Council of the European Union

Brussels, 12 February 2025
(OR. en)

6014/25
ADD 3

ENV 63
CLIMA 27
AGRI 46
ENER 21
TRANS 22
PROCIV 11

COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	4 February 2025
To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2025) 15 final
Subject:	COMMISSION STAFF WORKING DOCUMENT Third River Basin Management Plans Second Flood Hazard and Risk Maps and Second Flood Risk Management Plans Member State: France Accompanying the document 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

Delegations will find attached document SWD(2025) 15 final.

Encl.: SWD(2025) 15 final

EUROPEAN
COMMISSION

Brussels, 4.2.2025
SWD(2025) 15 final

COMMISSION STAFF WORKING DOCUMENT

Third River Basin Management Plans
Second Flood Hazard and Risk Maps and Second Flood Risk Management Plans
Member State: France

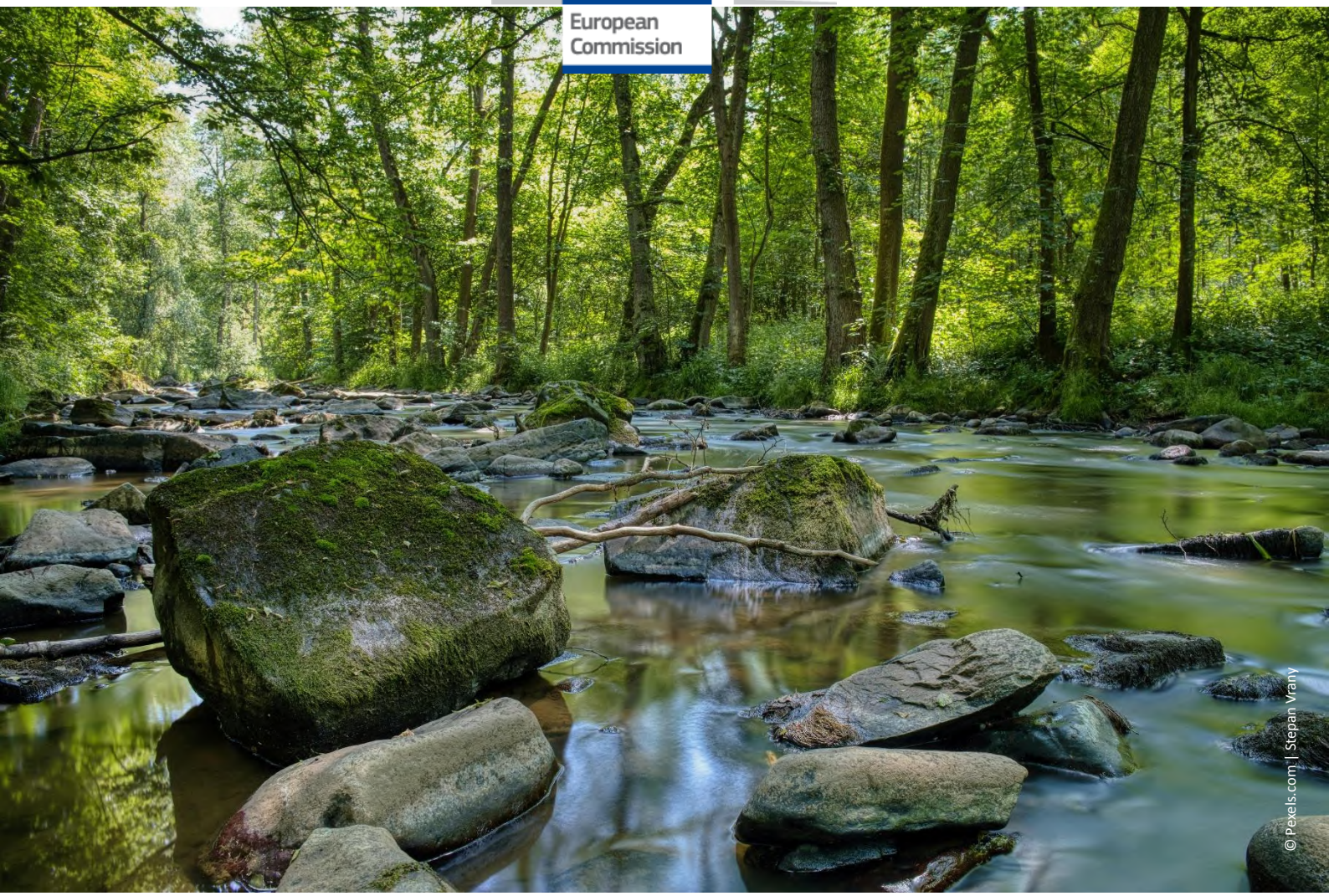
Accompanying the document

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)

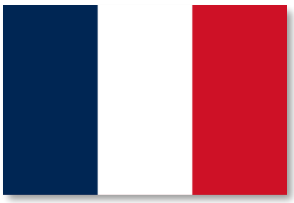
Third River Basin Management Plans
Second Flood Risk Management Plans

{COM(2025) 2 final} - {SWD(2025) 13 final} - {SWD(2025) 14 final} -
{SWD(2025) 16 final} - {SWD(2025) 17 final} - {SWD(2025) 18 final} -
{SWD(2025) 19 final} - {SWD(2025) 20 final} - {SWD(2025) 21 final} -
{SWD(2025) 22 final} - {SWD(2025) 23 final} - {SWD(2025) 24 final} -
{SWD(2025) 25 final} - {SWD(2025) 26 final} - {SWD(2025) 27 final} -
{SWD(2025) 28 final} - {SWD(2025) 29 final} - {SWD(2025) 30 final} -
{SWD(2025) 31 final} - {SWD(2025) 32 final} - {SWD(2025) 33 final} -
{SWD(2025) 34 final} - {SWD(2025) 35 final}



Country specific staff working document

France



ENVIRONMENT

Content

Content 2
SECTION A: WATER FRAMEWORK DIRECTIVE 3
1. General info, member state characterisation 4
2. Horizontal aspects 9
2.1 Governance 9
2.2 Characterization of River Basin District 10
3. Policy elements contributing to biodiversity and climate change adaptation 14
3.1 Surface Water: what is their ecological status or potential 14
3.2 Hydromorphological changes and artificialization (HMWBs and AWBs) 15
3.3 Groundwater bodies - have they sufficient water – quantitative status 16
3.4 Protected Areas (identification, monitoring, objectives and measures) 17
3.5 What is being done to prevent/reduce hydromorphological pressures 19
3.6 What France is doing for abstractions and water scarcity 20
3.7 Adaptation to climate change 21
4. Policy elements contributing to zero pollution 22
4.1 Surface Water: what is their chemical status 22
4.2 Groundwater Bodies: what is their chemical status 24
4.3 What France is doing to combat pollution from agriculture 26
4.4 What France is doing to combat pollution from other sectors 27
4.5 What France is doing to combat significant pressures – overall assessment of the Programmes of Measures 28
5. Exemptions and economics 28
5.1 To what extent are exemptions applied in France 28
5.2 Use of economic analysis and water pricing – cost recovery 31
6. WFD recommendations 32
SECTION B: FLOODS DIRECTIVE 36
7. Flood risk management under floods directive (FD) 37
7.1 Flood hazard and risk maps 37
7.2 Flood risk management plans 38
8. FD recommendations 41

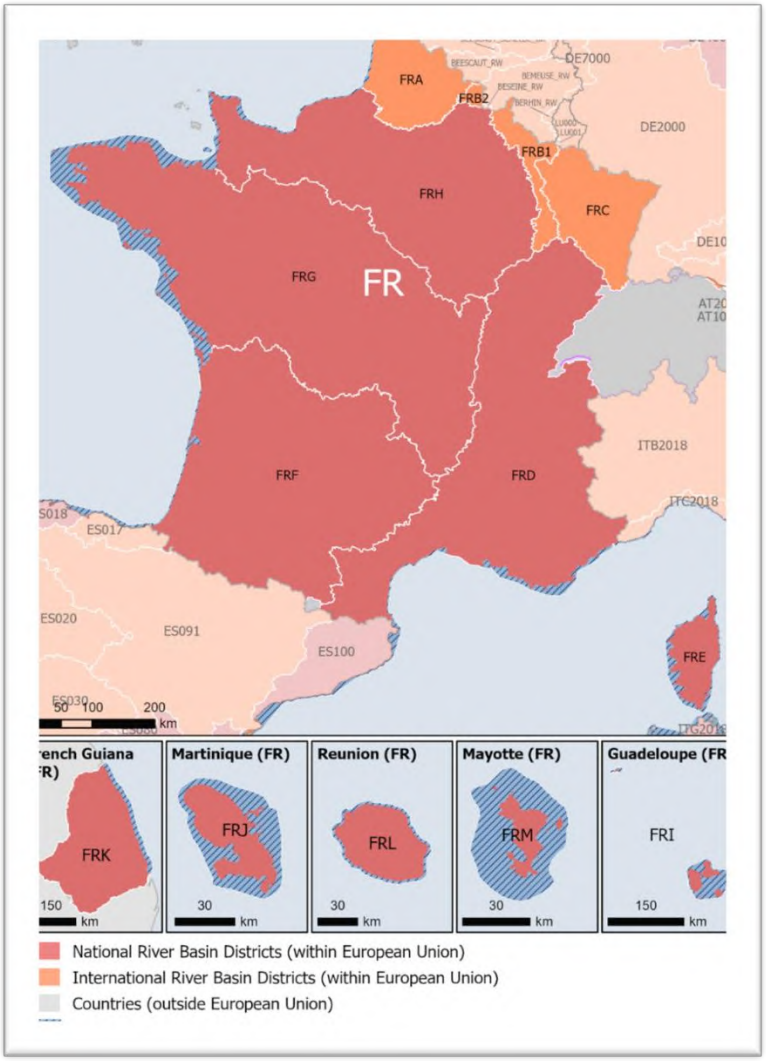
SECTION A:

WATER FRAMEWORK DIRECTIVE

1. General info, member state characterisation

France being the largest country in the EU, is home to a great diversity of land-based and marine ecosystems, thanks to the position of the European mainland and the outermost regions and overseas territories. Bordered by 8 other countries, it lies split between the Atlantic and the Mediterranean. France has a population of 67 million people and a population density of 105.6 people per km² which is roughly the EU average. France is the third-biggest manufacturing country in Europe. France's agricultural sector is among the largest in value, adding up to EUR 72.9 billion with 456 000 farms of an average size of 69 hectares. France including its outermost regions has 28% of its land covered by protected nature areas. However, its overseas territories are very big biodiversity hotspots and 52% of French Guyana land is covered by protected areas.

France has an extensive river system consisting of the four major rivers Seine, the Loire, the Garonne, the Rhône and their tributaries, whose combined catchment includes over 62% of the metropolitan territory. The Rhône divides the Massif Central from the still glacier topped Alps and flows into the Mediterranean Sea. The Garonne meets the Dordogne just after Bordeaux, forming the Gironde estuary, the largest estuary in Western Europe which after approximately 100 kilometres empties into the Atlantic Ocean. Other water courses drain towards the Meuse and Rhine along the northeastern borders.



Relevant outermost regions for the 3rd River Basin Management Plans next to South American French Guyana are two departments in the Indian Pacific: Mayotte and Reunion; two departments and one overseas community in the Caribbean: Martinique, Guadeloupe and St Martin. France has 11 million square kilometres of marine waters within three oceans under its jurisdiction, of which 97% are overseas. The climate of the Indian Pacific islands Reunion and Mayotte has a strong seasonal irregularity, with heavy intensive rainfalls occurring in a short summer period. Reunion Island is regularly exposed to cyclones. All Caribbean islands are located along the paths of cyclones/storms too. While rivers are abundant in Guadeloupe and Martinique, freshwater is severely lacking in St Martin, and wetlands are limited. French Guyana (more than one-seventh the size of Metropolitan France) is mostly (90%) covered by primary tropical forests and has 8% of all French surface water bodies. The territory is subject to the Amazon estuary dynamics. 52% of its land territory is covered by natural parks and other protected areas, including the 20300 km2 “Parc Amazonien de Guyane”. Given this diversity, France has a very large number of water bodies; more than 11.000.

Reporting

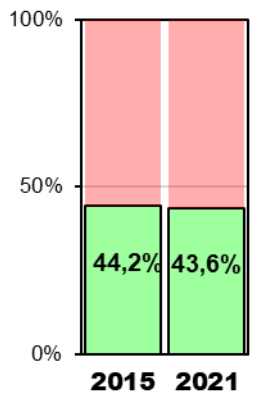
The deadline for reporting the 3rd RBMPs was in March 2022. The Commission and the EEA together with Member States developed an electronic reporting system in WISE (Water Information System for Europe). Its use was voluntary. Some Member States used it to fulfil their obligations, others reported

the plans in pdf format. The cut-off date for the WISE e-reporting was September 2023 and the MS were assessed based on the datasets available by this date.

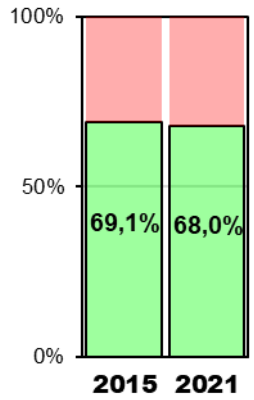
By September 2023 France have not submitted full electronic reporting, but data for majority of RBDs were available. Therefore, the assessment is based on the dataset available at that time and the missing RBDs are based on the data mining of the pdf RBMPs.

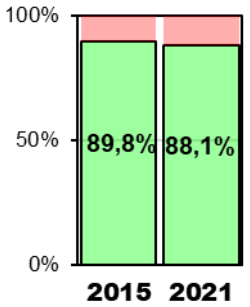
Despite the cut off dates for the production of this report, reporting continued, and, for the State of Water report, the EEA aggregated the results available by July 2024 in their products and dashboards available at WISE Freshwater web portal. This 3rd RBMPs Member State Compliance Assessment report has been partially drafted based on information in the Member State's RBMPs and of information submitted through the Water Information System for Europe (WISE) electronic reporting system. At the time of reporting the WISE electronic reporting covered all RBDs except the 2 RBDs, Reunion and French Guyana (together covering 10% of French surface water bodies and of 5% ground water bodies). The more detailed analyses have focused on mainly 4 River Basin Districts (Scheldt, Rhone-Mediterranean, Guadeloupe and Mayotte), combined with more thematic checks on Seine-Normandy and Loire-Bretagne. It had to be based on a combined assessment of electronic and non-electronic data which might have resulted in a certain distortion of results.

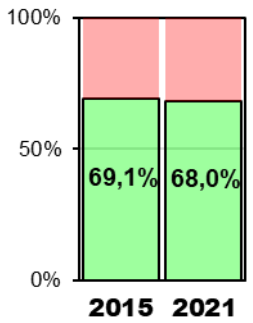
Changes in Status, Pressures, Exemptions & Measures[1]

Surface Water Bodies (11406)	Trend (% good status/potential)	Main Pressures & Changes & Exemptions
ECOLOGICAL STATUS		In the 3rd RBMP e-reporting complemented with datamining in the pdf of FRK (French Guyana), 43,6% of the surface waterbodies (SWBs) is in good or high ecological status /potential. This small decrease from 44.2% (2nd RBMP) is related to a relatively high decrease in French Guyana (FRK) representing 882 (8%) of the French waterbodies, because of improved monitoring. France without French Guiana has in total 0,1% increase in good ecological status water bodies. Exemptions applied according to Article 4(4) have been justified on grounds of technical feasibility (23.8% of SWBs), disproportionate cost (1.4% of SWBs) and natural conditions (3.5% of SWBs). Article 4(5) exemptions for lowered objectives on the grounds of infeasibility (32% of SWBs) and disproportionate costs (16% of SWBs). France estimates for 97.9 % of surface water bodies environmental objectives will be in reached in 2027. This includes the high level (32%) of 4(5) exemptions lowered objectives that France estimates to be achieved in 2027. This means 65,9% good status/potential estimation in 2027. 1,8% of the environmental (possibly lowered) objectives will be reached beyond 2027. This leaves 0,3% of unknown when to be reached for ecological good status/ potential or lowered ecological objective. The quality of assessments varies significantly among the RBDs. 8% of all waterbodies has been downgraded in status because according to the reporting too high concentrations of new French RBSPs (11 added and one removed since 2nd RBMP). However, RBSP are not monitored systematically in a high percentages within a waterbody or in all categories of waterbodies and/or included in ecological status assessments in all RBDs. An absence of reference conditions for some biological quality elements (like fish for big rivers) and for physico-chemical quality elements for many coastal and transitional water body types is noted.

[1] This assessment is based upon the WSP assessment D1 draft, the response of France including the WSP corrections or adaptations because of the most important elements in this response and upon the electronic reporting reported by France before the cutoff date 01-09-2023. Detailed analyses in the assessment is not including FRK (French Guyana) nor FRL (Réunion), that were included in 2016. Therefore comparing graphs with the 1st and 2nd RBMP do include FRK and FRL, partly based on datamining.

CHEMICAL STATUS		Progress is mixed. There is an increase of SWBs in good chemical statusin comparison to the 2nd RBMP, despite the present exclusion of Guyana and Reunion. However, the number of water bodies in poor status increased also from 16 to 22% **in** 3rd RBMPs thanks to improved known status. Exemptions applied according to Article 4(4) have been justified on grounds of technical feasibility (19.6% of SWBs), disproportionate cost (0.4% of SWBs) and natural conditions (11.1% of SWBs). Article 4(5) exemptions with lowered objectives are justified on the grounds of infeasibility (0.4% of SWBs) and disproportionate costs (0.01% of SWBs). It is expected that in 2027 approximately 68,4% of the SWBs will be in good chemical status, 16,7 % is estimated to achieve this beyond 2027 and what will be the fate of 14,6% of the SWBs in 2027 is unknown.

Ground Water Bodies	Trend (% good status/potential)	Main Pressures & Changes & Exemptions
QUANTITATIVE STATUS		Based on 3rd RBMPs e-reporting complemented with datamining of the pdf of FRK (French Guiana) 88,1% of the groundwater bodies are in good quantitative status. The main reason for extra failing quantitative status is full compliance of quantitative status assessment methods including in practise mainly the needs of aquatic ecosystems in associated surface waters. The needs of ground water dependant terrestrial ecosystems are formally included in the applied assessment method but in practise often not yet included for e.g. 80% of N2000 areas. Changes in the water balance / lowering of the water table (4.2% of GWBs) is included. Exemptions applied according to Article 4(4) have been justified on grounds of technical feasibility (6.5% of SWBs), disproportionate cost (0.7% of SWBs) and natural conditions (1.3% of SWBs). Article 4(5) on the grounds of infeasibility (2% of GWBs) and disproportionate costs (0.4% of GWBs). Furthermore, based on the 3rd RBMPs e-reporting and pdf mining, at least 2 % of total GWBs are at risk of

		failing to achieve good quantitative status by 2027. The GWBs at risk of failing to achieve good quantitative status are in eight RBDs with available e-reporting.
CHEMICAL STATUS		Based on 3rd RBMPs e-reporting complemented by pdf datamining, there is a slight decrease in good chemical status of groundwater bodies. Given the reality that 50% of the ground water bodies has been redelineated, the comparison in % of numbers of waterbodies is not justified. The total GWB area has however stayed the same. here are 53 % of groundwater bodies having no impact. Exemptions applied according to Article 4(4) have been justified on grounds of technical feasibility (11.6% of SWBs), disproportionate cost (8.7% of SWBs) and natural conditions (17.1% of SWBs). Article 4(5) exemptions lowering the objectives have been justified on the grounds of infeasibility (15.5% of GWBs) and disproportionate costs (0.4% of GWBs). Overall confidence in the assessment decreased. The reasons for this are still not clear, but possibly the new delineation of about 50% of all ground water bodies is the cause. The top five pollutants causing failure to achieve good chemical status of GWBs are pesticides including their relevant metabolites, nitrate, ammonium, total trichloroethylene and tetrachloroethylene, and phosphate. In the 3rd RBMPs e-reporting complemented with datamining, 7,7% or 53 GWBs are expected to fail to achieve good chemical status by 2027.

2. Horizontal aspects

2.1 Governance

France has 12 River Basin Management Plans (RBMPs) covering 14 River Basin Districts (RBDs). Five out of these 12 are outside continental Europe. This was similar in the 2nd RBMP but in the 1st RBMP there was not one for Mayotte.

The plans list three levels of competent authorities at national and River Basin District (RBD) level. These include 12 *Comités de bassin* (Basin Committees) and two other levels are the *Prefet coordinateur de basin* and the Ministry of Ecological Transition.

The Rhine-Meuse Committee covers the Meuse and Rhine River Basin Districts. The Artois-Picardie Committee covers the Scheldt and Sambre. These Committees are responsible for the preparation of the RBMPs. For each Committee, there is a Basin Coordinating Prefect, responsible for the assessment of ground and surface water, for the coordination of implementation, economic analysis, enforcement of regulations, monitoring of groundwater and surface water, preparation and implementation of the Programme of Measures, pressure and impact analysis, public participation. Exceptionally for the RBD Corsica and Mayotte, instead of a Prefect, the Competent Authority is the *Président du conseil executif de Corse* and the Representative of the State, respectively. Finally, the Ministry of Ecological Transition is responsible for reporting to the European Commission. The implementation of the WFD at the local level has evolved as France has reformed the structure of the local authorities to rationalise the number and organisation of various cooperative structures responsible for water supply (462 structures), sanitation (954 collective or 148 non- collective), flood prevention and aquatic environment management (108 new competence GEMAPI).

All French RBMPs include objectives for the Floods Directive (FD) and the Marine Strategy Framework Directive (MSFD). The consultation process for the French National RBMP's appears to have followed the requisite six months of public consultation for all RBDs except for Mayotte. Mayotte had its draft RBMP available for six months of consultation, but information is lacking for other elements. The significant water management issues were consulted through an online survey without a summary of the significant issues provided to participants.

As regards consultation, more information on the transparency of the consultation process, and the comments addressed during the consultation and the feedback provided to those comments should be made available to the public after the consultation. A summary of the consultation should also be provided. It is not clear how stakeholders are involved in the preparation of the RBMPs on the Guyanne and Réunion RBDs. It should be noted that France was late in reporting its RBMPs.

From the 14 River Basin Districts, there are 7 which are transboundary: Scheldt, Meuse, Sambre, Rhine, Rhone and coastal Mediterranean and Seine. The management of these rivers also depend on decisions taken by other countries. As regards transboundary cooperation, the Scheldt, Meuse and Rhine are governed by International River Basin Commissions. The other stretches of transboundary rivers (Seine, tributary of the Po, tributary of the Ebro and Rhone) have forms of bilateral cooperation although no international RBMP has been adopted. The Rhone-Mediterranean RBMP is considering the establishment of an institutional space for a comprehensive collaboration with Switzerland given the impact of climate change on the Rhone in the decades to come.

2.2 Characterization of River Basin District

France has 11 406 surface water bodies plus 689 groundwater bodies (see table 1). A few Metropolitan River Basin Districts are dominating in number of river water bodies (RWBs): Adour-Garonne (2680 RWBs), Rhone-Mediterranean (2638 RWBs), Loire-Brittany (1887 RWBs), Seine-Normandy (1651 RWBs). French Guyana however, in the Amazone delta also has 851 river water bodies and contributes 7.5% to the French surface water bodies. In the coastal waters the Atlantic/North-Sea coastal water bodies (72) dominate in numbers the Mediterranean (46), Caribbean (30) or Pacific (29) ones. Table 1 lists all the water bodies designated by France per river basin district (RBD) and per type of water.

Table 1: Overview of France's River Basin Districts (RBDs)

RBD	Name	Rivers	Lakes	Transitional Waters	Coastal Waters	Groundwater Bodies
FRA	Scheldt	55	4	4	5	16
FRB 1	Meuse	141	3	0	0	7
FRB 2	Sambre	11	1	0	0	1
FRC	Rhine	473	24	0	0	12
FRD	Rhone-Mediterranean	2638	94	27	32	241
FRE	Corsica	210	6	4	14	15
FRF	Adour-Garonne	2680	107	11	10	144
FRG	Loire-Brittany	1887	108	30	39	146
FRH	Seine-Normandy	1651	46	8	19	57
-	Guadeloupe	47	1	0	11	7
-	Martinique	20	1	1	19	8
-	Guyana	851	1	29	1	2
-	Réunion	24	1	2	12	27
-	Mayotte	26	0	0	17	6
-	**TOTAL**	**10714**	**397**	**116**	**179**	**689**

The number of surface water types in each RBD has not really changed since the 2nd RBMPs largely due to a French decree of 2010 establishes the national typology of surface water, including the methodologies and criteria to be used. However, for groundwater bodies, more than half of them have been subject to re-delineation. Those changes are concentrated mainly in a few metropolitan RBDs (FRF and FRG) which have many groundwater bodies. Due to the new change in typology, the

comparability between cycles is rendered more difficult, particularly as regards monitoring and assessment of state. Through this re-delineation the number of groundwater bodies in France increased by 6.8% from 645 (2nd RBMPs) to 689 (3rd RBMPs), but the total groundwater body area did not change. France reports no transboundary groundwater bodies in the 3rd RBMPs e-reporting[2].

To attribute different classes to a water body, clear thresholds are needed for the poor, moderate, good and high ecological status. Reference conditions must be set for good status, underpinned by similar ecologically healthy natural water bodies having high and good status. France established these reference conditions for all biological quality elements for most river types and for some biological quality elements in most lake types. Equally, reference conditions have been established for some physico-chemical quality elements in most water types.

However, regrettably, as regards hydromorphological quality elements, just as it was the case in the 2nd RBMPs, there are no type-specific reference conditions for any of the water body types across all water categories (in the 12 RBDs for which electronic reporting is available). As regards transitional waters and most coastal waters, some type-specific reference conditions are missing for biological quality elements (see section 3.1 for more detail).

Pressures

Hydromorphological pressures (alteration of the riverbed, shores or riparian areas and various forms of barriers) touching 65 % of the water bodies is the most significant pressure on French surface water bodies. The reporting does not indicate the causes of these dominant pressures in France. It can be construed that the large number of heavily modified water bodies (HMWBs) gives an indication of the magnitude of the activities in France having an impact on hydromorphology. The HMWBs are related to flood protection (35%), hydropower (23%), transport (18%), urban development or other use (15%) for the most important activities. Smaller hydromorphological pressures not yet leading to the designation of water bodies as heavily modified, are most probably related to hydropower, transport and urbanisation as well, agriculture may also play a role.

France is the largest producer of hydroelectricity in the European Union (France 67 TWh/year[3]. Metropolitan France has developed its gross hydropower potential to more than 90%. and that contributes between 11 and 13%[4] of the country's gross final energy consumption. More than 2000 contracts are however signed for small and micro power plants in France producing < 10 MW and together less than 1% of the French energy consumption but are contributing to hydro morphological pressures. [5] A small increase in French hydroelectricity production is still foreseen till 2050[6]. It is important to mention the ongoing infringement procedure against France to restore the river continuity in a part of the Rhine, as agreed in the context of the International Commission for the Protection of the Rhine. As a result, considerable efforts are being made to improve continuity, affected by hydropower in the Upper Rhine.

Another energy related cause of hydro morphological pressures is the nuclear power production and conventional power production. France produces about 40,6%[7] of its electricity consumption with

[2] However, the Rhone-Mediterranean RBD (FRD) reports 6 transboundary GWBs in its 3rd RBMP document.
[3] 2017 Hydropower Status Report
[4] Share of electricity from hydropower France 2022 | Statista
[5] Small and Micro Hydropower – European Rivers Network (ern.org)
[6] Documents | Cour des comptes (ccomptes.fr)
[7] 2022 European Semester: Country Reports - European Commission (europa.eu)

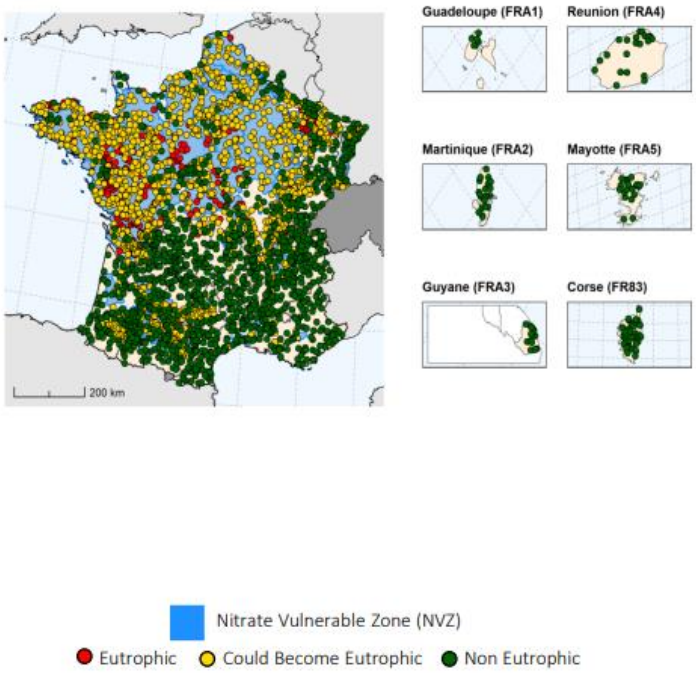
nuclear power using large amounts of water as a vital cooling agent. France has 18 nuclear power plants (totalling 56 reactors), producing 70% of its total electricity production, making it the second largest nuclear energy producer globally after the U.S.A[8]. Conventional **f**ossil fuel power plants add to the energy production related hydromorphological pressures because of the cooling water needed.

In France 65% of the freight transport in tonne-km in 2022 was maritime and 2 % inland waterway[9]. Several rivers (Rhine, Rhone, Garonne, Seine, Scheldt) and added canals are important for inland shipping and there are important harbours at the Atlantic and Mediterranean coast.

The second most important significant pressure in France comes from agriculture. 41% of the surface water bodies (including FRK and FRL) are under pressure from diffuse pesticides and nutrient diffuse pollution from agriculture. Eutrophication of the surface water bodies, and some coastal areas is acute and recurrent episodes of green algae with massive discharges of algae can be observed in some coastal areas. This was the subject of a critical report of the French Court of Auditors[10]. Next to the pressure on the surface water it is a cause of great concern that 31% of the groundwater bodies are polluted by pesticides (in 84% of the failing GWBs) and nitrates (in 49% of failing GWBs) increasingly forcing to close drinking water wells. France identifies in the 3rd RBMPs water abstraction as a significant pressure for only 2 RBDs, namely the Adour-Garonne RBD (FRF) and Mayotte RBD (FRM). The droughts faced in 2022 seem to have increased the awareness of abstraction pressures in more RBDs. Moreover, in the electronic reporting for surface water, abstractions in France (without FRK and FRL) have been identified as a significant pressure for a large share of the surface waterbodies (175) causing the failure to achieve good ecological status or potential. These SWBs are located in almost all RBDs with available e-reporting, excluding FRB2 Sambre. Metropolitan France has only irrigation on 4.9% of the agricultural land, largely for (fodder) corn, but these areas are concentrated where there are already serious episodes of water stress. Irrigation is much more deployed in the outermost and overseas territories where 15% of the farmland is irrigated.

[8] France 2022 (iaea.org)
[9] Freight transport statistics - modal split - Statistics Explained (europa.eu)
[10] La politique publique de lutte contre la prolifération des algues vertes en Bretagne | Cour des comptes (ccomptes.fr)

Figure 1: Map of the monitoring points showing eutrophication assessment in France, according to the reporting of the Nitrates Directive



Source: Joint Research Center of European Commission (n.d.). JRC NITRATES DIRECTIVE - Reporting Period 7 (2016-2019) Trophic Status. [online] water.jrc.ec.europa.eu. Available at: https://water.jrc.ec.europa.eu/portal/apps/dashboards/cb6034c2a75e4df282f8a62f90c16caa

Note: 1% of the monitoring stations are above the threshold of 50mg/l

Water abstraction (understood as consumptive use or net consumption) is identified as a significant pressure at the RBD level or in significant portions of an RBD for only two RBDs in France in the 3rd RBMPs e-reported in sept 2023, namely the Adour-Garonne RBD (FRF) and the Mayotte RBD (FRM) [11]. This constitutes notwithstanding the limited number, a meaningful change since the 2nd RBMPs, when water abstraction was not reported as a significant pressure in any RBD. The RBDs Rhone-Mediterranean (incl. Corse), Reunion, Martinique and Guadeloupe do not report abstraction as a significant pressure, in spite significant abstractions for irrigation and cooling.

For groundwater, abstractions have been identified as a significant pressure for 73 groundwater [12]bodies (GWBs) (i.e. 10.6 % of total GWBs), which are in poor quantitative status in 2021. Furthermore, water abstraction is identified as a significant pressure for at least 91 GWBs (i.e. 13.2 % of total GWBs), which are at risk of failing to achieve good quantitative status by 2027. For surface water, abstractions have been identified as a significant pressure for at least 17.3 % of total SWBs (1971 SWBs) failing to achieve good ecological status or potential.

[11] However, it is noted that quantitative management is acknowledged as 1 out of 4 Significant Water Management Issues (SWMIs) reported in the 3rd RBMP of the Loire-Brittany RBD and as 1 out of 7 Strategic Objectives reported in the 3rd RBMPs of the Rhone-Mediterranean RBD. The potential contradiction with available e-reporting for these two RBDs needs further clarification by the country.

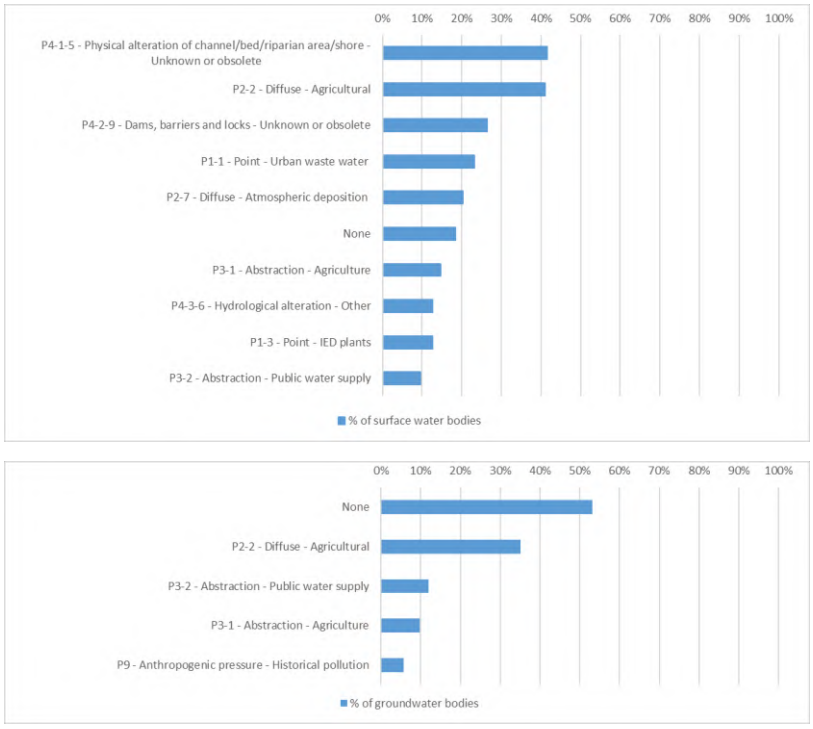
[12] These specific numbers are derived without counting FRK and FRL, these may be slightly higher as Reunion has water stress.

A recent increase in the construction of off-stream reservoirs, mainly for irrigation purposes, which are filled with groundwater in the winter, may impact the quantitative groundwater status, especially when the replenishment with climate change is structurally decreasing. This groundwater may be necessary for depending or associated ecosystems and thus this could put ecosystems are risk. Such reservoirs have raised legal, social and environmental concerns and are the subject of very heated debates and frequent litigations.

The development of new reservoirs, dams and water transfers could be considered a maladaptation issue, if not properly justified with exemptions in accordance with all elements of Article 4(7) where necessary (see 3.7) and fully consistent with the water scenarios, investment planning, cost recovery and pricing policies, as laid down in the RBMP. Possible cumulative effects on the hydrological cycle and climate change should be considered. No information or justification has however been reported or announced regarding the mentioned water transfers or reservoirs in the 3rd RBMP reporting (see 5.1).

French water management is also facing increasing pressures from invasive alien species, impacting the ecology and/or the economy and even the social well-being. The pressure of invasive alien species is especially high in the French Outermost regions, having each their own list in the French legislation (e.g. the brown rat as a reason for bird species to disappear). Invasive water plants that are of European and of French concern include 33 species relevant for fresh and brackish water in France including its Outermost regions. Plants like the yellow flowering water primrose (Ludwigia grandiflora) and the purple flowering water hyacinth (Pontederia crassipes) are fast multiplying and completely suppressing indigenous species in nutrient rich aquatic environments.

Figure 2 : The most significant pressures on surface water bodies and groundwater bodies in France in the 3rd RBMPs (expressed as percentages of numbers of water bodies)



Source: 3rd RBMPs e-reporting

3. Policy elements contributing to biodiversity and climate change adaptation

3.1 Surface Water: what is their ecological status or potential

Monitoring

France already had an extensive monitoring network in 2nd RBMPs. This has been a bit expanded and more biological quality elements are now monitored, giving a more precise picture of the ecological status. There are two types of monitoring: i) operational monitoring to determine the status and which covers all water bodies at risk and ii) surveillance monitoring in sufficient representative points aimed rather at identifying impacts and long-term changes.

There is a broad coverage: 45% of all river water bodies are monitored for River Basin Specific Pollutants (FRK and FRL not counted), 83% of the lake water bodies, 100% of the coastal and 89% of the transitional water bodies. However, the monitoring of physico-chemical quality elements (including the nutrients) in coastal waters has been significantly decreased in the FRD and FRE river basin districts which concerns the Mediterranean coast. Whereas in the Atlantic coast, the monitoring of physico- chemical parameters is increasing in the FRF and FRH districts.

As regards hydromorphological quality elements, there is a full methodology to monitor them including class boundary values for rivers and lakes. These quality elements are, however, monitored in a limited number of water bodies, despite the magnitude of the hydromorphological pressures. France indicated that expert judgement is used also to complement the very limited data on hydromorphological quality.

For this planning period, 11 national new River Basin Specific Pollutants have been added, and one is declassified. They do not seem to be systematically monitored in all RBDs the same way, nor in all water body types and in a rather limited amount of water bodies. This makes it difficult to ascertain how they are considered in the assessment and what is their influence – as 11 substances extra may trigger failures- in the status assessment.

Status assessment

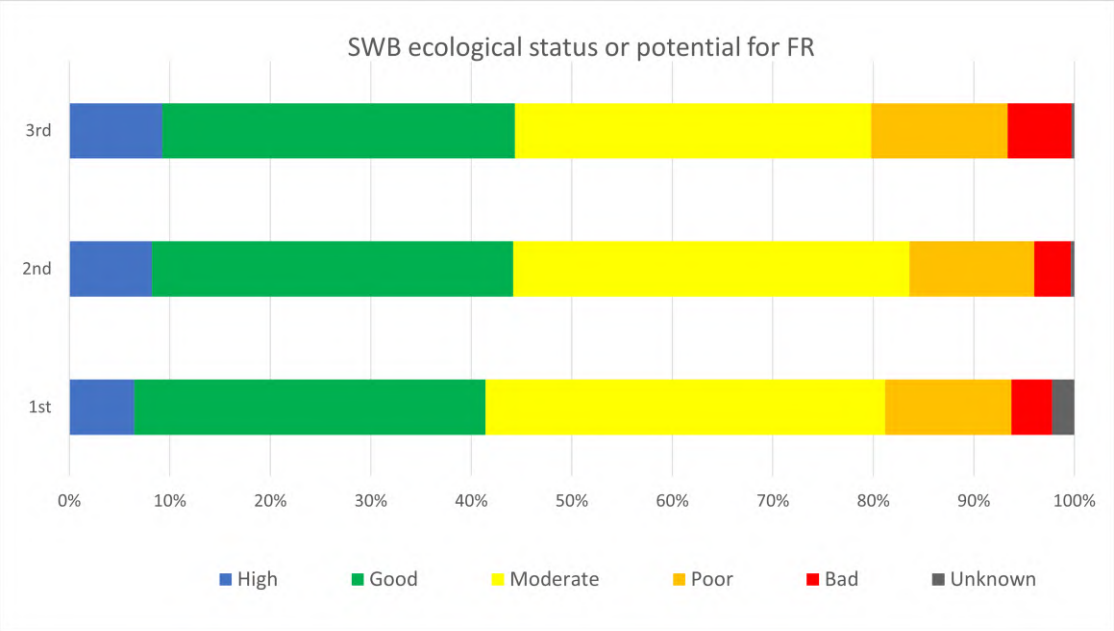
A variety of different methodologies can be observed in the different River Basin Districts. The assessments seem to be based on monitoring data featuring different types of gaps, showing differences between the RBDs and among the types of water concerned. This reduces considerably the comparability between RBDs.

The status assessments of many transitional and coastal water bodies may present a considerable uncertainty since they do not seem to have reference conditions and there are gaps on the data on nutrients. France does not have intercalibrated reference conditions for fish in transitional waters nor in very large rivers, and for benthic fauna in very large rivers. For several types of lakes, the intercalibration of reference conditions for benthic fauna is in progress. It is worth mentioning that since there are no reference conditions set for hydromorphological pressures, as mentioned earlier, these pressures, defined as quite significant, are not considered in the status assessment, except for a few river and coastal water bodies in good ecological status. For the river water bodies, 80% of the

water bodies now have a status assessment including consideration of data on nitrates. 53% of all the water bodies have an ecological status assessment based on monitoring and 1% on expert judgement (especially in outermost regions). It is worth mentioning that the monitoring of biological elements has improved and expanded, but with a significant higher relative frequency in rivers and lakes, than in transitional and coastal water bodies. The results of the phytoplankton monitoring show a slight improvement in the proportion of good status since the 2nd RBMPs, but a decrease for all other biological quality elements.

Figure 2 shows the reported evolution of the ecological status in the 1st, 2nd, and 3rd RBMPs and the estimated achievement of "good or better status" or "achieved less stringent objectives" by 2027 and a small proportion of water bodies "failing to achieve good status by 2027".

Figure 3: Ecological status or potential of surface water bodies in the 1st, 2nd, and 3rd RBMPs



Source: 3rd RBMPs e-reporting and datamining FRK

The data shows a reduction in the number of water bodies in good status which can be, at least partially, explained by the increase in knowledge and monitoring.

3.2 Hydromorphological changes and artificialization (HMWBs and AWBs)

Hydromorphological characteristics of surface water bodies concern the quantity and dynamics of water flow, the connection of surface water bodies to groundwater bodies, continuity of rivers, as well as river depth, river width and their variation in structure as well as the substrate of the riverbed structure of the riparian zone. As shown in Figure 3, the level of human intervention in the water system is very significant, particularly regarding lakes and transitional waters. The number of HMWBs and artificial water bodies compared to the 2nd RBMP are stable. The plans include the reasons that triggered the heavy modifications for HMWBs. No information could be found to explain the main causes for artificial water bodies.

Environmental objectives have been set for all modified water bodies, but the definitions of the good environmental potential (GEP) for heavily modified water bodies (HMWBs) are not clearly established in particular as regards the aspects of mitigating and compensating measures. The details vary across the RBDs: for some RBDs, no information could be found, and for others, an indication was given that definition of GEP is still under development. A majority of France's heavily modified water bodies still do not reach good ecological potential and 72 % of the HMWBs and AWs get lowered objectives in this 3rd RBMP applying Art. 4(5).

Figure 4: Modification of water bodies for different categories

Modifications	Rivers (% of total rivers)	Lakes (% of total lakes)	Transitional Waters (% of total TWs)	Coastal Waters (% of total CWs)	Total (% of total SWBs)
HEAVILY MODIFIED	4,80%	68%	31%	6,60%	7%
ARTIFICIAL	1,20%	15%	0%	0%	2%

It should be stressed that no information is found on the mitigation measures needed to reach a good ecological potential in the 3rd RBMPs, although these were reported in the 2nd RBMPs for the 9 Metropolitan RBDs and for certain Caribean RBDs. It is important to start implementing the necessary measures for these water bodies before 2027 (see section 5.1).

3.3 Groundwater bodies - have they sufficient water – quantitative status

It is noted that 72.6% of France's groundwater bodies (excluding FRK and FRL) are subject to quantitative monitoring. This may seem a slight reduction compared to the previous cycle, where 74.7% had quantitative monitoring. As mentioned earlier, given the changes in delineation creating a 6,8% increase in groundwater bodies this is probably an operational consequence. Yet, given the increasing effects of climate change, France is advised to the improve their quantitative monitoring.

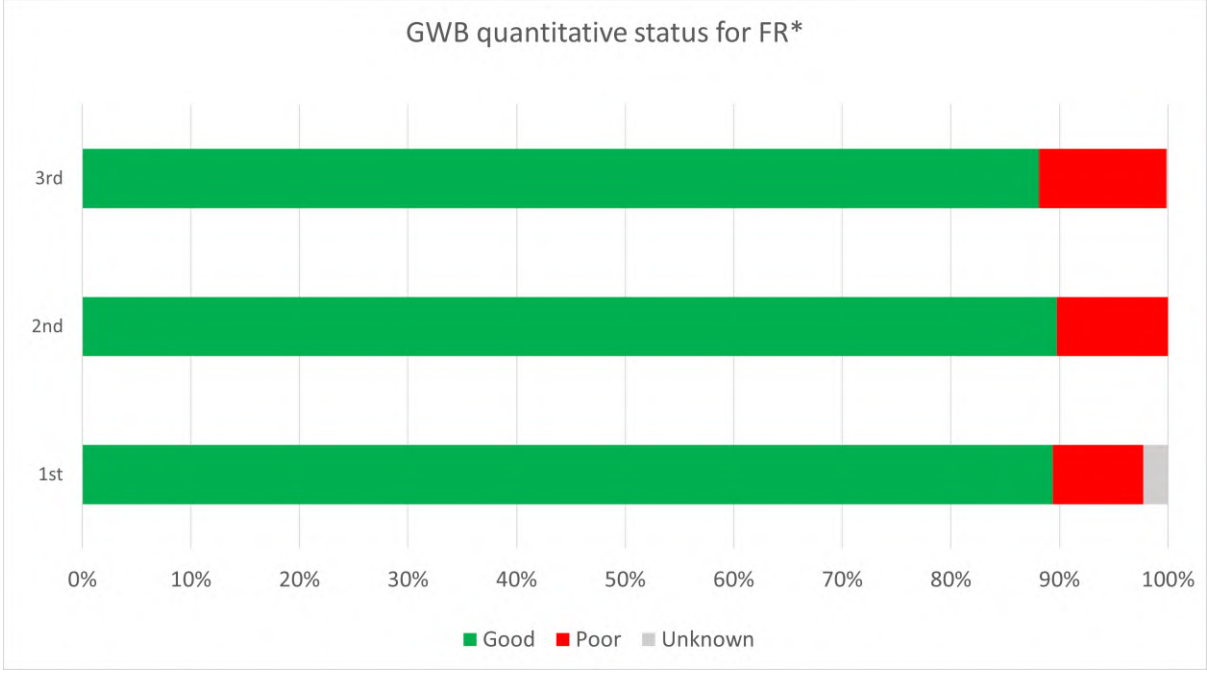
The assessment of quantitative status considers general quality, as well as impacts on Groundwater Associated Aquatic Ecosystems (GWAAEs) and impacts on Groundwater Dependent Terrestrial Ecosystems (GWDTEs), saline or other intrusions and impacts on drinking water protected points in all 12 RBD's[13]. This is a significant improvement in methodology compared to 2015. Then GWAAEs and GWDTEs were not considered in all RBDs in the groundwater chemical assessment. [14]. This is an improvement compared to the previous cycle, where they were not considered in all RBDs.

However, the knowledge of the needs of these sensitive dependent ecosystems does not seem to be available for 75 % of the N2000 areas depending on these groundwater bodies (see 3.4) and for sensitive aquatic ecosystems only formal surface water bodies are included. Hence to accurately

[13] with e-reported data except FRK and FRL
[14] with available e-reporting at 1 sept 2023

consider the needs of ecosystems, knowledge should be improved to establish an accurate assessment of the good quantitative status.

Figure 5: The evolution of the good quantitative status over the different cycles including FRK and FRL



Source: e-reporting complemented with datamining in FRK

It is a matter of strong concern that, in metropolitan France, at least 10.6% of the groundwater bodies are in poor quantitative status because of abstractions exceeding the available groundwater resource. This sometimes causes saline intrusions that have a very strong impact on ecological and chemical status. For one groundwater body the status is still unknown. The groundwater bodies in poor quantitative status or at risk of failing are located in 8 out of 12 RBDs with available e-reporting[15]: Scheldt RBD (FRA), Rhine RBD (FRC), Rhone-Mediterranean RBD (FRD), Corsica RBD (FRE), Adour-Garonne RBD (FRF), Loire-Brittany RBD (FRG), Guadeloupe RBD (FRI), Mayotte RBD (FRM). Graph 3.3 shows the evolution compared to the first and second RBMP[16]. This percentage in poor quantitative status has largely been the same over the first two cycles (9% in the 2009 assessment and 10.2% in the 2015 assessment), but now it amounts to 11,9 %. This indicates a slight decrease in good quantitative status groundwater bodies which could be partially caused by the changes in delineation or a better assessment of the water needs of dependent ecosystems. It is noted that France expects to achieve 100% good quantitative status by 2027 despite the stagnant situation.

3.4 Protected Areas (identification, monitoring, objectives and measures)

There are different types and reasons why certain water bodies are protected under the law. For surface water bodies, protected points and areas have been designated under the Drinking Water, Bathing Water, Habitats and Birds Directives as well as for areas designated for the protection of economically significant aquatic species (e.g. aquaculture).

Protected surface water areas have been identified for all relevant Directives (Habitats, Birds, Drinking Water and Bathing). For groundwater, protected areas have been identified in relation to Article 7 -for

[15] not counting FRK and FRL
[16] including FRK (based on data mining) and FRL. (later than 1 sept e-reporting).

drinking water -and for the Habitats and Birds Directives areas dependent on groundwater. France has also reported Nitrate Vulnerable Zones pursuant to the Nitrates Directive and sensitive areas pursuant to the Urban Wastewater Treatment Directives. A few protected areas for economically important aquatic species (shellfish) have been designated in transitional and coastal waters. The table below outlines the number of waterbodies associated with each of the protected areas in the Member State.

Table 2: Number of protected areas in France by 2022, per type of protected area and type of associated water body, not counting FRK and FRL

Protected area type	Number of protected areas in France				
	Rivers	Lakes	Coastal	Transitional	Groundwater
Bathing waters	648	356	1242	93	
Drinking water protection points	886	99	13	8	27422
Natura 2000 protected site	3400	195	299	161	372
Nitrate vulnerable zone	1694	41	16	19	185
Sensitive area	7707	317	131	99	
Shellfish designated water			328	130	

The data on monitoring sites for protected areas indicate a reasonable coverage (i.e. comparison of the number of protected areas and number of monitoring sites). Some improvements are clear, the coverage of monitoring of drinking water protected points has improved since the 2nd RBMPs.

There is regrettably little progress with the ecological and chemical status of surface water bodies associated with protected areas since 2016. While the share of high ecological status and good chemical status has slightly increased between 2016 and 2022, the share of bad ecological status has also increased in the same period. For the relevant groundwater bodies only negligible changes are reported.

Specific objectives for protected areas

All shellfish protected areas have additional objectives set. For all shellfish protected areas, the microbiological standards are different from those in the repealed Shellfish Directive 2006/113/EC. The reporting does not provide further information on whether the standards are stricter than the repealed legislation. The objectives have been met in 132 out of 458 water bodies (i.e. 29 %) and for five water bodies the set objectives have not been met. There is no information provided for the remaining 321 water bodies associated with shellfish protected areas. Why the additional objectives were not met is not explained.

In Natura 2000 areas associated with surface water bodies (898 out of 4055[17]), only 20 % of the sites have additional objectives and it is indicated that the needs are not yet known. None of the sites for which additional objectives have been set have met those. The causes for these failures could not bebe found. Out of the 1114 Natura 2000 sites associated with groundwater bodies[18], 98% do not have

[17] excluding FRK and FRL
[18] not counting FRK and FRL

additional objectives set. For 75% this is because the additional needs are not known, and for 23% (260), this is because WFD good status is deemed sufficient. Information on the achievement of the additional objectives is only available for 23 Natura 2000 protected sites (2 %) which are reported as not having met the objectives. The lacking knowledge necessary to correctly assess the quantitative status of 75% of the groundwater bodies with dependant N2000 sites is noted. None of the additional objectives for 2% reported being met in this reporting plus the 75% of unknown needs is creating high concern about the N2000 sites and the real quantitative status of the ground water bodies involved, now being reported mainly as good quantitative status.

All drinking water protected points associated with surface water bodies have additional objectives set. The majority of these (70 %) have met the additional objectives. The information is not available for seven areas. The remaining 290 sites (i.e. 29 %) have not met the additional objectives. All drinking water protected points associated with groundwater bodies have had additional objectives set. The large majority (83 %) have met these objectives, while a further 15 % have not met these objectives. Information is not provided for 273 drinking water protection areas. France has received a reasoned opinion in February 2023 because of failure to fulfil the obligations under the Drinking water Directive as regards the nitrates in drinking water supply in 110 units concerning 70 000 inhabitants.

Additional measures related to Protected areas

Additional measures have been adopted for surface and groundwater bodies in some, but not all, of the assessed RBMPs. Whether additional measures are set or not depends on the type of protected areas. Additional measures were identified in the Rhone-Mediterranean RBD for Natura 2000 areas with a proven functional link to groundwater and / or surface water bodies and containing aquatic and wetland habitats of community interest. This concerned 6 % of the water bodies in the RBD. These additional measures have been set to support the additional objectives of achieving a favourable conservation status for habitats by 2027.

Measures for the protection of drinking water safeguard zones have been set up in all the four RBMPs assessed in detail[19]. Criteria for the establishment of the safeguard zones have been provided in the Rhone-Mediterranean RBMP, but not in the others. All drinking water safeguard zones are recorded in the national database SISE-EAU[20]

3.5 What is being done to prevent/reduce hydromorphological pressures

It is noted positively that France has created an inventory of all the obstacles crossing the water, which includes an online viewer which is constantly updated[21]. A positive step concerning the mitigation of influences of dams and constructions on the flows in the water bodies was the adoption in 2006 of Article L214-18 in the French environmental law (water law), prescribing an obligation for constructions to keep a minimal flow in the channel of the water body that could guarantee permanently the life, the circulation and the reproduction of species that lived in the water. This law has been reviewed in 2017 to create option to exempt water mills and in 2023 including a possible

[19] FRA, FRD, FRI, FRM
[20] Système d'Information des services Santé-Environnement Eau
[21] L'Atlas-Catalogue du Sandre (eaufrance.fr)

derogation if electricity supply would be threatened or seriously undermined. Compensatory measures should be financed by the extra income generated.

As regards barriers in the rivers, progress has been made in the ecological continuity in France, and today 6 out of 10 migration barriers in French hydropower dams have been equipped with fish migration aid so far. However, the remaining interruptions due to (partly obsolete) hydropower dams and registered obstacles still hamper river continuity. Worth mentioning is the restoration of river continuity in the RBD Seine-Normandy opening 500 km of river stretch in the Seine river basin and 1000 km in the coastal area which are now accessible to the Atlantic Salmon. In particular, the biggest demolition of an old hydropower dam in Europe, the dam of Vézin which finished in 2022, has already allowed fauna and salmon to significantly recover and come back.

A small increase in French hydroelectricity production is still foreseen till 2050. Given the >90% level of the potential already operational in hydropower production, this increase is a challenge, that may risk putting at stake surface water bodies with no or little hydromorphological pressures if the ecological values are not taken sufficiently into consideration. In the Programme of Measures, the following key type measures (KTM) are listed: KTM5 - Improving longitudinal continuity (e.g. establishing fish passes, demolishing old dams); KTM7 - Improvements in flow regime and/or establishment of ecological flows; KTM14 Research, improvement of knowledge base reducing uncertainty; KTM23 Natural water retention measures; KTM24 Adaptation to climate change. The RBMPs reported the following KTMs for supplementary measures only: KTM6 Improving hydromorphological conditions of water bodies other than longitudinal continuity.

3.6 What France is doing for abstractions and water scarcity

Measures related to water scarcity and abstractions are very different in the different RBDs. The 3rd RBMP was adopted before the new Plan Eau[22] adopted in March 2023. The latter aims to stimulate reductions in water use, announcing 53 measures and setting targets for 2030 and accompanying funding.

On average, between 2008 and 2018, the annual volume of water consumed in Metropolitan France is estimated at 5.3 billion m3 (or 82 m3 per inhabitant)[23]. Agriculture is the main water-consuming activity at 45%, followed by cooling systems for power plants (31%), drinking water (21%) and industry (4%). The relative importance varies greatly per river basin, depending on: population density (Scheldt -62% and Seine-Normandy-56%), energy production (Rhone-Mediterranean-46% and Rhine-Meuse-58%) or share of irrigated agriculture (Adour-Garonne-78% and Loire-Brittany-55%). These statistics consider abstracted volumes, not the net consumption that is integrating the notion of the return flows to the regional water system.

Just as in the previous cycle, in the 3rd RBMPs, basic and supplementary measures to address water abstraction have been planned in the two RBDs where abstractions have been identified as a significant pressure. These measures include authorisations and registrations. Water abstraction is regulated under the Environmental Code. Abstractions are recorded in a publicly available national database. France has delineated “water distribution areas” (ZRE in French) that are affected by a chronic lack of water in relation to needs (water stress). In these ZRE’s either declaration or authorization is required

[22] Présentation du Plan eau. | Élysée (elysee.fr)
[23] Eurostat data

for abstractions above 8m3/h. The 3rd RBMP did not report on the periodicity of controls, nor about the frequency of updates of such authorizations. The duration of validity of single abstraction authorizations cannot exceed 15 years. Regional water authorities are obliged to establish a water balance at sub-basin level for these ZRE regions and only on the basis of a water balance grant permits for water abstraction. In non-ZRE-areas, abstractions under 1000m3/year (groundwater) and under 10.000 m3/year (surface water) are not subject to authorization or declaration. However, the competent authority may impose any measures necessary to prevent damage or environmental degradation.

Relevant measures on defining and implementing e-flows are ongoing before 2015 but regrettably programmed to be finished in 2027. Measures related to control of abstractions and water efficiency were implemented in the previous cycle and they are also planned for this cycle. The national hydrogeological institute BRGM publishes every month the relative level of the groundwater bodies[24].

Natural water retention is encouraged, increasingly so in the Plan Eau of March 2023 (see end of this paragraph). It is to be noted that France aims to double the agricultural area under organic farming by 2027 to reach 18% of the total agricultural area. However, the French 3rd RBMPs contain also provisions to build reservoirs and perform water transfers to increase water supply.

International cooperation is established in the Meuse, the Scheldt and the Rhine, including on water abstraction / scarcity issues: joint monitoring, planning, stakeholder engagement, measure implementation and exchanges of practises with low flows.

3.7 Adaptation to climate change

All RBMP's include an objective to 'adapt to the effects of climate change', with a series of measures related to (inter alia) water management, restoration, and conservation in separate documents. The information included in the RBMPs is more generic and dwells on the impacts of climate change, without clear indication how these impacts have been considered for the Programme of Measures in the RBMPs or in the status assessment. France has adopted a National Climate Change Adaptation Strategy in 2006 and published a National Adaptation Plan for Climate Change (PNACC)on 25 October 2024. The governance for the RBMPs and the Climate Adaptation Plans is the same in all river basins, which normally should ensure coherence. The country uses different Models – Explore 1 and 2- to identify ranges of impacts to take into account in water management.[25] The respective RBMPs (2022) do not report any surface or groundwater bodies having failed to reach good status due to climate change.

As regards floods, all five Flood Risk Management Plans assessed refer to the importance of adaptation to climate change and outline measures to address the expected effects of climate change on the likelihood and potential adverse consequences of flooding. The Adour-Garonne (FRF) plan having its first objective on adaptation. Three of the five FRMPs refer to coordination with the national adaptation strategy, and all five identify measures to address climate impacts. All five refer to a heightened frequency of extreme events by 2050, with the Escaut (FRA) and Rhine (FRC) placing

[24] État des nappes d'eau souterraine | BRGM
[25] Inforegio - Compendium of good practices and solutions for climate change adaptation in the Outermost Regions of the EU (europa.eu)

particular emphasis on the predicted intensification of winter precipitation and a decrease in total cumulative summer precipitation (albeit with risk of heavy rainfall in summer). The FRMP of the Rhine (FRC) refers to a heightened frequency and intensity of pluvial floods from heavy rainfalls. The FRMP of the Adour-Garonne (FRJ) predicts a significant increase in flooding due to sea-level rise. The second FRMPs assessed provide details on climate change impacts, including how that information was used to develop the plans. Additionally, more detailed studies on how climate change might impact flooding have been carried out.

As regards droughts, there are no national requirements to produce drought management plans, but voluntary instruments that address water stress at local scales (the PTGE, arrêté sècheresse, SAGE) are used to prevent or reduce water stress. After the extreme long drought of 2022 France adopted the Plan Eau (see 3.6), with 53 measures to reduce water use in all sectors and reducing leakages in networks, including new drought management guidelines[26]." The country recently also took a number of measures to better predict and mitigate drought risks including public access to this information. As the RBMPs were reported before the drought of 2022, these recent drought related measures are not in the RBMPs. While not mentioned clearly in France's 3rd RBMPs, the construction of "substitution or alternative reservoirs" filled with groundwater during winter months for irrigating farmland is raising concerns for the viability of groundwater depending terrestrial ecosystems and e-flows in surface water bodies.

4. Policy elements contributing to zero pollution

4.1 Surface Water: what is their chemical status

Monitoring

The scale of the monitoring network varies by RBD, including less developed monitoring networks particularly for overseas territories. The overall monitoring network has been expanded further in the 3rd RBMPs though France already had an extensive monitoring network for chemical status before. In 2016, 71 % of all lakes, 24 % of all river water bodies, 63 % of all coastal water bodies and 89 % of all transitional water bodies were covered by a monitoring site. It is noted that 10 out of the 12 RBDs[27] conduct operational monitoring for chemical status compliance with the minimum requirements of the WFD, including all mandatory substances (45PS and 8 EQSD substances). The review of the 2nd RBMPs stated Metropolitan France included 41 substances, but that overseas territories deviated with 5 substances less. The number of sites and the frequencies of monitoring for biota and sediment illustrates a significant spatial scale diversity for biota monitoring with a at least the minimum frequency.

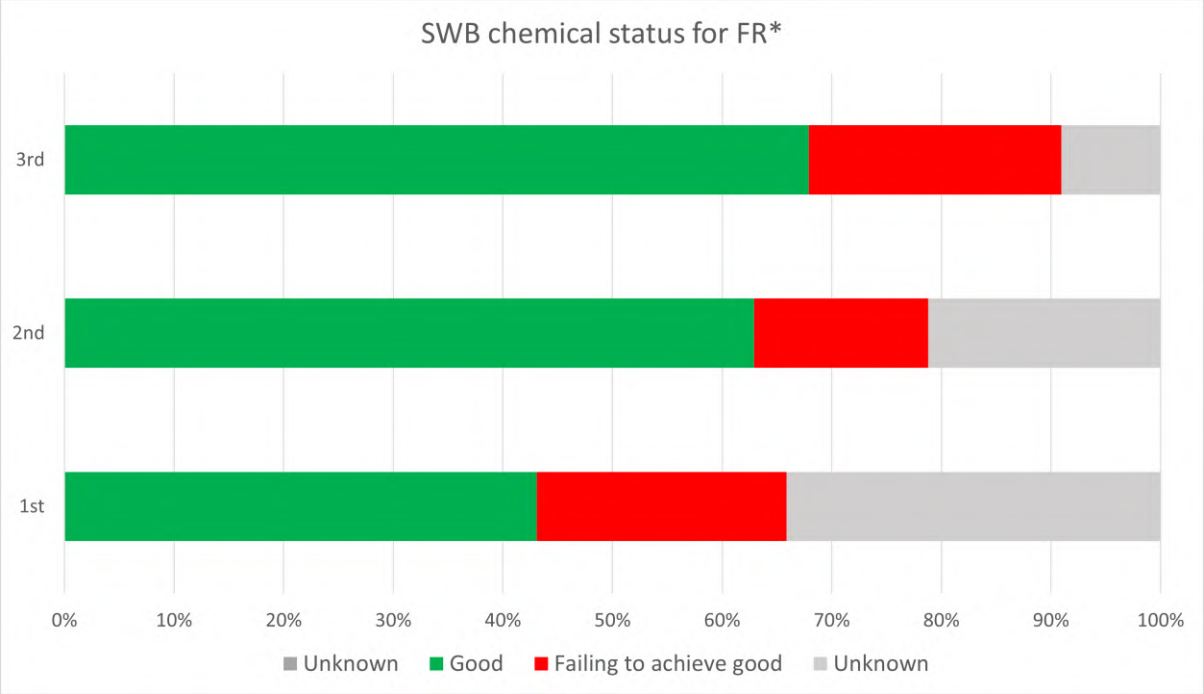
Status assessment

It is noted that it is difficult to conclude on the level of confidence of the chemical status assessments from the reported data. The number of unknowns has steadily decreased over the 3 cycles as shown in figure 5 including FRK[28] and FRL.

[26] Guide circulaire secheresse-conforme1605.pdf (ecologie.gouv.fr)
[27] electronically reported by 1-09-2023
[28] on the base of datamining of the pdf

Especially in French Guyana improved monitoring shows part of unknown upstream water bodies from the 2nd RBMP are chemically polluted. Legal and illegal goldmining activities are related to this upstream mainly mercury related pollution. Illegal mining uses mercury to concentrate the gold. Legal mining causes the naturally in the soils present mercury to get released through excavating.

Figure 6: Chemical status for surface water bodies in France by 2010, 2016 and 2022, for all water bodies including datamining for FRK



Source: 3rd RBMPs electronic reporting including datamining FRK

Results are mixed since there is a considerable improvement in the knowledge, with less unknowns, there is also a positive trend with an improvement in proportion of waterbodies in good chemical status surface water bodies but also there are more surface water bodies in poor chemical status. There is a small number of substances that have a very significant effect on the number of SWBs that fail to achieve good chemical status. These can be seen in Figures 6 and 7.

Figure 7: The top-10 Priority Substances causing failure to achieve good chemical status in surface water bodies in France by 2022 (legally required 33 Priority Substances)

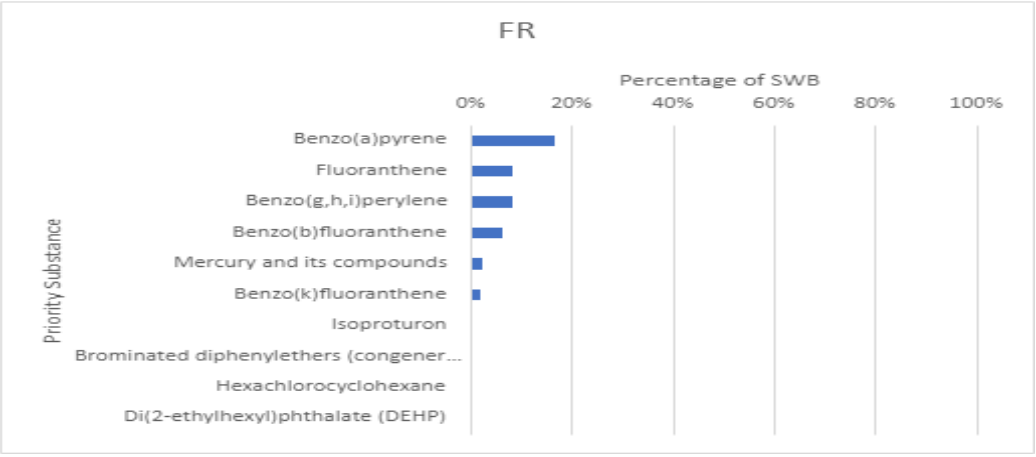
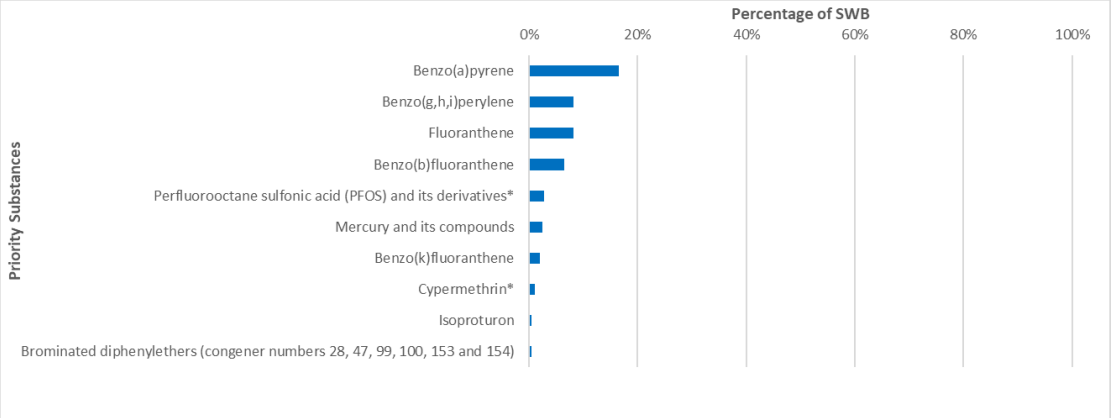


Figure 8:The top-10 Priority Substances causing failure to achieve good chemical status in surface water bodies in France by 2022 (new 1-45 Priority Substances)[29][30]



The poor chemical status of surface waters in France is attributed to PAHs (5 of the top 10 priority substances), mercury and PFOS. PAHs are caused by various kinds of combustion processes and are affecting more than 70% of the water bodies. This is similar to the 2nd RBMP where 80% of the surface water bodies had too high PAH concentrations. PFOS was only mandatory for monitoring but is emerging as a widely spread very toxic and persistent pollutant even more present than mercury inside Metropolitan France. The % in number of water bodies failing because of mercury increased also from 12% (2nd RBMP) to 16% in the 3rd. This increase is substantial as more water bodies are assessed now compared to the 2nd RBMP.

Without counting the uPBTs France would be having 78% instead of 68% good chemical status surface water bodies.

Next to the uPBTs there are two pesticides, isoproturon and cypermethrin causing failure in the French assessment, although cypermethrin (added in 2013) also is just mandatory to monitor. To be noted that France is the biggest consumer of pesticides of the countries reporting their sales to Eurostat, but also having a big area of utilised agricultural land. It is worth noting that some overseas territories have other priority substances that are key. For example, RBD Martinique indicates that lindane (a banned pesticide) is the main pollutant causing failure.

4.2 Groundwater Bodies: what is their chemical status

Monitoring

In the 3rd RBMPs 82% of the 689 groundwater bodies are monitored for chemicals[31], which is a relative important decrease compared to the 85% of a smaller number of groundwater bodies in the 2nd

[29] Directive 2008/105/EC as amended by Directive 2013/39/EU added 12 new substances i.e. numbered 34 to 45 to the priority substance list. For the 3rd RBMP, Member States have only had the obligation to monitor them. Compliance with the Environmental Quality Standard values for these 12 new priority substances will be assessed in 2027.

[30] France included PFOS and cypermethrin in their status assessment, instead of only monitoring them; though it was not mandatory to include these substances in the chemical status assessment.

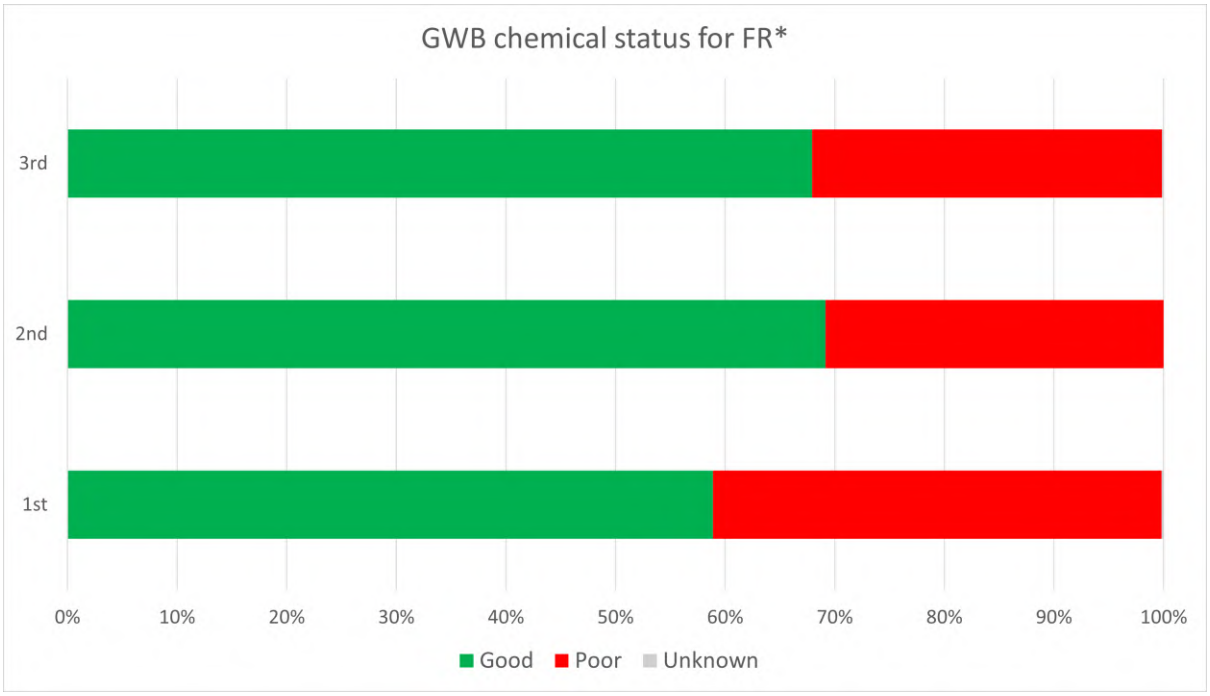
[31] not counting FRK and FRL

RBMPs. 10 groundwater bodies in poor status are not monitored in the RBDs FRF and FRG. 47 Groundwater bodies of poor status have no operational chemical monitoring, mainly in FRG. All the mandatory substances are monitored in all RBDs.

Status assessment

The assessment of the general chemical situation of a groundwater body is based on the harmonised methodology proposed in the EU Guidelines,[32] . Figure 8 shows the evolution since the 1st RBMP[33], and a slight decrease in good status from 69,1% to 68%. This apparent deterioration of 1,1% of the groundwater bodies could be partly related to the improved assessment and perhaps partly due to the new delineation of GWBs.

Figure 9: Chemical status of groundwater bodies (% of numbers of GWBs) by 2009, 2015 and 2021



Source e-reporting complemented with data mining for FRK

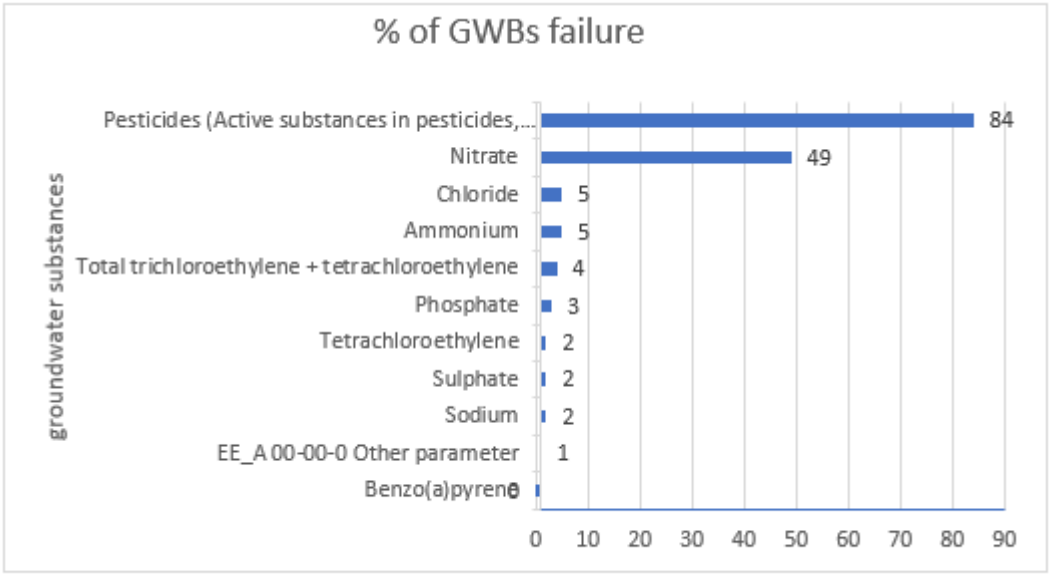
Comparability between 2nd and 3rd cycles is hampered by the significant new delineation of groundwater bodies. Despite no noticeable improvement over the cycles till 2022, France expects in the e-reporting of 2022 and 2023 that 90% of groundwater bodies will be in good chemical status or meeting environmental objectives by 2027.

The top five pollutants causing failure to achieve good chemical status of groundwater bodies are pesticides including their relevant metabolites followed by nitrates, chloride, ammonium, total trichloroethylene and tetrachloroethylene, and phosphate. It is noted that more than one substances may cause failure to the same groundwater body. Nitrates, pesticides including their relevant

[32] CIS Guidance document 18 (2009): Groundwater status and trend assessment, derived as a 'conceptual model' in line with point 3 of Annex III (*Assessment of groundwater chemical status*) of the GWD.
[33] including FRK (based on data mining) and FRL

metabolites and electrical conductivity show sustained upward trends in groundwater bodies. This shows that the pressures from agriculture on the groundwater bodies are sustained.

Figure 10: Top-5 groundwater pollutants causing failure of good chemical status in groundwater bodies in France by 2021 proportional to the total of failing GWBs



Source: 3rd RBMPs e-reporting

The same types of diffuse pollutants cause the failure in status for 31.1% of the total groundwater bodies which are including drinking water protected points. This used to be 38% in the previous cycle with 6,8% less groundwater bodies. Thus, with the caveat that there are comparability problems, there may be a slight improvement for the chemical status of groundwater bodies related to diffuse agricultural pollution.

4.3 What France is doing to combat pollution from agriculture

Agriculture has been identified as a main pressure in all metropolitan RBDs in France, mainly for diffuse pollution, including predominantly pesticides followed by nitrogen and phosphorus. In the RBDs reviewed in detail[34] no quantified gap assessment could be found. That means that there is no estimation of the necessary load reduction of pesticides and nutrients by agriculture to achieve good status in each RBDs. RBD FRG has however produced a quantified gap analyses for nutrients related to the coastal water eutrophication problems (Algae Vertes). This is not coupled to a quantified approach for the various sources. The PoMs for all RBDs include information on the number of water bodies for which an agriculture targeting measure is planned in the 3rd RBMPs, but no indication of how much the reduction in emissions should be. This gap also exists for transitional waters downstream. France

[34] FRA, FRD, FRI and FRM

features 9% of agricultural land under organic farming and intends to double this to 18 % by 2027[35] with support from the CAP Strategic Plan (2023-2027). This is extremely important as the main pressure on the quality of groundwater is diffuse agricultural pollution, mainly pesticides and nitrates. Under the CAP Strategic Plan, France also plans to support commitments for improved pesticide management on 61% of its agricultural area[36]. A Nitrates Action Plan was adopted in 2020 but pressures on the status of ground water bodies are predicted to keep increasing until 2027.

The description and level of details for the specific agricultural measures vary across the RBMPs. In general, they all describe that measures for agriculture include basic (mandatory) and supplementary measures. The PoMs in the 3rd RBMPs include detailed fiches for water bodies where the measures are applicable, the area covered, and the objectives targeted are presented. The basic measures comprise the nitrate action programmes, regulations on the use of plant protection products, the conditionality of the Common Agricultural Policy37, the implementation of the Ecophyto II+ plan and the establishment of catchment protection areas around drinking water catchments. In the description of the basic measures, it is further described that there are supplementary measures based on extending requirements beyond what is required by for example the Nitrates Directive. Additional measures are present in high-stake areas such as drinking water catchment areas, catchment areas subject to erosion or green algae bay catchment areas (in Brittany). These supplementary measures are financed through CAP (2023-2027) support The use of pesticides is explicitly addressed in the RBMP of the intensively agriculturally used Seine-Normandy. *The RBMP notes the importance of measures for reversing the trend.* The National Plan Ecophyto II was particularly important for this objective, thus its pausing can be a serious drawback for the achievement of the environmental objectives. It is very important that the new PoMs do not include new measures but rather rely on prioritising the full implementation of the defined measures in 2015.

4.4 What France is doing to combat pollution from other sectors

France has taken many measures to address pollution from other sectors than agriculture. All the pressures identified from industry and urban wastewater treatment are covered by measures associated with Key Type Measures (KTMs). All RBDs have planned targeted measures, but there is no quantified gap analyses for the substances involved, nor estimated efficiency of the measures programmed in most RBDs.

The French gap assessment consists of reporting the number of water bodies where pollution from other sectors and sources than agriculture requires (further) measures. This includes the number of water bodies affected by specific hazardous substances (both Priority Substances and River Basin Specific Pollutants). The dates by when the good status is expected to be achieved has been reported in a few cases. A gap analysis is included in the Seine Normandie RBMP, it presents the percentage of emissions reductions needed by chemical substance to reach the objectives of the WFD by 2027.

---

[35] At a glance: France's CAP Strategic Plan (europa.eu)

[36] 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)

37 "Mapping and analysis of CAP strategic plans" (2023-2027) the link Mapping and Analysis of CAP Strategic Plans - European Commission (europa.eu)

Measures to reduce point source emissions in all RBDs include improvement, upgrade and reconstruction of urban and industrial wastewater collection and treatment. The ongoing procedure before the recent Court ruling (C-268/23) which condemned France for about non-compliance with the Urban Wastewater Treatment Directive in 78 agglomerations must be mentioned here as wastewater treatment plants are a crucial step to reduce nutrients from wastewater. The court case concerns fifteen agglomerations of over 2000 inhabitants failing to meet the additional requirements related to the protection of sensitive areas from nutrients. In July 2024 the European Commission decided to refer France to the Court of Justice of the European Union for failing to comply with the maximum nitrate concentration in drinking water set in the Drinking Water Directive (Directive (EU)2020/2184). Sometimes stormwater basins to prevent overflows of the sewage are also explicitly targeted as measures. To specifically reduce pollution with priority substances and RBSPs, various measures are planned to address these, without however the same level of clarity in all RBDs as regards which substances are addressed to what extend by which measures and where. The various RBDs do include knowledge increase on micro pollutants and on technical and economical feasible solutions for improved treatment in various industrial sectors. Controlling and updating discharge permits and connections to sewage networks, reducing emissions from various industrial processes (some RBD's mention specific sectors, other RBDs do not), reducing discharges from port activities (wastewater, dry-docking areas, etc.) on the coast and navigation axis is mentioned in a few and managing and reducing pollution from abandoned contaminated sites or significant sources of contamination. Measures are foreseen to suppress and minimize Guyana's chemical pollution because of legal and illegal gold mining activities by 2027 for the water bodies that are in the nature reserves or in the national parc. For surface water bodies outside the protected areas (10% of Guyana's surface water bodies and approximately 1% of the total French) exemptions are foreseen to reach good status after 2027.

4.5 What France is doing to combat significant pressures – overall assessment of the Programmes of Measures

Compared to the previous cycle, the relationship between the measures and the pressures is better established. Indeed, all significant pressures are associated with a Key Type of Measure (KTM) and an extensive list of national measures. Basic measures are reported against all except one of the requirements of Article 11(3) of the WFD. It is also conveyed that a large number of individual substances, including both River basin Specific Pollutants and Priority Substances, have also been addressed by KTMs. France has adopted 187 national basic measures clustered in 19 predefined KTMs. In addition, a total of 838 national supplementary measures have been adopted and clustered against 21 predefined KTMs and one nationally defined KTM. The application of both basic and supplementary measures varies between RBDs. In all the RBMPs, the KTMs reported as tackling significant pressures in each RBD include national basic and / or supplementary measure. However, what remains unclear is their effectiveness and proportion of supplementary measures which are mandatory as opposed to voluntary. On the other hand, there are national measures which have not been reported as tackling significant pressures. Therefore, these may not yet have been put into operation. The four screened RBMPs feature different approaches and levels of details in the reporting of the cost-effectiveness analysis and in the explanations of how such analysis influenced the final prioritisation of measures. Information on cost effectiveness and prioritization is lacking completely for some RBMPs as well.

A critical factor in the success of the PoM is the availability of budget/funding. The information on the sources of funding varies very considerable among the 3rd RBMPs of France. In some, public costs as

well as costs of private operators are included (to be funded privately by individual companies). In other RBMPs no private funding is mentioned and fewer details are provided. France identified several obstacles which are responsible for the lack of progress in the implementation of measures. These include delays, lack of finance, lack of governance mechanism. It is conveyed that it is considered that international cooperation is well coordinated with the national programme of measures and both dimensions are complementary.

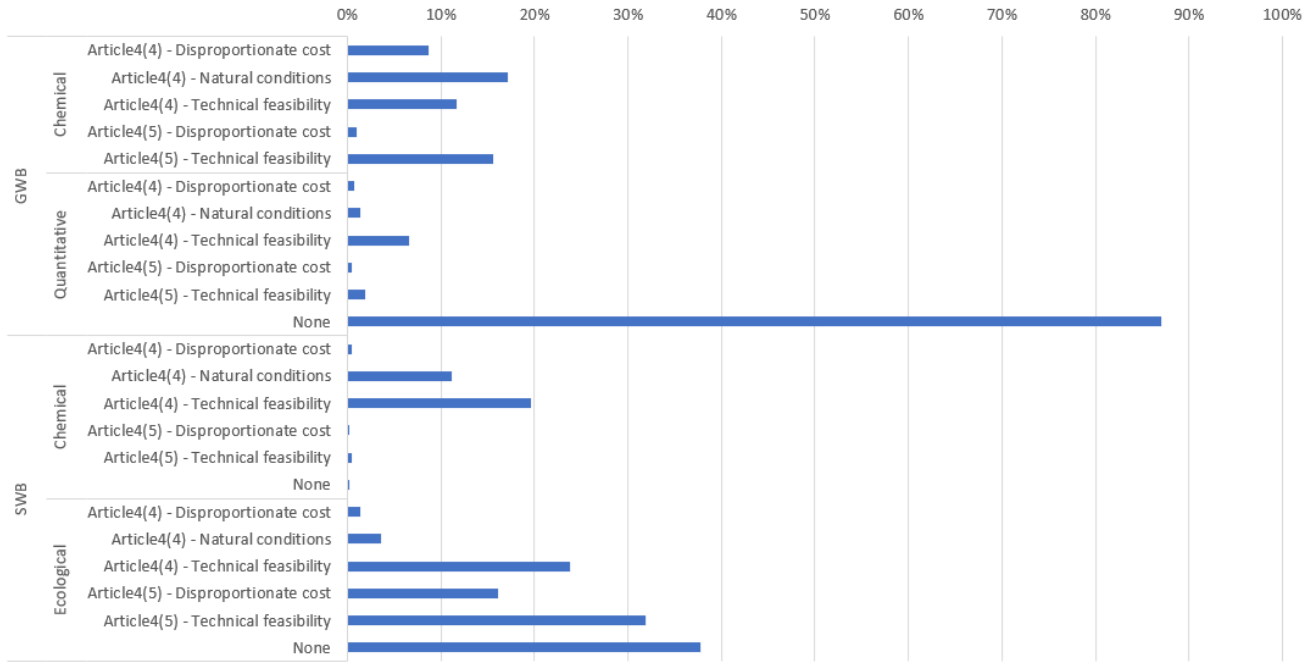
5. Exemptions and economics

5.1 To what extent are exemptions applied in France

According to the Water Framework Directive, where the objective of good status is not yet achieved, exemptions can be applied in accordance with Article 4, paragraphs 4, 5, 6 and 7. Exemptions should be well documented and applied restrictively as a last resort. They should regularly be reviewed if still justified. France has applied a significant number of exemptions of different types in the 3rd RBMPs. These exemptions are justified with short, standardized sentences in a tabular form. References for underpinning studies for most justifications are missing in the RBMP's and in many of the background documents. It should be noted that more than one exemption type can be applied to the same surface or groundwater body.

There has been a national instruction in 2020 how to deal with the formal WFD deadline of 2027. The general rule was to keep as high a level of ambition in the environmental objectives as possible. This was further detailed by a nationally determined limited increase in percentage of water bodies in good ecological status to be achieved in 2027, which varied for the various RBDs. This incremental improvement was the result of stakeholder involvement. For those water bodies where no good status would be achieved in 2027 lowered objectives could be considered and had to be justified pursuant to Article 4(5).

Figure 11: Type of exemptions reported to be applied to surface water and groundwater bodies for the 3rd RBMPs in France, not counting FRK and FRL



Source: 3rd RBMPs e-reporting

Note: ecological status and groundwater quantitative status exemptions are reported at the water body level. Chemical exemptions for groundwater are reported at the level of each pollutant causing failure of good chemical status, and for surface waters for each Priority Substance that is causing failure of good chemical status For the purposes of this Figure the number of water bodies exempted for chemical status is used. Please note that while the WISE reporting uses a label "Article 4(5)- Technical feasibility" it should be read as "Article 4(5)- Infeasibility". Please note that the same water body can be exempted on multiple grounds.

Article 4(4)

Time related exemptions under Article 4(4) WFD are applied on the grounds of disproportionate costs, technical feasibility and natural conditions. A water body can have a 4(4) exemption on the grounds of technical feasibility as well as on the grounds of disproportionate costs or only one ground. The information provided to justify the exemptions was limited; no references were made to specific characteristics of the individual water body nor references to underpinning studies. According to the electronic reporting, in France (not including Guyana and Reunion), the exemptions according to Article 4(4) have been presented:

A. on grounds of technical feasibility:

- groundwater bodies: 80 GWBs or 11.6 % for chemical status
  45 GWBs or 6.5 % for quantitative status

- for surface water bodies: 2714 SWBs or 23.8 % for ecological status/potential
  2230 s or 19.6 % for chemical status)

B. on grounds of disproportionate costs:

- for groundwater bodies: 60 GWBs or 8.7 % for chemical status
  5 GWBs or 0.7 % for quantitative status

- for surface water bodies: 161 SWBs or 1.4 % for ecological status / potential, and 47 WBs or 0.4 % for chemical)

C. on grounds of natural conditions:

- for groundwater bodies: 118 GWBs or 17.1 % for chemical status, and 9 GWBs or 1.3 % for quantitative status

- for surface water bodies: 403 SWBs or 3.5 % for ecological status / potential and 1269 SWBs or 11.1 % for chemical status).

Article 4(5)

Under Article 4(5) France lowers the WFD- objectives for 2027 of at least 32% of the surface water bodies for the ecological status and at least 15.5% of the groundwater bodies for the chemical status. More than one exemption justification ground (infeasibility or disproportionate costs) is often invoked for the same water body, often also on top of more types of exemptions (i.e. for ecological status and for chemical status). It must be noted that in the previous cycle France lowered the objectives under Article 4(5) for only approximately ten water bodies (out of approximately 10000 water bodies). Thus, this change in this cycle has a very strong impact on the expected water body status in 2027. Sometimes France considers that the lowered environmental objectives have already been reached in 2021 and others that they will be reached in 2027. This approach of switching to Article 4(5) reduces the number of Art 4(4) exemptions invoked (see fig 8.2), especially compared to other Member States using mainly Art.4(4). Article 4 (5) exemptions are justified with information provided at the water body level in a tabular short, standardised sentence format having the same shortcoming highlighted for the Article 4(4) exemptions. According to the electronic reporting for France (except for French Guyana and Reunion), Article 4(5) exemptions have been applied.

A. on the grounds of infeasibility

- for groundwater bodies: 107 GWBs or 15.5 % for chemical status, and 13 GWBs or 2 % for quantitative status
- for surface water bodies: 3635 SWBs or 32 % for ecological status, and 45 SWBs or 0.4 % for chemical) and

B. on grounds of disproportionate costs

- for groundwater bodies: 7 GWBs or 1 % for chemical status, and 3 GWBs or 0.4 % for quantitative status
- for surface water bodies: 1 SWB or 0.01 % for chemical status, and 1840 SWBs or 16 % for ecological status / potential.

This lack of underpinning or references is especially regrettable as the relevant WFD provisions require to set out and explain in the RBMPs the reasons for each exempted water body. The Commission has, in its reports on the first and second RBMPs, issued the recommendation to provide more detailed justifications for exemptions under Article 4(4) and Art 4 (5), in particular to develop a more

consolidated methodology to justify exemptions to the achievement of environmental objectives (in particular as regards the assessment of affordability and disproportionate costs).

Article 4(6) and Article 4(7)

It is noted that while seemingly no exemptions have been declared under Article 4(6) and Article 4(7) these are mentioned in the reported plans in some RBDs. This also may seem at odds with the widely reported development of storage and water transfer capacity in France. However, two RBMP's (Mayotte and Artois-Picardie/Scheldt) include information on several Article 4(7) exemptions. This discrepancy in the 3rd RBMP reporting from France is noted.

5.2 Use of economic analysis and water pricing – cost recovery

France has an updated economic analysis based on long term water supply and demand scenarios but not (yet) linked to climate adaptation. The updated analysis discusses the effects of policy measures as well as of water pricing on water use efficiency. It is however not yet based on long term water supply and demand scenarios (well beyond 2027) linked to climate adaptation scenarios. A study (Explore2) recently published in June 2024 will make this possible in the 4th RBMP report. Estimates of relevant investments are provided as totals and for water supply and sanitation services separately. These are also considered for calculating cost recovery rates.

As regards funding, all RBMPs describe prioritisation criteria used to build their Programme of Measures. The levels of detail reported vary on the cost effectiveness analyses applied and the way cost effectiveness was used in the total prioritisation. Some RBDs are not reporting information on cost effectiveness at all. The four RBMPs assessed in detail (Scheldt, Rhone-Mediterranean, Guadeloupe and Mayotte) included an assessment of costs of PoMs and specifically for agricultural measures. Only the Rhone-Mediterranean RBMP specified funding sources for agricultural measures or the implementation of the PoM overall. For all RBMPs funding for the measures came from national as well as EU funds.

Water services, cost recovery rates and subsidies

A new national study calculates cost-recovery rates of the two broad public water services (drinking water supply and sanitation) in the different river basin districts, while individual water services (such as water reuse, storage and impoundments) are not recognised as such. A list of water uses with significant impact on water bodies has been identified, and households, industry and agriculture as the (broad) water user sectors (usually the only user sectors mentioned). Hence, the RBMPs all report three types of cost recovery rates, varying in the inclusion of yearly and renewal investments. The reported rates are often well below 100% when including the investments; only in the Rhone-Mediterranean the cost recovery rates are including the investment. The subsidies on operational costs as well as the limited recovery of investments costs do not seem clearly justified. For the Rhone-Mediterranean the cost recovery rates differ over the water user sectors, as farmers pay less than three quarters of the reported operational costs of the services they use, while industries pay slightly more than the operational costs they generate. The RBMPs tend to provide clear, explicit information on tariffs and revenues as well as on subsidies, but an explicit justification on the role of the water tariff and charges as adequate incentives is missing. All RBDs reported subsidies on operational costs of water services. The two oversea districts of Guadeloupe and Mayotte indicate also subsidies directed at water users. The reporting on the revenues of water abstraction, pollution and other water-related

charges varies over RBMPs . It is noted positively that in all screened RBMPs, volumetric pricing systems are in place for drinking water and irrigation; together with the reported unit rates increasing with volume, they provide a clear incentive. However, the widely absent pricing of resource costs, and, more generally, the low cost-recovery rates suggest that the incentive function of the pricing instrument is well below its potential.

Environmental and resource costs and the Polluter Pays Principle

The reported pricing in the four studied RBDs (Scheldt, Guadeloupe, Mayotte and Rhone-Mediterranean) reflect the national price regulation which foresees one joint tariff for the two broad water services: drinking water supply and sanitation services. The RBMPs do not indicate that water body status or scarcity conditions are considered when defining water prices. Irrigation water pricing schemes (as reported by Guadeloupe and Rhone-Mediterranean) also have a volumetric component. There seems to be no national pricing framework for irrigation. Only constant rates per m3 have been reported with regards to irrigation (no increasing unit rates). Information is missing as to whether scarcity conditions are considered in setting irrigation water prices. Likewise, water abstraction permits require the payment of an abstraction fee which is related to the actual volume of water abstracted, but unrelated to the degree of scarcity. The RBMPs provide quantitative estimates through a dedicated model of water economy, for environmental costs, often split over households, industry, and agriculture. It remains unclear whether the environmental costs include the resource costs (related to costs of scarcity). The calculations reported show outcomes that suggest a low cost-recovery for environmental costs. Hence there is a need to widen the application of the polluter pays principle through identifying bottlenecks in recouping pollution costs preferably from polluters rather than the water services customers in general. Environmental damage is hence not yet being sufficiently compensated; the related issue of adequate contributions from the different water user sectors not addressed.

6. WFD recommendations

Recommendations - France should:

1. Address the identified lack of compliance of achieving good status by increasing the level of ambition.

   In particular,

   a) Better quantify the gaps to be bridged to reach the objectives per river basin, including higher clarity about the quantified challenges to be met by the various economic sectors and the measures to be taken to also meet the downstream objectives for sensitive water bodies,

   b) Provide a detailed quantitative assessment of the additional need for measures to address nutrients, pesticides, and pollution, including attention for hydromorphological pressures and the contribution of mitigation measures from all the sectors in all RBDs.

c) Assess how the planned measures will close the gaps to good status. This will allow to address all point pollutions with concrete measures and better prioritise measures at water body level.

2. identify and put in place additional measures to reduce existing persistent environmental challenges (pressures) preventing the achievement of good status based on robust gap analyses. This implies, inter alia:

   a) Stepping up action to drastically reduce nutrient pollution. Assessing for each measure what achieve benefit will be. This should consider the achievement of the objectives of WFD, MSFD and ND with particular focus on the vulnerability of transitional and coastal waters on all French and transboundary influenced coasts. The share in the effort of all relevant economic actors should be addressed for each water body.

   b) Addressing pesticide pollution by reducing their use and phasing out unsustainable practices as well as emissions of most relevant priority substances, including by reviewing permits (namely PAH's, mercury, pesticides cypermethrin and isoproturon, polybrominated diphenyl ethers (PBDEs), and including some problematic priority substances, like Lindane (HCH), as key issue in Outermost regions and where possible PFOS).

   c) Including a more frequent than the presently once every 15 years periodical review of abstraction and impoundment permits as well as other permits related to hydromorphological changes and describing how this review is implemented and enforced in the following RBMPs to take into account the impact of climate change.

   d) Stepping up action to drastically improve river continuity, ensuring minimum ecological flows, improve the general hydrological situation also in cooperation with neighbouring countries.

   e) Expanding the efforts on nature-based solutions including re-naturalisation and ecosystem restoration which will reduce the hydromorphological pressures on water bodies.

   f) The drinking water points need improved protection measures as many wells are already closed or at risk to be closed because of (pesticides and nitrates) pollution.

   g) Step up the efforts to achieve the additional objectives set for shellfish areas

3. Where the objectives of the Directive for a specific water body cannot be met and exemptions are invoked, in line with ECJ jurisprudence on the restrictive interpretation of exemptions and better justify the use of exemptions, provide sufficiently detailed justifications at the level of the water body and ensure that their application is regularly reviewed.

   This implies:

   h) Providing public access and references in the RBMPs to transparent, thoroughly underpinned case by case justifications for the exemptions when Article 4(4) and Article 4(5) or possibly in the future Article 4(6) are considered necessary to be applied,

   i) Clearly inform in a transparent manner about the application of Article 4(7) exemptions and apply it correctly with sound and thorough justifications in the

RBMPs for new projects implying water transfers, water reservoirs or important abstractions

4. As regards funding, increase the investments and ensure adequate financing in prevention and restoration to ensure achievement of good status as required by the Directive e.g., by making better use of the 'polluter-pays principle' when establishing water tariffs and by eliminating environmental harmful subsidies whilst ensuring affordable, just and implementing fair pricing mechanisms for all water users in line with Article 9 WFD. This should be based on a robust economic evaluation of measures, including the long term, to improve the cost-effectiveness analysis and the prioritisation of measures as well as a better – more complete- estimation of the investments to be applied as well as the funding needs. This must also include the Outermost regions.

5. As regards adaptation to climate change, better consider the impacts of climate change in all RBMPs.
   This entails:

   a) developing regional drought management plans where droughts are foreseen particularly in the outermost regions as knowledge about probable impacts there is still underdeveloped.

   b) Improving the climate proofing of measures included in the PoMs and where relevant develop adequate measures or plans for climate resilience and drought management to achieve the objectives of the WFD more effectively.

   c) Proactively establishing or improving, regularly update and monitor accurate water balances for all river basins, that take into account all inputs and abstractions and natural losses as well as the needs of water dependent ecosystems.

   d) Taking 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.

   e) Changing agricultural practices to reduce the dependence on irrigation for some crops, in particular crop diversification and more sustainable soil management techniques that allow for a better infiltration and/or retention of rainwater.

   f) when planning new dams and reservoirs or water transfers, or programs of reservoirs carefully assess their environmental impacts including cumulative impacts, especially regarding the objectives of the WFD and ensure that such interventions are part of an integrated water management and of coherent water resilience strategies, which, amongst others, duly considers long-term climate scenarios.

6. As regards governance, enhance the coordinate between the different administrative levels and foster more common approaches between the different RBDs as there are considerable disparities between the assessment and methodologies used.

7. As regards monitoring, assessment, data management and reporting, France should:

a) Speed up definitions of GEP for heavily modified water bodies, providing clarity about the compensation and/or mitigation measures needed to reach the GEP and start implementation as soon as possible,

b) Ensure sustainable groundwater and surface water management by considering climate change impact on the flows and on the replenishment of groundwater bodies before allowing new abstractions and ensure regular reviewing of permits to incorporate the most recent insights. Permitting should consider cumulative effects of abstractions with already existing and possibly programmed abstractions in the (sub) basin on the regional hydrological cycle.

c) Speed up in defining and implementing e-flows through integration in permitting and hydro-barriers management, with a priority for the 3 RBDs reporting significant abstraction pressures,

d) Continue to improve the monitoring of surface waters by covering all relevant quality elements and chemicals in all water categories. An increased level of monitoring should lead to a lower dependence on modelling, an improved prediction by the models calibrated with these data and less dependence on expert judgment (for outermost regions) for the classification of ecological status / potential and chemical status. This will also enhance the level of confidence of the assessments.

e) Improve the transparency and comparability of monitoring and status assessment among the 14 river basin districts (including the outermost regions) and with other EU countries, specifically regarding the assessment of river basin specific pollutants, physico-chemical and hydromorphological conditions.

SECTION B:

FLOODS DIRECTIVE

7. Flood risk management under floods directive (FD)

The Directive requires each Member State (MS) to scan its territory for flood risks, assess the potential adverse consequences of future floods for human health, the environment, cultural heritage and economic activity, identify the significant risks, map the flood extent and the potential adverse consequences, and take measures to reduce the flood risk. These activities are reflected in (a) the preliminary flood risk assessments, (PFRAs) including the identification of areas of potential significant flood risk, (APSFRs), (b) the preparation of flood hazard and risk map (FHRMs), and (c) the establishment of flood risk management plans (FRMPs).

Information from the PFRA/APSFR assessment

There are 14 Units of Management (UoMs) in France, which are the same as the Water Framework Directive's River Basin Districts (RBD). Fluvial, pluvial, groundwater, and sea water floods are considered as potentially significant sources of flooding in France. France designated 118 Areas of Potential Significant Flood Risk (APSFRs). The impacts of climate change on flood risk had been considered in France, however at the time of the second PFRAs no reference to a national adaptation strategy or adaptation/resilience building could be found.

7.1 Flood hazard and risk maps

Highlights

France is using a national geoportal[38] for the second FHRMs. FHRMs were prepared at the national level and show the whole country. Maps for fluvial floods with low probability (1/1 000 years), with medium probability (1/100 years) and with high probability (1/10 years) are provided. Flood extent is shown on all maps. Water depth is shown on all maps. Number of inhabitants is not presented on the maps. Some information on number of inhabitants potentially affected is available as background information on the geoportal, but it is not clear what the numbers relate to as it appears that in most cases total number of inhabitants is provided, and in some cases the population affected at medium probability flooding only. However, it is unclear if the information relates to an APSFR or to some other geographical area. The location of some economic activities (seven categories, including large scale activities, such as Seveso and non-Seveso sites, intensive animal rearing, wind farms, quarries) is mapped at national level using symbols and can be viewed as a layer on the FHRMs on the geoportal. IED installations are shown. Potentially affected protected areas identified in Annex IV(1)(i), (iii) and (v) to Directive 2000/60/EC are not shown in the FHRMs.

Changes since the first FHRMs

Two UoMs now include seawater as a source of flooding for the development of the second FHRM (not reported in the first FHRMs as a source of flooding). Pluvial sources of flooding have been identified in some UoMs in the second FHRMs (likewise, none in the first FHRMs).

Changes of contextual information since the first FHRMs

[38] https://www.georisques.gouv.fr/cartes-interactives#/

An important development is that maps for all UoMs can now be viewed on the national geoportal and their presentation is harmonised across all UoMs. The three probability scenarios (10, 100 and 1 000 years corresponding to high, medium and low probability) are applied uniformly on the geoportal. Hazard maps can be viewed by choosing various layers, e.g. probabilities (high, medium and low) and three means of flooding, i.e. exceedance, submersion and run-off, corresponding to fluvial, coastal and pluvial flooding. The different sources can be viewed combined or separately where fluvial (exceedance) and coastal (submersion) flooding are the sources. Pluvial flooding (run-off) has only been found visualised for one UoM (FRI – Guadeloupe), where pluvial is included as a source according to EIONET reporting. Water depth can be seen at a certain zoom level, the depth categories are the same for exceedance and submersion, but different for run-off.

Changes in methodologies used to prepare flood hazard maps since the first FHRMs

There has been gradual change in the approach since the first FHRMs. The biggest change is the standardisation of the presentation of maps at national level on the geoportal. In addition, pluvial sources of flooding have been identified in some APSFRs in the second PFRAs (none in the first cycle), although only one was found mapped in an FHRM.

Changes in methodologies used to prepare flood risk maps since the first FHRMs

Some important elements which were considered and shown on the pdf maps published as first FHRMs, are not displayed on any of the harmonised maps on the national geoportal, such as population affected, protected areas and cultural heritage. For example, impacted cultural heritage was displayed on the pdf maps for FRC, FRD, FRF, FRG and FRH in the first FHRMs. This is no longer the case on the harmonised maps of the national geoportal (it could be that because some maps from the first FHRMs are still up to date errors were made in compiling the databases and only indicating what has changed).

Changes since the first FHRMs in the consideration of climate change

In the first FHRMs it was reported that the long-term trends (climate change) were considered by using average sea level rise. An assumption was made in the first PFRAs that a 1m sea level rise would be observed across the coast by 2100, this was reduced to 60 cm for the first FHRMs. The impact of climate change on the occurrence of floods has been considered in the second FHRMs too. For example, a report for the Loire Bretagne (FRG) UoM considers the impacts of sea level rise in detail in the coastal zone. Similar reports are available for all coastal UoMs. Hazard maps at medium probability with and without the effect of climate change based upon the 60cm projected sea level rise have been produced.

7.2 Flood risk management plans

Highlights

The national Ministry of Ecological Transition and Territorial Cohesion has a webpage[39] on flood prevention that provides links to websites of the Regional Directorates, where the FRMPs can be downloaded. France has set three overall objectives at national level. Each FRMP assessed has set

[39] https://www.ecologie.gouv.fr/prevention-des-inondations#scroll-nav__3

individual objectives; these are not, however, directly linked to the broad areas of the national objectives. The five FRMPs assessed all contain objectives addressing adverse consequences. All five FRMPs assessed have objectives that call for increasing knowledge of flood risks and for sustainable land use planning and all five FRMPs assessed have measures for sustainable spatial planning. Some have objectives calling for better crisis management and governance. None of the objectives refer directly to adverse consequences on economic activity; however, a national objective call for reducing flood damage costs, which can include those for economic activities. None of the objectives refer directly to adverse consequences of flooding on the environment, though measures address pollution issues arising from floods. None of the objectives refer directly to adverse consequences of flooding on cultural heritage, though flood risks for cultural heritage are assessed in the five FRMPs, which also have measures to protect cultural heritage. France has reported 683 measures to EIONET. The five FRMPs assessed all identify measures to be undertaken. The measures in the second FRMPs are not specific and measurable, and the plans indicate that they will be specified in lower-level plans at local and APSFR levels. France reported 283 prevention measures and the FRMPs include measures for flood prevention, notably for spatial planning. France reported 125 protection measures and 193 preparedness measures and the FRMPs refer, among others, to measures for emergency planning. France has reported priorities for all measures. There are five possible categories for reporting measure priorities to EIONET, ranging from critical to low. France uses three of these categories: very high priority (161 measures, 24 % of the total), high priority (421 measures, 62 %), and moderate priority (21 measures, 3 %). In addition, there are 80 measures (12 % of total) whose priority is not reported: these are all the measures of the Seine UoM (FRH). Four of the five second FRMPs assessed report information on the progress of indicators for the first FRMPs. As noted above, all of the second FRMPs assessed identify indicators (which was not the case in the first FRMPs) to measure their own progress. Not all these indicators however have targets or timeframes. The FRMPs maintain a link between objectives, sub-objectives and measures. They maintain a link to lower-level plans as well. The FRMPs assessed do not set out priorities of their measures but do state that measures should be undertaken first in APSFRs (while France has reported in EIONET three different levels of priorities for its measures, both overall and within its UoMs, the FRMPs do not describe the approach to prioritisation of measures.). France has reported progress for all of its measures to EIONET, however the second FRMPs assessed vary in the detail they provide on the progress of measures included in the first FRMPs. The second FRMPs assessed list indicators to measure overall progress, although not that of individual measures. France uses four categories to denote progress of measures in EIONET: ongoing construction, ongoing maintenance (recurrent, e.g. maintenance works), in preparation, and not started. It does not report any measures as completed or as abandoned/interrupted. Ten measures are reported with more than one category of progress[40]. The largest share of measures is reported as ongoing (recurrent, e.g. maintenance works): 367 measures or 52 % of the total. Under this category, 130 measures (35 %) are identified as prevention measures and 116 (32 %) are preparedness. The next largest share of measures, 186 (27 % of all measures) are listed as ongoing construction, just over half of which (98 measures, 53 %) are prevention measures. All of the UoMs have measures that are ongoing (recurrent, e.g. maintenance works). Measures reported as ongoing construction are found in 10 of the 14 UoMs: these account for the majority of measures in the Meuse (FRB1), Rhine (FRC) and

[40] Eight of these 10 measures are for the Martinique UoM (FRJ), each with two categories of progress reported. One is for the Loire UoM (FRG), again with two categories of progress reported, and the other is for the La Réunion UoM (FRL), with the category of progress reported three times with two different categories. No explanation was provided for this reporting, but all categories are counted here and in Annex A to this report.

Seine (FRH) UoMs. Measures not started are reported for half of the UoMs (seven out of 14), with most in the Seine UoM (FRH): 21 measures, 35 % of the 60 measures not started. The five second FRMPs assessed provide at least some information on the progress of measures under the first FRMPs. The FRMP for the Rhine-Meuse (FRC) provides a link to an external document[41] that describes progress under the first FRMP. This provides an overview of work for the measures under each objective: it provides maps, for example, showing progress in the development of SLGRIs and in the introduction of the GEMAPI tax in the UoM. The FRMP for the Rhone (FRD) contains a chapter[42] that discusses progress in terms of the objectives and provides an overview of progress on the measures under each objective. While is reports progress in many areas, it notes that the transfer of critical services out of flood areas has proceeded slowly. Similar levels of detail were not found, however, in the other FRMPs. The plan for the Adour-Garonne (FRF), for example, mentions that the results of the first FRMP were assessed, including via a questionnaire to government authorities such as those responsible for lower-level plans[43]; details of the results were not found, however.

The second FRMPs provide information on funding sources, but only one of the five FRMPs assessed provides an overview of the costs of its measures. Three of the five FRMPs assessed provide information on insurance for flood risks. One FRMP assessed provides information on the national public insurance scheme for natural catastrophes and on insurance issues. In addition, three of the five FRMPs refer to the GEMAPI tax[44] that France has introduced to finance flood risk management measures. Two FRMPs have measures to carry out cost-benefit analysis and multi-criteria analysis. A national document provides guidance on coordination between the FRMPs and RBMPs and indeed the FRMPs assessed describe coordination with the WFD. France has reported that coordination with WFD objectives was undertaken in most of its UoMs. All five FRMPs assessed refer to assessments of the impacts of flood risk management measures on the environment, including natural areas. Three of the five FRMPs identify common measures with the respective RBMPs and have objectives or sub-objectives for natural water retention whereas all the FRMPs assessed have measures for natural water retention.

Two FRMPs (Escaut (FRA) and Rhine UoM (FRC)) refer to transboundary cooperation via international river commissions. For the FRMP of the Adour-Garonne UoM (FRF), separate documents are provided on EIONET on coordination with Spain[45] and Andorra[46] in relation to public consultation. For the other UoMs, transboundary actions are presented as a continuation of the efforts of the previous FRMPs.

The five FRMPs describe the public and stakeholder consultations that were organised. The consultation process for the draft FRMPs followed national regulations (Articles L566-11 and 12 of the

[41] https://www.grand-est.developpement-durable.gouv.fr/IMG/pdf/bilan_de_la_mise_en_oeuvre_du_pgri_2016-2021_districts_rhin_meuse_.pdf

[42] FRMP ITD, Chapter 2.

[43] FRMP for FRF, pp. 20-21.

[44] GEMAPI concerns the powers of local authorities in the field of management of aquatic environments and flood prevention, https://www.ecologie.gouv.fr/gestion-des-milieux-aquatiques-et-prevention-des-inondations-gemapi

[45] Referral from the Occitanie region to the Spanish Ministry (informing of the public consultation and requesting the opinions of the Spanish Ministry on the RBMPs and FRMPs), 8 February 2021, https://cdr.eionet.europa.eu/fr/eu/floods2019/frmp_2022/documents/frf/envyqskga/FR_FRF_FRMP_05_Saisine_ministere_espagnol.pdf

[46] Referral from the Occitanie region to the Andorran Ministry (informing of the public consultation and requesting the opinions of the Andorran Ministry on the RBMPs and FRMPs), 8 February 2021, https://cdr.eionet.europa.eu/fr/eu/floods2019/frmp_2022/documents/frf/envyqsejg/FR_FRF_FRMP_04_Saisine_ministere_andorran.pdf

Environment Code), which require two types of consultation: a six-month public consultation and a four-month consultation of stakeholders, including local and basin authorities, regional councils and environmental organisations. The public and stakeholder consultations were conducted at the same time as those of the RBMPs under the WFD.

Consideration of climate change

Section 3.7 depicts how France has taken into account climate change considerations when drafting the Flood risk Management Plans.

8. FD recommendations

Based on the reported information and the FHRMs and FRMPs assessed, France should:

- consistently consider in FHRMs: WFD protected areas, including areas intended for abstraction of water for human consumption, and cultural heritage sites;
- provide details in the FRMP on how the FHRM was used in the choice of objectives and measures;
- provide links in the FRMPs to the national geoportal where all FHRMs can be viewed;
- Include an assessment of the progress made towards the achievement of the objectives in all FRMP;
- provide information on the costs of all measures in all FRMPs;
- provide information on the methods used to prioritise measures in the FRMPs and on the final prioritisation;
- The FRMP should set out the progress of the measures in more detailed and consistent manner;
- where relevant, incorporate CBA in the FRMPs for the prioritisation of measures that lend themselves to it and provide a clear description of the methodology used;
- provide on the FRMP detail on the public consultation and stakeholder involvement, in particular, the comments received, and how they were taken into account;
- where appropriate, consider in the FHRM flow velocity or relevant water flow and in the FRMP flood conveyance routes, as these are relevant to emergency response.