances. All Member States reported on the new priority substances.

Finally, as regards the second reporting cycle of the Floods Directive, Member States are, under Article 14, required to have reviewed and updated, by 22 December 2018, their first cycle preliminary flood risk assessments (PFRAs). Reporting to the Commission was required by 22 March 2019. Almost all Member States reported on the updates of their first PFRAs.[9]

3. Second programmes of measures – interim assessment

Article 11 of the WFD requires Member States to develop PoM for each River Basin District (RBD) and specify their content, consisting of basic measures (Article 11(3)) and supplementary measures (Article 11(4)), as well as additional measures (Article 11(5)), as necessary.

Member States were asked to report on progress in implementing their defined 'key types of measures' (KTMs). KTMs are typical measures taken to reduce pressures like removing

[8] https://ec.europa.eu/environment/water/water-framework/impl_reports.htm
[9] Several Member States did not report by the deadline. The Commission has launched infringement proceedings for late reporting. To date, only two infringement procedures are still pending.

obstacles from rivers, upgrading waste water treatment plants, phasing out priority substances, etc.[10]

This PoM assessment reflects the situation as reported in the WISE database. Wherever possible, a separate analysis has been made for basic measures under Article 11(3) of the WFD and for the supplementary and additional measures under Articles 11(4) and 11(5) of the WFD.

A direct comparison of data in the RBMPs and in the PoMs of 2018 is often not possible due to methodological problems such as changes in measures, different base line years and changes in water body limits. However, the information provided for 2016 and 2018 and projected for 2021 still provides quantitative data on the progress made on implementing PoMs. The data are as far as possible reflected in this document and the associated Staff Working Document.

Overall situation

By mid-term of the 2016-2021 cycle, the implementation of measures was on its way in all Member States, with delays in some cases. Compared to the 2015 PoMs, all Member States reported KTMs and several[11] completed their reporting and now cover all their RBDs. Most Member States have made some progress in identifying the gap to good status for each significant pressure, and the level of implementation of measures required to achieve good status. For those Member States (18) who reported data allowing for a more in-depth analysis and comparison, it can be noted that 70-100% of the objectives have been met for RBDs in 3[12] of them, whereas in a further 4[13], 30-80% of the indicators signal a move towards the objective of closing the gap. In a further Member State[14], objectives have been met in 16 out of 25 RBDs. This is an encouraging improvement that will allow for better identification and prioritisation of the measures.

For Member States that identified other pressures in addition to the significant ones, measures are in place to address them, the gap to good status has generally been identified, and indicators developed to identify the level of implementation required to achieve good status.

[10] List of KTMs in WFD Reporting Guidance 2022, page 387
[11] Denmark, Greece, Croatia and Slovenia
[12] Estonia, Latvia, Malta
[13] Austria, Czech Republic, France and Portugal
[14] Spain

Member State	RBD	All measures completed	All planned measures completed	Some measures completed	Some planned measures completed	No measures completed
AT	3			3		
BE	8	1		5	1	1
BG	4			1	3	
CY	1			1		
CZ	3			3		
DE	10			10		
DK	4				4	
EE	3			3		
EL	14			14		
ES	25			25		
FI	8		8			
FR	14			7	7	
HR	2			2		
HU	1		1			
IE	3			3		
IT	8		1	3	4	
LT	4				4	
LU	2			2		
LV	4				4	
MT	1			1		
NL	4			4		
PL	10				10	
PT	10			9	1	
RO	1			1		
SE	5				5	
SI	2			2		
SK	2			2		

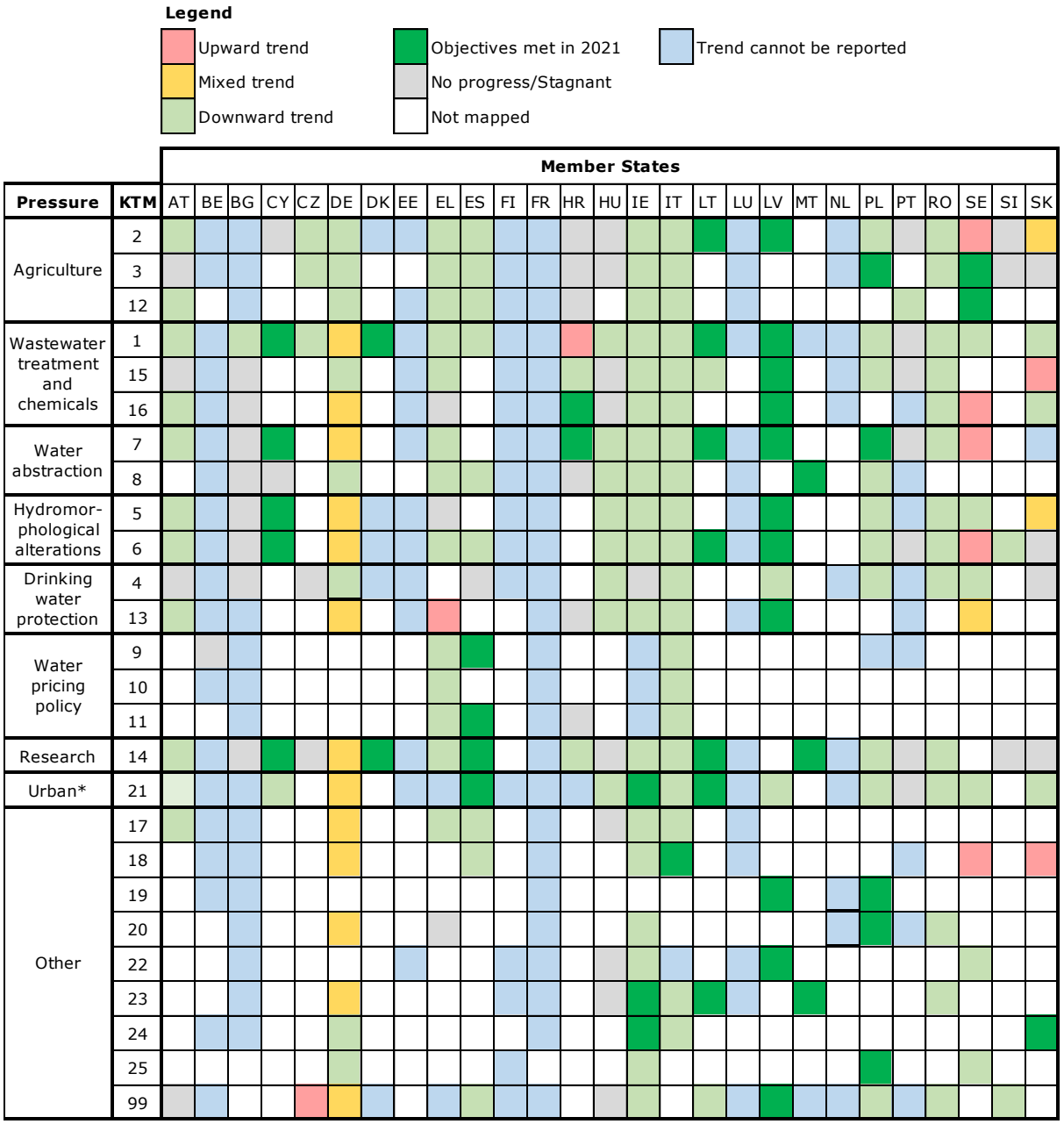
Table 1: Status and progress since the second RBMPs for RBDs.

Member States also reported obstacles encountered in implementing their PoMs. As set out in Table 2 below, the lack of finance, delays, and governance are the most significant impediments.

		Obstacles							
Member State	RBD	Governance	Delays	Lack of finance	Lack of mechanism	Lack of measures	Not cost effective	Extreme events	Other
AT	3								
BE	8		3	3	2				2
BG	4		4		1	1			
CY	1								
CZ	3	3	3	3	3		3	3	
DE	10		10	4	10	9	7	4	10
DK	4		4						4
EE	3		3	3	3				
EL	14		14						
ES	25	25	25	25	25				
FI	8			8	8				
FR	14	14	14	14	14				14
HR	2		2	2	2				
HU	1	1	1	1	1	1		1	1
IE	3	3		3			3		3
IT	8	5	5	8	7	1	2	6	
LT	4								
LU	2							1	2
LV	4			4				4	
MT	1		1						
NL	4		4	4			4		4
PL	10	3	3	3	3	4	4	2	5
PT	10		8	9			8	8	
RO	1		1	1	1		1		1
SE	5				5				
SI	2			2					
SK	2		2	2			2		2

Table 2: Obstacles to implementation of PoMs as per RBDs

Table 3 below summarises the expected trends in achieving objectives for different pressures and relevant KTMs, as predicted by each Member State at mid-term for the second half of the cycle (2018-2021). An upward trend indicates moving away from the objectives of the legislation, a downward trend indicates the gap towards the objective is becoming smaller.



**Pollution from urban areas, transport and built infrastructure*

Table 3: Reported expected progress on KTMs 2018-2021

3.1 Tackling Pollution

With the European Green Deal, the fight against pollution has taken centre stage. The zero pollution ambition was translated into a comprehensive Zero Pollution Action Plan[15] and the Sustainable Chemicals Strategy[16]. The Farm-to-Fork Strategy[17] (focusing amongst others on reduction of nutrient losses and pesticides and the increase of organic agriculture) and the Pharmaceuticals Strategy[18] (aiming amongst others to reduce the presence of antibiotics in the environment) will also make it possible to accelerate towards reducing water pollution.

Pollution from agriculture

Agriculture is reported as one of the main drivers for failure to achieve good status in EU water bodies. It can cause diffuse pollution by nitrates and pesticides in surface and groundwater[19]. Aside from diffuse pollution, water abstraction for agriculture is also a major pressure causing failure of good quantitative status of groundwater bodies.

Member States are in particular working on measures to reduce nutrient pollution from agriculture (KTM 2), reduce pesticide pollution from agriculture (KTM 3) and implement agricultural advisory services (KTM 12). Reporting also shows that all Member States have general rules on discharges from agriculture.

Ten Member States apply those rules across the entire territory while the others apply different rules depending on the RBD or, in two cases, only in nitrate vulnerable zones. To the extent Member States reported, the picture is rather positive for KTM 2 with indicator gaps closing which means that the measures are effective at improving status and closing the gap to good status, followed by no discernable trend meaning the pressures are not effective at improving water status and more effort is needed in these cases. For KTM 3 and KTM 12 the picture is mixed, with many Member States not reporting or mapping these KTMs. Where mapped, it shows the majority of indicator gaps closing but no discernable trend reported by a substantial number of Member States, meaning the pressures under these KTMs are not effective at improving water status and more effort is needed in these cases.

Member States' measures in the context of their PoMs include measures stemming from the Nitrates Directive[20], whose latest implementation report[21] recommends reinforced measures in polluted areas, and measures in the new common agricultural policy (CAP) strategic plans, due for submission to the Commission no later than 1 January 2022. A recent European Court of Auditors report analysed to what extent the CAP and EU water policy promote the sustainable use of water in agriculture.[22] The view of the Commission is that the CAP

[15] https://ec.europa.eu/environment/strategy/zero-pollution-action-plan_en
[16] https://ec.europa.eu/environment/strategy/chemicals-strategy_en
[17] EUR-Lex - 52020DC0381 - EN - EUR-Lex (europa.eu)
[18] https://ec.europa.eu/health/human-use/strategy_en
[19] EEA 2018 water assessment — European Environment Agency (europa.eu)
[20] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources, OJ L 375, 31.12.1991, p. 1
[21] EUR-Lex - 52021DC1000 - EN - EUR-Lex (europa.eu)
[22] Special Report 20/2021: Sustainable water use in agriculture: CAP funds more likely to promote greater rather than more efficient water use, September 2021

contributes to this objective through various instruments and measures. The new CAP provides an important opportunity to increase the ambition and finance additional measures benefitting sustainable water management in agriculture through the new eco-schemes in pillar I and the rural development programme in pillar II. The new CAP focuses on nine specific objectives defined in Article 6 of the Commission proposal[23], with three beneficial for environment[24]. When Member States are developing their Plans they must contribute to these specific objectives. There is also a requirement to contribute to the Green Deal targets including the Farm to Fork target on reducing nutrient losses by 50% and reducing the overall use and risk of chemical pesticides by 50% and these are outlined amongst others in the CAP recommendations[25] sent to Member States.

Pollution from households and industry

The reporting shows a positive trend, particularly on measures related to construction or upgrades of waste water treatment plants (KTM 1)[26], phasing out priority / priority hazardous substances (KTM 15) and upgrades or improvements of industrial waste water treatment plants (KTM 16). Almost all Member States have an authorisation and/or permitting regime to control wastewater point source discharges, which applies to both groundwater and surface water. However, at least half of the Member States still allow small discharges, although in some cases registration of such discharges is required. Almost without exception, Member States have taken measures to eliminate pollution reaching surface waters.

The planned revision of the Urban Waste Water Treatment Directive[27] (Commission proposal in 2022) should further reduce pollutants in European surface and groundwater, both by increasing the volume of waste water covered under the Directive, and by ensuring more waste water is treated with advanced treatment technology. The revised Drinking Water Directive's [28] new risk-based approach will boost interactions between water operators and those in charge of implementing the WFD.

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https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=59355
The Commission considers that the CAP contributed to the objectives of the WFD through various mechanisms; notably cross-compliance, payment for agricultural practices beneficial for the climate and the environment and greening, payments to beneficiaries for costs and income foregone resulting from the implementation of the WFD and rural development support and investments.

[23] Proposal for a Regulation of the European Parliament and of the Council establishing rules on support for strategic plans to be drawn up by Member States under the Common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD), COM/2018/392 final

[24] **SO4** – contribute to climate change mitigation and adaptation, including by reducing greenhouse gas emissions and enhancing carbon sequestration, as well as promote sustainable energy; **SO5** – foster sustainable development and efficient management of natural resources such as water, soil and air, including by reducing chemical dependency; **SO6** – contribute to halting and reversing biodiversity loss, enhance ecosystem services and preserve habitats and landscapes.

[25] CAP strategic plans | European Commission (europa.eu)

[26] 18 Member States are reporting to progress well towards closing their gaps.

[27] Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, OJ L 135, 30.5.1991, p. 40

[28] Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption, OJ L 435, 23.12.2020, p. 1

Similarly, the planned revision of the Industrial Emissions Directive[29] (Commission proposal in 2022) should improve compliance with water quality standards in the case of both direct and indirect discharges, and emphasise the need for an environmental management system to address water reuse and resource efficiency.

New Priority substances

A separate assessment was made of the current status regarding monitoring and measures of the new substances in the 2013 EQSD. Under the 2013 EQS Directive an additional 12 substances[30] should be monitored by all Member States.

Most Member States are already monitoring the 12 substances that were added in 2013. Four Member States[31] reported the chemical status of all substances monitored and defined KTMs for all substances failing. A further 11 Member States covered most substances monitored and defined KTMs for all substances failing. As regards the other Member States, information was incomplete, with RBDs and / or substances missing. Sometimes substances were monitored in a different matrix than that described in the EQS Directive. Often no information was provided on the derivation for these substances in this matrix.

In 2022, the Commission will propose a revision of the list of substances in surface and groundwater. This will potentially add further pesticides, pharmaceuticals and industrial chemicals to the list of substances for which emissions to water must be reduced or phased out.

3.2 Enhancing Water efficiency

As part of the Green Deal, water efficiency is now a solid part of the EU policy agenda. The Circular Economy Action Plan[32] highlighted the future role of the Regulation on minimum requirements for water reuse[33], which will facilitate an alternative water supply for irrigation, as part of integrated water management. The action plan also announced that the Commission will facilitate water efficiency in industrial processes (e.g. by revising the Industrial Emissions Directive). The 2021 EU Strategy on Adaptation to Climate Change[34] calls for safeguarding freshwater access and more efficiency of water use in all sectors and announced that the Commission will help reduce water use by raising the water-saving requirements for products. Transition to water-saving technologies and practices needs to be supported with relevant economic instruments.

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[29] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control), OJ L 334, 17.12.2010, p. 17

[30] Substances added in 2013: Dicofol, perflurooctanesulfonic acid and its derivatives, quinoxyfen, dioxins and dioxin-like compounds, aclonifen, bifenox, cybutryne, cypermethrin, dichlorvos, hexabromocyclododecanes, heptachlor and heptachlor epoxide, terbutryn.

[31] Croatia, Estonia, Slovakia and Sweden

[32] https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en

[33] Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse, OJ L 177, 5.6.2020, p. 32

[34] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0082&from=EN

Through the revised Drinking Water Directive (Article 4(3)), Member States will have to take measures to address the high leakage rates that are a reality at present. The Renovation Wave and European Bauhaus initiatives[35] relate to water efficiency in the building sector. In addition, the Biodiversity Strategy for 2030[36] calls on Member State authorities to review water abstraction and impoundment permits to implement ecological flows. The aim is to achieve good status or potential of all surface waters and good status of all groundwater by 2027 at the latest.

Water efficiency was, and continues to be, a high priority for Member States. Over half of them took measures in the previous cycle (2010-2015) and will continue to do so in the future. A further group of 10 took measures in the previous cycle but report no additional plans for measures in future.

Most Member States reported abstraction and flow diversion as main pressures. The most relevant measures associated with reducing the pressures and impacts arising from abstractions are improvements in flow regime and/or establishment of minimum ecological flow (KTM 7, reported in the section on hydromorphology) and measures to address water efficiency, technical measures for irrigation, industry, energy and households (KTM 8). Such quantitative measures were reported by almost half the Member States. Also in anticipation of the new Regulation on minimum requirements for water reuse, 11 Member States included reuse of water in the PoMs as a measure to manage water resources.

Significant progress can be seen on basic measures addressing *water abstraction*. Member States' reporting on abstraction shows that almost all of them have a permitting regime or register to control abstractions of groundwater and surface water (see Figure 1). Similarly, most Member States have a concession, authorisation and/or permitting regime to control water impoundment, and/or a register of impoundments. However, about half reported that small abstractions are exempted from controls.

[35] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1603122220757&uri=CELEX:52020DC0662; https://europa.eu/new-european-bauhaus/index_en

[36] https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en

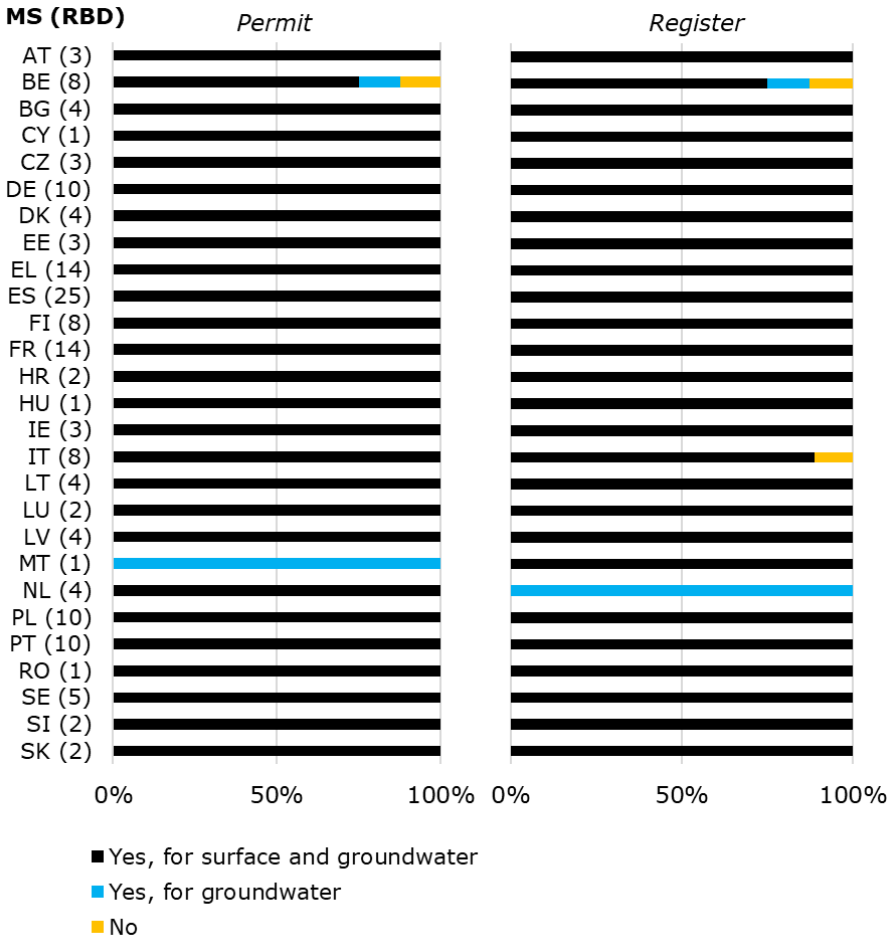


Figure 1: Permit or register to control water abstractions

As regards authorisation for artificial recharge or augmentation of groundwater bodies (see Figure 2), most Member States have either taken measures, carried out such measures in the previous cycle, or planned them in the current cycle. This will enable them to deal better with water scarcity and pollution.

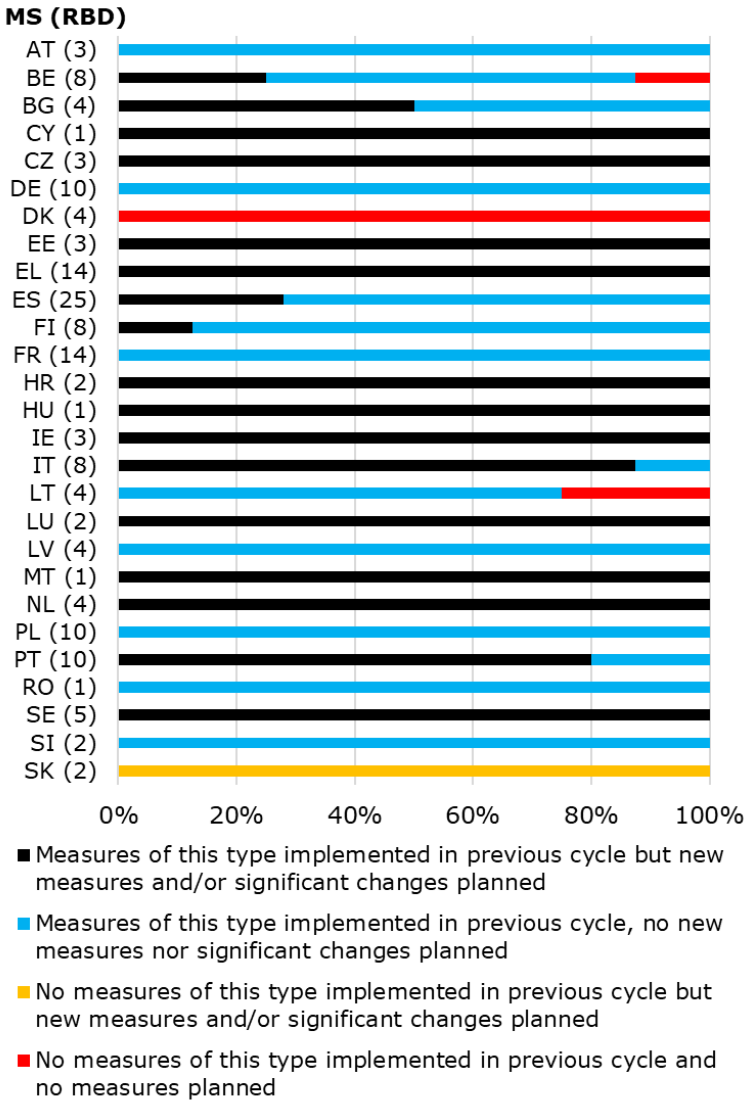


Figure 2: Authorisation for artificial recharge or augmentation of groundwater bodies

3.3 Adaptation to climate change

With the increasing impact of climate change, pressures on the availability of clean freshwater in sufficient quantity are expected to increase[37], so adequate measures are required to ensure WFD objectives. According to the reporting on adaptation to climate change (KTM 24), only 6 Member States reported actions for surface water, and 4 reported actions for groundwater. Most of the Member States reported diffuse pollution, abstraction or flow diversion, physical alteration and dams, barriers and locks as the main pressures. Other important pressure types reported are point sources.

[37] https://www.eea.europa.eu/highlights/water-stress-is-a-major

3.4 Addressing hydromorphological pressures

Hydromorphological alteration continues to be the single biggest type of pressure on water bodies. Through the Green Deal, and in particular the Biodiversity Strategy for 2030 and the Smart and Sustainable Mobility Strategy[38], further opportunities have opened up to address hydromorphological pressures such as dams, weirs, altered groundwater levels etc. The Biodiversity's aspirational target of 25, 000 km of free flowing rivers in Europe stresses the importance of rivers reconnecting laterally and longitudinally to fully reintegrate ecosystems.

The WFD (Article 11(3)(i)) requires Member States to ensure *controls on the hydromorphological conditions* of water bodies which may take the form of a requirement for prior authorisation or registration. The information reported and presented below indicates which Member States have permitting regimes to control the physical modifications to water bodies.

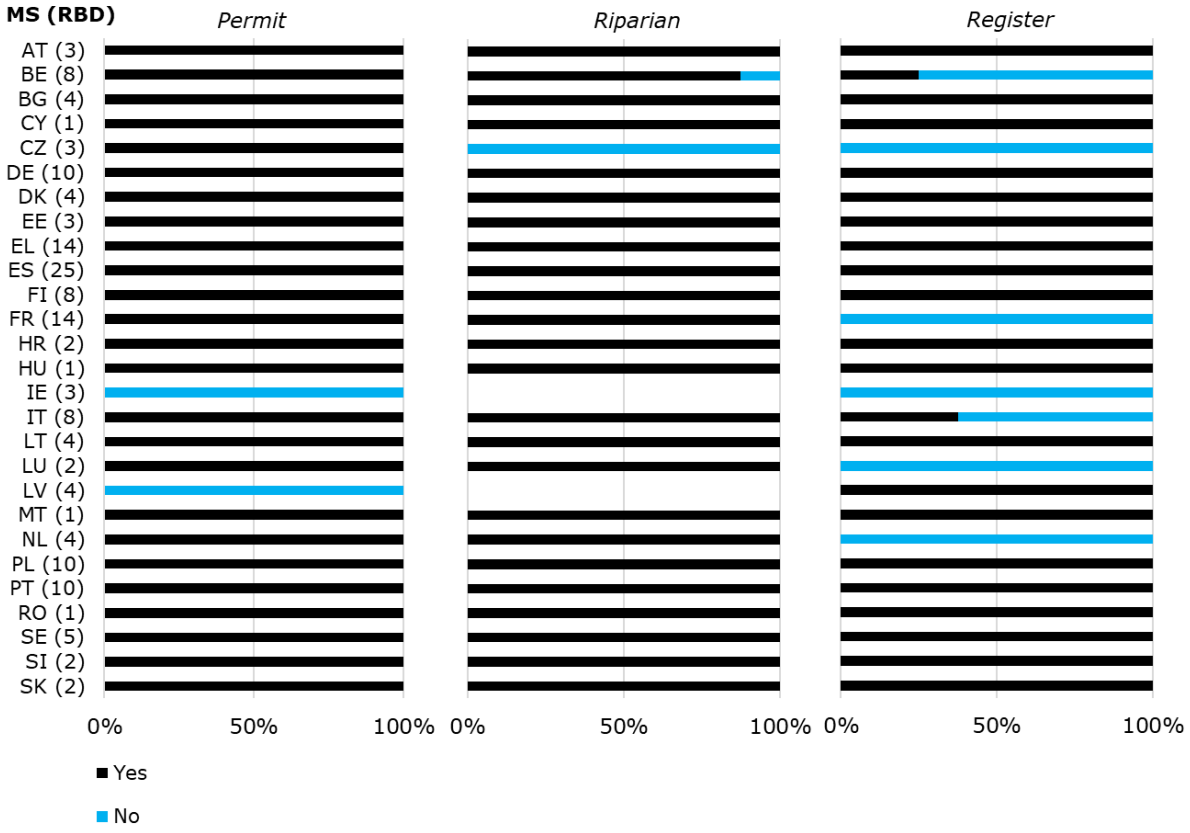


Figure 3: Permits to control physical modifications to water bodies.

Almost all Member States have permitting regimes to control physical modifications to water bodies. Among these, almost all cover riparian areas. Most Member States have a register of physical modifications.

[38] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12438-Sustainable-and-Smart-Mobility-Strategy_en

The most relevant measures in this context are improving longitudinal continuity (KTM 5), other hydromorphological improvements beyond longitudinal continuity (KTM 6), improvements in flow regime and ecological flow (KTM 7) and natural water retention measures (KTM 23).

Measures to improve longitudinal continuity (KTM 5) have been reported for surface waters in 20 Member States. Most reported dams, barriers and locks as the main pressure associated with these measures.

Seven Member States[39] expect progress on establishing longitudinal continuity based on measures planned to be implemented between 2018 and 2021. In addition, 2 Member States[40] expected to have met the objectives by then.

Measures to improve hydromorphology other than longitudinal continuity (KTM 6) have been reported for surface waters in most Member States, and for groundwater in 4 of them. In most cases, these measures plan to address pressures related to physical alteration of the channel, bed, riparian area and/or shore.

Member States are required to first derive ecological flow objectives (a prerequisite to reach good status in rivers) in their water bodies, and then to implement all necessary measures to reach these objectives (grouped in KTM 7), which include reducing abstraction or releasing enough water for downstream waters when operating dams.

In the second RBMPs ecological flows had been reported to be derived and implemented for all relevant water bodies in only very few Member States. Most reported that work was planned to address this gap in this cycle.

The information subsequently reported for PoM reporting in 2018 shows that 7 Member States have derived ecological flows objectives in all or some of the water bodies. This is similar to what was reported in 2016, indicating no apparent progress. For the others, work is ongoing, but the reported indicators do not make it possible to assess detailed progress.

In terms of measures implemented to reach ecological flow, 20 Member States reported on KTM7 for surface water, while only 5 reported on KTM 7 for groundwater.

4. Second preliminary flood risk assessments

A framework for flood risk management is now firmly established in the EU as attested by a Commission evaluation published in 2019[41].

Also for the second cycle of implementation (2016-2021), the first step under the Floods Directive was the preparation of preliminary flood risk assessments (PFRAs) and the

[39] Austria, Hungary, Ireland, Italy, Poland, Romania and Sweden
[40] Cyprus and Latvia
[41] To confirm this, the European Commission carried out an evaluation of the Floods Directive and published its findings in 2019
https://ec.europa.eu/environment/water/fitness_check_of_the_eu_water_legislation/index_en.htm

identification of areas of potential significant flood risks (APSFRs), by the end of 2018. Preliminary assessments are largely based on available information about past floods and on forecasts of potential future floods.

The Commission assessed Member States' second cycle PFRAs.[42] Since the previous cycle, half have improved data collection and/or methodologies to carry out preliminary flood risk assessments. In 12 Member States the criteria for identifying significant future floods have been updated based on current methodologies. Although the discourse around floods in urban areas and sea level rise has intensified, it is still river floods that are most frequently registered (two thirds of the total) as a source of significant flooding in the EU. For the vast majority of Member States there is some or strong evidence that the consequences of future flooding on human health, the environment, cultural heritage and economic activity are being considered. Attention to environment and cultural heritage appears to have risen since the first cycle since the percentage of areas of potential significant flood risk where environment and cultural heritage were not found to be relevant dropped by around 10 percentage points. The situation surrounding the recording of impacts from floods is clearer compared to the first cycle with nearly two thirds of Member States presenting strong evidence of a clear methodology for the assessment of past floods. However, in 60% of river basins in the EU there are no data on the costs from flood damages. There is therefore room for improvement since collecting such data aids the calculation of costs and benefits and the prioritisation of measures. Long term developments (socio-economic, infrastructure, land use) have been considered in most Member States but with varying degrees of rigour. There is also evidence that all Member States have considered climate change in their preliminary assessments; this is an improvement on the first cycle when 6 had not considered climate change and the case was unclear for another 5.

5. Cost and financing

Table 2 in section 3 shows that the two main impediments to timely implementation reported by Member States are a lack of financing and delays incurred over the course of implementing projects.

While Member States' reporting on costs and financing of the PoMs appears overall patchy, a consultant's study estimates[43] that the measures set out in the ensemble of the second RBMPs require investments of at least EUR 142 billion. This is an underestimation for the total costs, as there are significant data gaps and it excludes operational and infrastructure maintenance costs. For the FRMPs, the same source estimates a total of EUR14 billion, again most probably an underestimation. Member States are using a range of financing sources, in particular water and sanitation tariffs, EU funds and national public funds and to a lesser extent abstraction and pollution charges. As a whole, they make less use of private investment (contributions) and the more innovative forms of financing such as payment for ecosystem services (PES) schemes.

[42] For the first cycle (2010-2015) see https://ec.europa.eu/environment/water/flood_risk/overview.htm
[43] Woods &ACTeon (2021), Economic data related to the implementation of the WFD and the FD and the financing of measures," forthcoming report on behalf of DG environment.

On the financial capacity of the water sector, the study mentioned above found that about half of the Member States have a financial cost recovery rate of over 90%. The OECD[44] has reported that for the EU as a whole, users pay about 70 % of the financial cost of providing water services (through water tariffs), while the government sector finances the remaining 30 %. The two reports indicate large differences both across Member States and over the broad sectors of households, agriculture and industry.

In addition, the cost recovery of environmental and resource costs appears less successful. A recent European Court of Auditors report[45] points to the challenges related to pollution costs. In particular, it notes that is difficult to recover the cost increases of water services due to pollution originating from diffuse sources. A wider and better application of the polluter-pays principle would provide more incentives to polluters to abate and avoid pollution, also through their own environmental investments. Judging from the large number of water bodies not in good quantitative status[46], the potential for water prices to better reflect the actual scarcity of water does not seem fully appreciated; there is also need for sustained investments in water use efficiency. These efforts on incentives and efficiency contribute to determining the amount of capital investments needed for efficient sustainable management of increasingly scarce water resources.

6. Conclusions

Most Member States have made some progress in identifying the gap to good status for each significant pressure, and the level of implementation of measures required to achieve good status of water bodies. This is an encouraging improvement that will allow for better identification and prioritisation of the measures. Significant progress on implementing measures could be identified particularly in relation to tackling pollution as well as abstraction and water efficiency. It is positive to note that Member States are taking action to reduce the gap. It is clear, however, that the distance to be covered to full compliance with the Water Framework Directive's objectives is still considerable. In this context several obstacles are reported as keeping Member States from implementing their measures at speed, chiefly a lack of adequate finance.

With the present and future impacts of climate change, the challenge of water quantity management is becoming ever more urgent across Europe, affecting the achievement of the objectives of the water legislation. With the Floods Directive, the EU has a legal framework that is fit for purpose. Reducing flood risk where and when it matters most is, however, a matter of scrupulous and consistent implementation that requires sustained attention over a long period and cooperation across borders. The dramatic events of summer 2021 in Europe show that much remains to be done to reduce flood risk effectively.

Dealing with too little water is a matter of similar urgency. Unsustainable patterns of water use across Europe are compounded by climate change, generating higher levels of evaporation and longer periods of extreme droughts which add to already existing water

[44] OECD, Financing Water Supply, Sanitation and Flood Protection, 2020
[45] ECA's Special Report 12/2021, "The Polluter Pays Principle: Inconsistent application across EU environmental policies and actions", July 2021.
[46] 5th Implementation Report Water Framework Directive and Floods Directive, COM (2019) 95 final

scarcity in increasingly large parts of Europe. A multifaceted water resilience agenda has to be part of the response, in the context of global climate, health, biodiversity and pollution challenges.

Through the European Green Deal a water resilience agenda has started to emerge, with attention to water efficiency in various legislative reviews and in horizontal strategies such as the Circular Economy Action Plan and EU Climate Adaptation Strategy. There is also progress on this issue at sectoral level, for instance in agriculture, energy and transport; it is vital that this is strengthened further.

Water pricing is a powerful tool to improve water efficiency contributing to a more effective and sustainable water demand management. It requires a careful design in order to do justice to local conditions and social concerns (such as vulnerable household's access to affordable, high-quality drinking water, as promoted by the revised Drinking Water Directive). It also works best when aligned with policy measures on pollution abatement and support to innovation and investments in water efficiency.

Investments in water are win-win solutions – benefitting water and biodiversity/nature at large, while providing a stimulus for recovery and creating jobs. The resources put at the disposal of Member States through INVEST EU and the multi-annual financial framework should therefore be used to their full potential. Supported by the Taxonomy Regulation[47] for sustainable investments, they can be catalysts for systemic transformation and help mobilise efforts from national and private sources. Horizon Europe provides additional opportunities to invest in EU water research and innovation and better link implementation to society and citizens' needs.[48]

Europe has arrived at a turning point in water management, with the crucial next river basin management plans and flood risk management plans due in spring 2022. There is not much time left to 2027, when most possibilities for exemption from the obligations of the Water Framework Directive run out, and water bodies have to be in good status.

With still a majority of EU water bodies not in good status, a further acceleration of action by Member States is urgently needed. When taking the necessary measures, the European Green Deal is a unique opportunity that should be seized by Member States and stakeholder alike to secure a water-resilient future.

[47] Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, OJ L 198, 22.6.2020, p. 13

[48] Including a new generation of objective-driven and more ambitious partnerships (European Partnership Water security for the planet (Water4All); Partnership for a climate neutral, sustainable and productive Blue Economy (SBEP)), and R&I Missions, ("Oceans and waters", "Adaptation to Climate Change" and "Healthy Soils").