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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) 19 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: Poland 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) 19 final.

Encl.: SWD(2025) 19 final

EUROPEAN
COMMISSION

Brussels, 4.2.2025
SWD(2025) 19 final

COMMISSION STAFF WORKING DOCUMENT

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

Accompanying the document

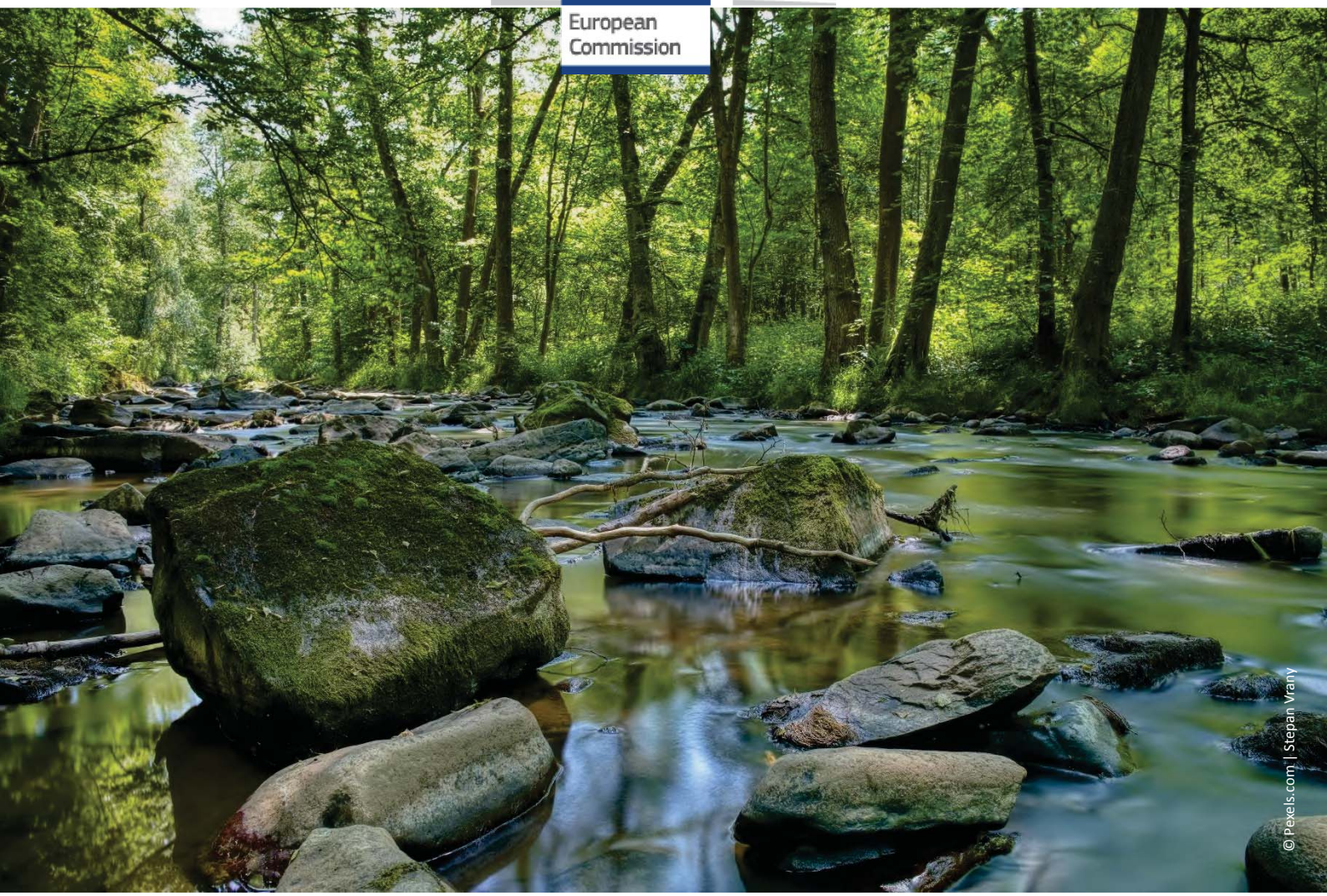
REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

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) 15 final} - {SWD(2025) 16 final} - {SWD(2025) 17 final} - {SWD(2025) 18 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}

European Commission



Country specific staff working document

Poland

Content

SECTION A:

WATER FRAMEWORK DIRECTIVE

1. General info, member state characterisation

Poland is the fifth largest country in the EU with a surface area of 307 thousand square kilometres[1]. Its territory stretches from the Baltic Sea in the north to the Carpathian Mountains in the south. The northern part of the country is mainly lowlands with lake districts, whilst the most southern part is mountainous. The renewable freshwater resources are scarce with less than 60 000 million cubic metres annually[2].

The Polish economy has been growing steadily for decades, except the short drop in 2020[3]. More than half of Poland's population is living in urban areas (22.5 million out of 37.8 million inhabitants)[4]. The densest areas are in and round the largest cities Warsaw-Lodz, Krakow-Katowice, and Wroclaw, as well as Gdansk-Sopot-Gdynia. While these areas have the highest economic activity, the agri-food sector, however, plays nationally a great importance with 1.3 million farms (14% of EU total)[5]. Agricultural is the dominating land use in Poland exceeding to 59% of total surface area[6]. Yet, the share of organic farming is very low, around 3.5%, well below the EU average of 9% in 2020.

[1] Eurostat – Area by NUTS 3 region (not including territorial waters): https://ec.europa.eu/eurostat/databrowser/bookmark/fabcfca6-4abb-4a84-ac1c-7bb335af436a?lang=en
[2] Eurostat – Water statistics: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Water_statistics
[3] Eurostat - GDP and main components (output, expenditure and income): https://ec.europa.eu/eurostat/databrowser/bookmark/53d10133-3a33-4401-8c7a-ee9d0268e655?lang=en
[4] Sytuacja demograficzna Polski do roku 2022: https://stat.gov.pl/obszary-tematyczne/ludnosc/ludnosc/sytuacja-demograficzna-polski-do-roku-2022,40,3.html
[5] Eurostat, Farms and farmland in the European Union – statistics: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Farms_and_farmland_in_the_European_Union_-_statistics#Farms_in_2020
[6] OECD Country fact sheet Poland: https://www.oecd.org/regional/regional-policy/land-use-Poland.pdf

Poland has nine River Basin Districts (RBDs). It must be highlighted that all RBDs are transboundary meaning that they are shared with other countries, and all its rivers end up into the Baltic Sea except for the rivers in the Danube and Elbe RBDs. Two RBDs – Vistula and Oder – play a dominating role since they cover 97% of the country.

In total, there are 4 240 surface water bodies out of which three quarters are rivers and one quarter are lakes. There are only few transitional and coastal water bodies and no territorial waters. In total, there are 174 groundwater bodies.

Poland remains a highly biodiversity rich country and considering both Natura 2000 and other nationally designated protected areas, Poland legally protects around 40% of its terrestrial areas and 22% of marine areas[7]. However, the share of habitats in bad conservation status has increased to 35% and that of assessments for species in bad conservation status has remained stable at around 13%.

Reporting

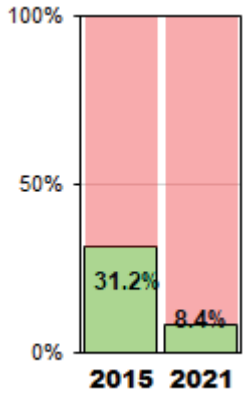
The deadline for reporting the 3rd RBMPs was in March 2022. The Commission and the EEA together with Member States developed an electronic reporting system in WISE (Water Information System for Europe). Its use was voluntary. Some Member States used it to fulfil their obligations, others reported the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

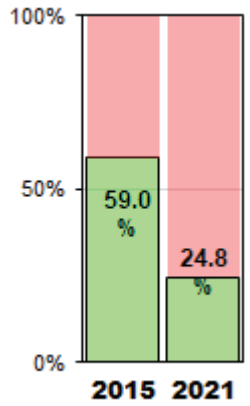
By September 2023 Poland have not submitted full electronic reporting. Therefore, the assessment is based on the data mining of the pdf RBMPs. However, Poland reported electronically in 2024 and this information has been partially used in this assessment report.

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, including Poland's e-electronic reporting, by July 2024 in their products and dashboards available at WISE Freshwater web portal.

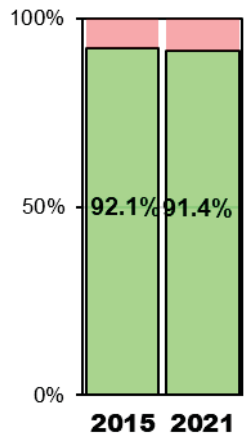
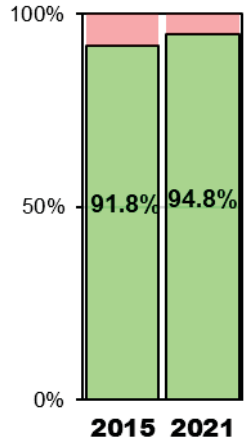
[7] Biodiversity information system for Europe – Poland: https://biodiversity.europa.eu/countries/poland

Changes in Status, Pressures, Exemptions & Measures

Surface Water Bodies	Trend (% good status/potential)	Main Pressures & Changes & Exemptions
The total number of SWBs has decreased since the 2nd RBMPs, from 5 649 to 4 240. 75% of SWBs are rivers and they have the highest drop in the number of water bodies from 4 586 to 3 161.		
ECOLOGICAL STATUS		The surveillance and operational monitoring cover together 97% of river water bodies and reservoirs, 79% of lake water bodies and 100% of transitional and coastal water bodies. There is more complete monitoring data compared to the 2nd RBMPs, comprising all applicable biological quality elements. 68% of river water bodies, 67% of lake water bodies and 100% of transitional and coastal water bodies are classified using monitoring data. Worryingly, the proportion and the number of water bodies in good or better status or potential has decreased from 31% to 8.4%. Prominently, none of the transitional and costal water bodies are in good ecological status.

CHEMICAL STATUS		There is more complete monitoring data compared to the 2nd RBMPs, covering 45% of SWBs and including all 45 priority substances. It is not clear if monitoring of priority substances only includes water matrix or also biota and sediments. The graph shows chemical status including ubiquitous substances. Only 24.8% of all SWBs are in good chemical status, up to 53.5% are in poor chemical status, and 21.7% are in unknown status. Compared to the 2nd RBMPs, the number of water bodies in good chemical status has significantly dropped from 3 331 to 1 150. The failure to achieve good chemical status is primarily because of uPBT substances, particularly PAH, PBDE, and PFOS.
Regarding the exemptions for both ecological and chemical status, Article 4(4) has been applied to 19% of SWBs on the grounds of technical feasibility and / or disproportionate costs and to 76% of SWBs on grounds of natural conditions. Furthermore, Article 4(5) has been applied to 52% of SWBs on the grounds of technical feasibility and / or disproportionate costs and to 12% of SWBs on grounds of natural conditions. There is a total of 254 investment projects meeting the conditions for exemptions according to Article 4(7).		

Ground Water Bodies	Trend (% good status/potential)	Main Pressures & Changes & Exemptions
The number of GWBs has increased by 2 since the 2nd RBMPs from 172 to 174.		

QUANTITATIVE STATUS		It is not clear how many groundwater bodies are covered by quantitative monitoring. The number of GWBs in poor quantitative status has increased from 13 to 15 since the 2nd RBMPs. Subsequently, in total, 26 GWBs are at risk of failing to meet quantitative objectives in the Oder and Vistula RBDs.
CHEMICAL STATUS		All GWBs and all substances causing risk of deterioration in chemical status are subject to monitoring. It is not clear, if all WFD core parameters i.e., nitrates, ammonium, pH, electrical conductivity, and oxygen are included in monitoring of groundwaters in all RBDs. The number of GWBs in poor chemical status has decreased from 14 to 9 since the 2nd RBMPs. Subsequently, in total, 32 GWBs are at risk of failing to meet chemical objectives in the Oder and Vistula RBDs. The main reason for the failure of good chemical status is the diffuse pollution from urban and mining activities, as well as due to saline intrusion, caused by ingress or upwelling of saline waters from drained groundwater layers.

Regarding the exemptions for both quantitative and chemical status, Article 4(4) has been applied to 6% of GWBs on grounds of natural conditions (none on grounds of technical infeasibility and / or disproportionate costs). Furthermore, Article 4(5) has been applied to 7% of GWBs on the grounds of technical feasibility and / or disproportionate costs and to 5% of GWBs on grounds of natural conditions.

2. Horizontal aspects

2.1 Governance

Poland has two large River Basin Districts (RBDs) which cover almost 97% of the country: Vistula (PL2000) and Oder (PL6000). Additionally, there are further seven RBDs which cover only very small areas in the territory of Poland: Danube (PL1000), Świeża (PL3000), Jarft (PL4000), Elbe (PL5000), Pregoła (PL7000), Nemunas (PL8000), and Dniester (PL9000). More information is provided in Table 1.

Table 1. Overview of Poland's RBDs

RBD	RBD Name	Size (km2) (% of RBD in Poland)	Countries sharing RBD
PL1000	Danube	385 (less than 1%)	DE, SK, UA, AT, BG, CZ, HR, HU, RO, IT, MD, ME, RS, SI, BA, AL, CH, MK
PL2000	Vistula	183 492 (app. 59%)	BY, RU, UA, SK
PL3000	Świeża	161 (less than 1%)	RU
PL4000	Jarft	210 (less than 1%)	RU
PL5000	Elbe	238 (less than 1%)	CZ, DE, AT
PL6000	Oder	118 499 (app. 38%)	CZ, DE
PL7000	Pregoła	7 522 (app. 2.5%)	RU
PL8000	Nemunas	2 515 (less than 1%)	BY, LT (RU)
PL9000	Dniester	233 (less than 1%)	UA (MD)

Source: 2nd RBMPs WISE reporting

Poland has organised the implementation of the Water Framework Directive (WFD) mainly through the Directors of the Regional Water Management Boards[8] (16 in total) and the National Water Management Authority. Many RBDs are managed by multiple Regional Water Management Boards, and for example, the Vistula RBD is within the jurisdiction of seven different boards, while the Oder RBD is managed by five boards. At regional level, the Voivodships and municipalities have mainly a role in the implementation of measures.

All nine RBDs are transboundary and the cooperation with other countries varies depending on the RBD. For the Danube RBD, Elbe RBD and Oder RBD, an international agreement, permanent cooperation body and international RBMP are in place. For the Oder RBD, the coordination is carried out under International Commission for the protection of the Odra River against pollution (MKOO/IKSO)[9]. For Danube RBD and Elbe RBD, there are similar international commissions as in the Oder RBD[10]. As regards the Vistula RBD, Poland has a bilateral commission with Slovakia. Furthermore, there is a bilateral agreement with Belarus, Russia (Kaliningrad) and Ukraine concerning Vistula and

[8] Polskie Gospodarstwo Wodne Wody Polskie (PGW WP): https://www.wody.gov.pl/
[9] International Commission for the protection of the Odra River against pollution: https://www.mkoo.pl/index.php?lang=EN
[10] Danube RBD: https://www.icpdr.org/ and Elbe RBD: https://www.ikse-mkol.org/

other smaller RBDs. Finally, Poland is a contracting party of the Cooperation for the Protection of the Marine Environment of the Baltic Sea (HELCOM)[11].

The River Basin Management Plans (RBMPs) for Vistula and Oder are very long, almost 47 thousand and almost 35 thousand pages, respectively. The overwhelmed length and the absence of aggregated data related to e.g., coverage of water bodies by monitoring or the number of water bodies for each measure, impede the transparent overview of impacts of the plan. Subsequently, it discourages stakeholders and the public to give their reasoned opinions and suggestions.

The work programme, timetable, consultation plan and the draft RBMPs have been subject to public consultation for six months. However, the overview of the significant water management issues was not presented for consultation. A total of 1 529 comments were submitted through the consultation, 59% of them concerned the Vistula RBD, 38% concerned the Oder RBD, and 0.7% concerned the Pregoła RBD, and less than 0.3% for the remaining RBDs.

Poland conducted joint consultations with the Flood Risk Management Plans (FRMPs) under the Floods Directive; however, no joint consultation has been carried out for the Marine Strategy Framework Directive (MSFD). The authorities organised online consultation meetings in 15 cities, and an online conference to summarise the update in the preparation of the RBMPs and the FRMPs[12].

Poland did not adopt and publish its RBMPs in accordance with the WFD timetable.

2.2 Characterization of River Basin District

Poland has delineated a total of 4 240 surface water bodies and 174 groundwater bodies in the 3rd RBMPs. The surface waters include lakes (7 types), rivers (20 types), transitional waters (5 types) and coastal waters (2 types). Subsequently, Poland has delineated reservoirs which are addressed in the RBMPs as a separate water category[13]. There are no territorial waters.

Table 2. Number of river and lake water bodies, transitional and coastal water bodies, and groundwater bodies.

RBD (Index)	Rivers	Lakes	Transitional Waters	Coastal Waters	Groundwater Bodies
Danube (PL1000)	5	0	0	0	2
Vistula (PL2000)	1 745	499	5	2	94
Świeża (PL3000)	3	1	0	0	1
Jarft (PL4000)	1	0	0	0	1
Elbe (PL5000)	8	0	0	0	5
Oder (PL6000)	1 291	427	2	2	66
Pregoła (PL7000)	82	105	0	0	2

[11] Cooperation for the protection of the marine environment of the Baltic Sea: https://helcom.fi/
[12] Notification by the Ministry of Infrastructure, 6 May 2022: https://www.gov.pl/web/infrastruktura/projekty-ii-aktualizacji-planow-gospodarowania-wodami-na-obszarach-dorzeczy---raport-z-konsultacji-spolecznych
[13] Subsequent information provided electronically by Poland features reservoirs included in the category rivers.

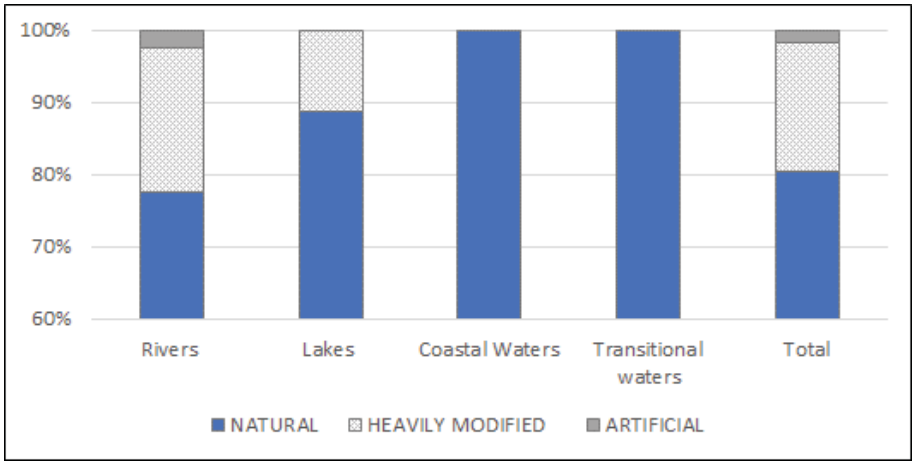
Nemunas (PL8000)	24	36	0	0	2
Dniester (PL9000)	2	0	0	0	1
TOTAL	3 161	1 068	7	4	174

Source: WISE electronic reporting

Compared to the 2nd RBMPs, the number of river water bodies has decreased significantly by over 30% (from 4 586 to 3 161). This is due to a change in methodology, and Poland explains that changes in hydrographic divisions of catchment areas have resulted to many changes in the surface water bodies[14]. This change has a bearing in the comparability of data between the 2nd and 3rd RBMPs and the establishment of trends.

The level of human intervention is considerable, though in total, 80% of surface water bodies are natural (3 413) comprising all transitional and coastal waters (Figure 1). The number of heavily modified water bodies (HMWBs) is 753 (633 river water bodies and 120 lake water bodies) and artificial water bodies (AWBs) is 74 (all of them are rivers or reservoirs).

Figure 1. The proportion of natural, heavily modified, and artificial water bodies by water category and total.



Source: WISE electronic reporting

The water consumption has decreased steadily since early 2000's, and in 2020 it counted around 8 400 million cubic metres, with industry being the major user (71%)[15].

Poland has established type-specific reference conditions for all relevant quality elements for all water body types across all water categories. According to the latest update of intercalibration exercise in 2024[16], the intercalibration of biological quality elements has been accomplished in all water categories.

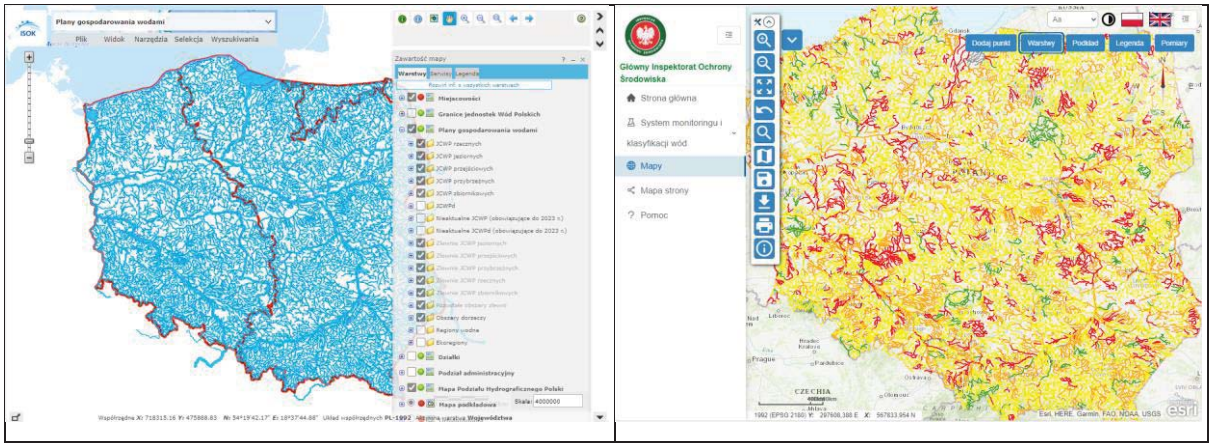
For the Oder RBD, the uniform characteristics could not be agreed in some cases of transboundary water bodies, and therefore, these water bodies continue to be presented on the maps of the Water Management Plan for the International Oder River Basin District in different ways, according to the methodology and classification applicable in individual countries.

[14] Subsequent comments provided in March 2024 from the Ministry of Infrastructure
[15] Atlas of Environment: https://stat.gov.pl/en/topics/environment-energy/environment/atlas-of-environment,6,1.html
[16] Intercalibration gaps, update March 2024: https://circabc.europa.eu/ui/group/9ab5926d-bed4-4322-9aa7-9964bbe8312d/library/588d243a-a12f-4d1f-9bf5-f5e31d352f37/details

Poland shares water information via Hydroportal and via service of Chief Inspectorate of Environmental Protection.

The Hydroportal[17] is a map-based service providing detailed information of the status of water bodies, including type of the water body, monitoring stations, status of water and classification of quality elements as well as protected areas. The map service can be used by public and experts. A second map service[18] provided by the Polish Chief Inspectorate of Environmental Protection provides tools to illustrate on the map the ecological status / potential and chemical status of surface water bodies. The latter functions as a viewer and do not give detailed information of single water bodies. Figure 2 shows a screenshot of both services.

Figure 2. Hydroportal map service provided by Polish Waters (left) and the map service provided by the Chief Inspectorate of Environmental Protection (screenshot of the services).



Source: Hydroportal and Portal jakości wód powierzchniowych

Multiple significant pressures are impacting surface and groundwaters in Poland.

Agriculture in Poland is characterised by a large diversity and fragmentation of the holdings[19], yet the average size is smaller than the EU average[20], with a pesticide consumption considerably lower than other large farming European countries (Spain, France, Germany, and Italy), despite the very low share of organic farming. Based on the reporting under the Nitrates Directive, we can conclude that nitrogen from agriculture has in general less significant effect on eutrophication of inland surface waters compared to the impact of phosphorus[21]. Nitrogen is showing only slight increase in concentrations; however, no information is provided on the trend of phosphorus concentrations.

In terms of coverage of wastewater treatment, Poland sees a positive trend through years. According to the latest reporting under the Urban Waste Water Treatment Directive, the purification is mainly based on biological treatment (63%), however, additional nitrogen and phosphorus removal are widely spread (34%)[22]. Still, there are some wastewater plants with only primary treatment.

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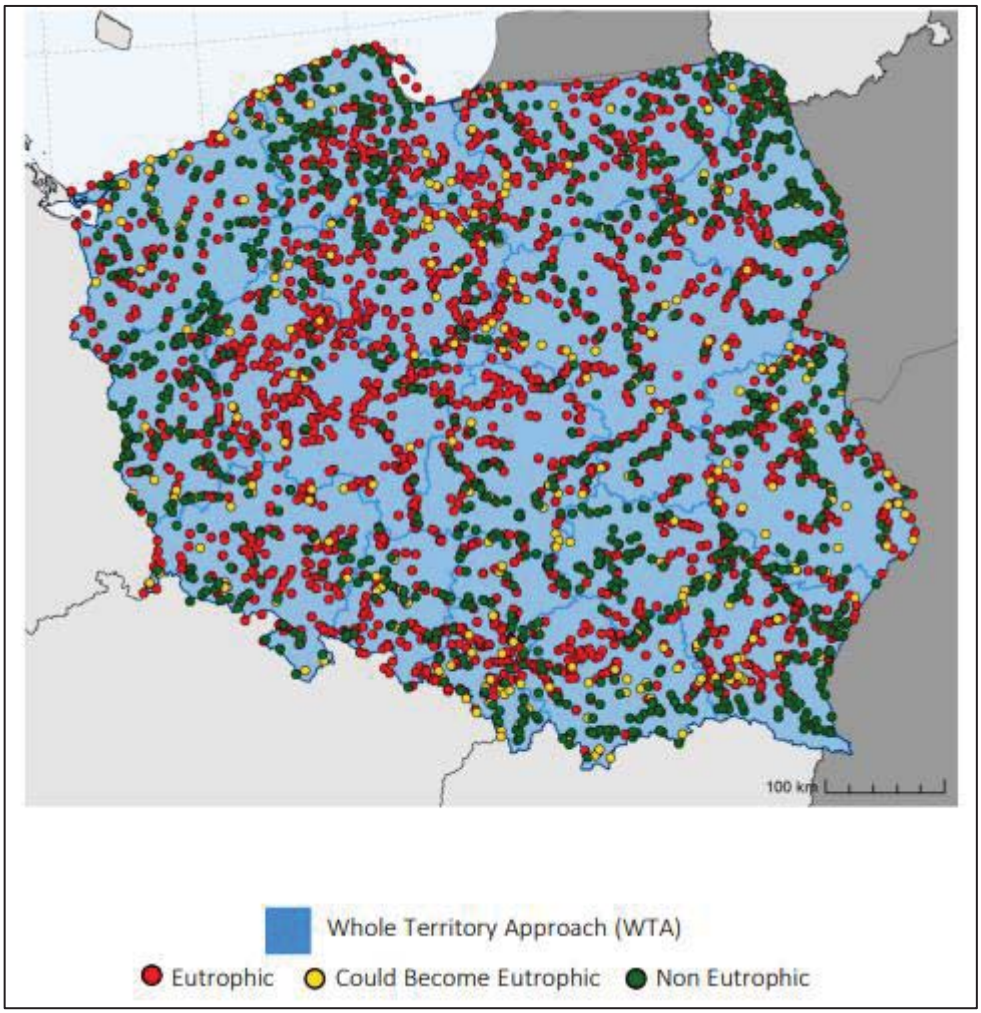
[17] Hydroportal: https://wody.isok.gov.pl/imap_kzgw/?gpmap=gpPGW
[18] Portal jakości wód powierzchniowych: https://wody.gios.gov.pl/pjwp/
[19] Size Structure Transformation of Polish Agricultural Farms in 2010–2020 by Typological Groups of Voivodeships (Badach et al. 2023): https://doi.org/10.3390/agriculture13091789
[20] Eurostat: Farms and farmland in the European Union – statistics: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Farms_and_farmland_in_the_European_Union_-_statistics
[21] The Nitrates Directive Reporting 7 (2016-2019), Poland: https://water.jrc.ec.europa.eu/arcgis/rest/services/nid/msNidReporting7/MapServer/2/1034/attachments/191
[22] WISE – country profiles on urban waste water treatment – Poland: https://water.europa.eu/freshwater/countries/uwwt/poland

Surface waters

Industry and municipal wastewater are the main point source pressures, and agriculture is the main diffuse pressure. Dewatering of mines and changes in flow and river bed, as well as existing dams and other structures are causing hydromorphological pressure. In the Oder and Vistula RBDs, over 90% of river water bodies and 60-70% of lake water bodies are at risk not achieving the environmental objectives because of these anthropogenic pressures.

The excess of nutrients discharged into the surface waters leads to eutrophication causing proliferation of algae blooms and oxygen depletion in both lakes and coastal waters. Under the Nitrates Directive reporting, Poland indicated that many monitoring points across the country show surface waters as eutrophic or at risk of becoming eutrophic (Figure).

Figure 3. Map of the monitoring points showing eutrophication assessment in Poland, according to the reporting of the Nitrates Directive[23]



HELCOM has calculated that the annual input of total nitrogen and total phosphorus in 1997-2003 from the river basins of Oder and Vistula was in total 161 512 tonnes and 10 284 tonnes, respectively[24].

[23] NITRATES DIRECTIVE - Reporting Period 7 (2016-2019) – trophic status: https://water.jrc.ec.europa.eu/portal/apps/dashboards/cb6034c2a75e4df282f8a62f90c16caa

[24] The revised nutrient input ceilings to the BSAP update. HELCOM (2021): https://helcom.fi/wp-content/uploads/2021/10/Nutrient-input-ceilings-2021.pdf

The input ceiling for annual total nitrogen and total phosphorus has been estimated to be 124 105 tonnes and 3 904 tonnes, respectively. This translates to a 23% and 62% reduction needs for nitrogen and phosphorus, respectively. However, the Polish RBMPs did not include any estimation of reduction needs.

Regarding hydropower, while the country is rich of hydropower plants amounting 771, 99 % of them are small (capacity less than 10 MW)[25]. Three largest pumped hydropower plants cover more than half of the produced capacity. According to the information provided by electronic reporting, up to 108 river water bodies (ca. 6 000 km) are significantly affected by hydropower.

Subsequently, the pressure of invasive alien species (IAS) on waters has not been assessed. In total, there are 18 aquatic species of EU concern in Poland[26]. While no concrete measures are introduced to combat IAS, the national catalogue of measures, however, is taking into account the treatment of areas impacted with IAS by particular measures e.g., removing vegetation in lake shores or planning buffer zones.

Groundwaters

Groundwaters in Poland are impacted by municipal and industrial landfills, industrial sewage, wastewater, agricultural pollution, and road transport, as well as dewatering of mines. In the Oder and Vistula RBDs, 20-30% of groundwater bodies are at risk of failing to achieve environmental objectives because of these anthropogenic pressures. Strikingly, despite poor quantitative status of some GWBs, water abstraction is generally not identified as a significant pressure and it is not given a lot of attention.

3. Policy elements contributing to biodiversity and climate change adaptation

3.1 Surface Water: what is their ecological status or potential

Monitoring

Little information is provided on the assessment methodologies to classify water bodies for ecological status. From the very extensive pdf-documents provided, which did not include electronic reporting, it was not possible to evaluate how different monitoring programmes are covering surface water bodies and comprising the obligatory quality elements. In the Oder and Vistula RBDs, there are altogether 3 697 monitoring sites for ecological status. According to the available data in the pdf-documents, the surveillance and operation monitoring[27] together cover 97% of river water bodies and reservoirs, 79% of lake water bodies and 100% of transitional and coastal water bodies. Despite the very high monitoring coverage, less than 70% of lakes and rivers are classified on the basis of monitoring data, which raises the question why not all monitoring data are used for classification.

According to Polish authorities, all required biological quality elements are monitored[14], although the information provided in the RBMPs is not clear enough to find evidence of monitoring of biological quality elements (BQEs) for rivers and lakes. For BQEs in transitional and coastal waters, Poland

[25] The hydropower sector in Poland: Historical development and current status: https://doi.org/10.1016/j.rser.2022.112150
[26] EASIN - European Alien Species Information Network: https://easin.jrc.ec.europa.eu/easin/
[27] 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 aimed rather at identifying impacts and long-term changes.

indicates that the monitoring of macroalgae (seaweed such as kelps), phytoplankton (algae), and angiosperms are not applicable.

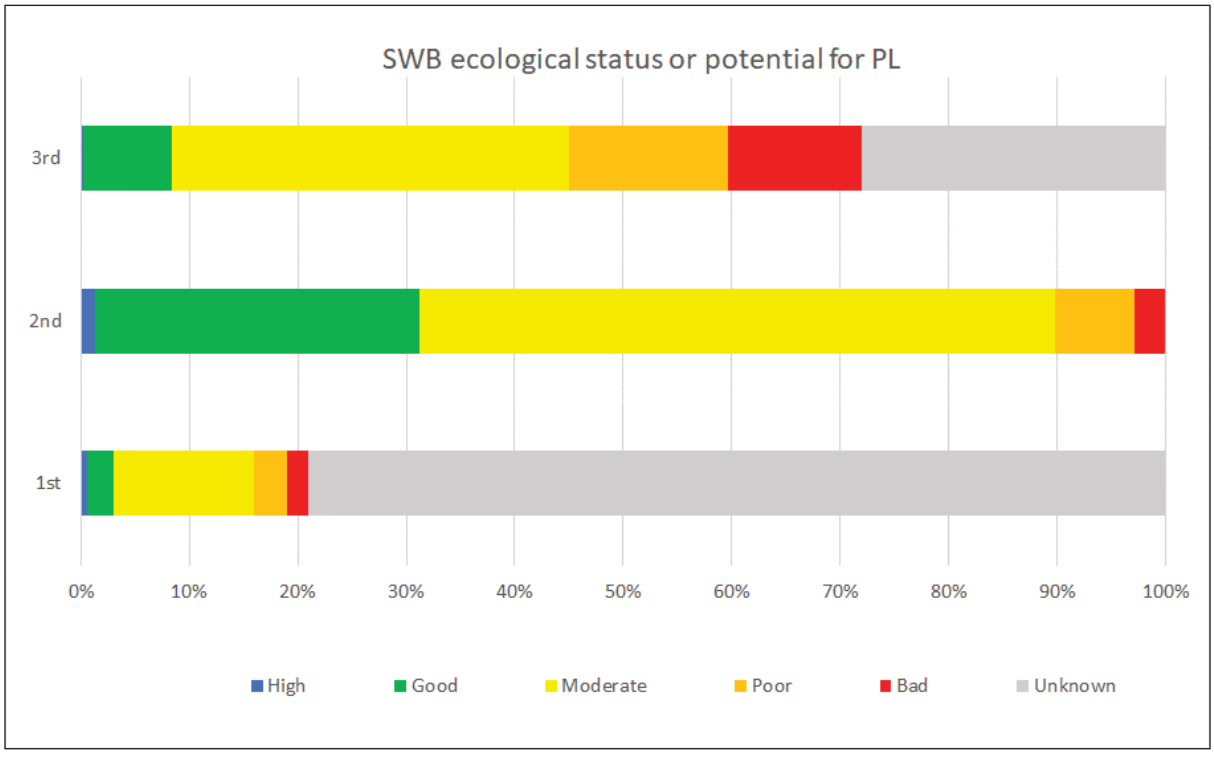
Status assessment

No information could be found on the methods developed for the classification of ecological status for hydromorphological and physico-chemical quality elements, and whether they are compliant with the WFD or linked to good status for the relevant biological quality elements. However, Poland conveyed that the reference conditions for physico-chemical quality elements in the definition of good ecological potential are listed in the regulation of the Ministry of Infrastructure[28].

Equally, we note with concern that it is not clear whether Poland has identified river basin specific pollutants (RBSPs), how they are monitored, and whether they have affected the classification of surface water bodies. No information could be found on the worse RBSPs that cause the failure to achieve good ecological status.

No positive development in the status of surface water bodies can be observed. Based on electronic reporting, Figure 4 shows that over 90% of surface water bodies do not reach good ecological status / potential in the 3rd RBMPs. In fact, regrettably, the proportion of water bodies in good ecological status has considerably decreased, and only 8 water bodies are in high ecological status. Moreover, we note with concern that the proportion of water bodies in the two lowest classes (poor and bad) has considerably increased. The lakes have the highest proportion of water bodies in bad ecological status; and it seems that none of the transitional and coastal water bodies reach good ecological status either.

Figure 4. Ecological status or potential of surface water bodies (SWBs) in Poland in the 1st, 2nd, and 3rd RBMPs.



Source: WISE electronic reporting

[28] Rozporządzenie w sprawie klasyfikacji stanu ekologicznego, potencjału ekologicznego i stanu chemicznego oraz sposobu klasyfikacji stanu jednolitych części wód powierzchniowych, a także środowiskowych norm jakości dla substancji priorytetowych (25 June 2021): https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20210001475

Indeed, 94% of river water bodies in the Vistula RBD and 95% in the Oder RBD are subject to such significant changes caused by anthropogenic pressures that they are at risk of failing to achieve the environmental objectives. 61% of lake water bodies in the Vistula RBD and 71% in the Oder RBD are at risk of not achieving the environmental objectives. More information about the type of pressures has been presented in section 2.2.

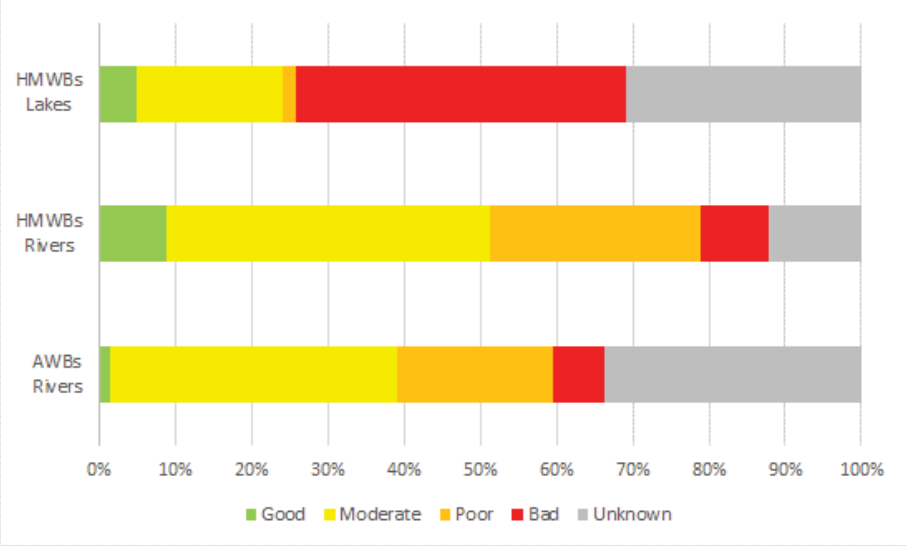
3.2 Hydromorphological changes and artificialization (HMWBs and AWBs)

Not much is given by the RBMPs regarding the methodology of designation of heavily modified water bodies and artificial water bodies in the Oder and Vistula RBMPs. The methodology for the designation of heavily modified water bodies is developed at national level and addresses the significant adverse effects of mitigation and restoration measures on the current use and the wider environment. It also assesses the other means to achieve the same beneficial objective served by the current modifications. It is worth noting that Poland has developed a hydromorphological index for rivers which measures the degree of deviation from the natural conditions with respect to hydrological and morphological alterations. Similar indices exist for lakes, transitional and coastal water bodies but these indices were not explained in more detail. Regarding hydromorphological pressures, only dams are mentioned causing physical alteration, and they are associated with hydropower and flood protection.

In its comments[29], Poland describes in more detail the method to define good ecological potential (GEP), but this information was not provided in the RBMPs or in the reported background documents.

According to WISE electronic reporting, only 8% of HMWBs and AWBs are in good ecological potential while 92% are in less than good ecological potential or unknown as follows: 319 in moderate, 192 in poor, and 114 in bad ecological potential; the status of 139 HMWBs / AWBs is unknown. Figure 5 shows the ecological potential of HMWBs and AWBs by water categories. Regrettably, the proportion of water bodies with unknown ecological potential is very high (in average 20%) and it is not clear what are the reasons for flawed classification.

Figure 5. The ecological potential of heavily modified water bodies (HMWBs) and artificial water bodies (AWBs) by water categories.



Source: WISE electronic reporting

[29] Subsequent comments provided in March 2024 from the Ministry of Infrastructure.

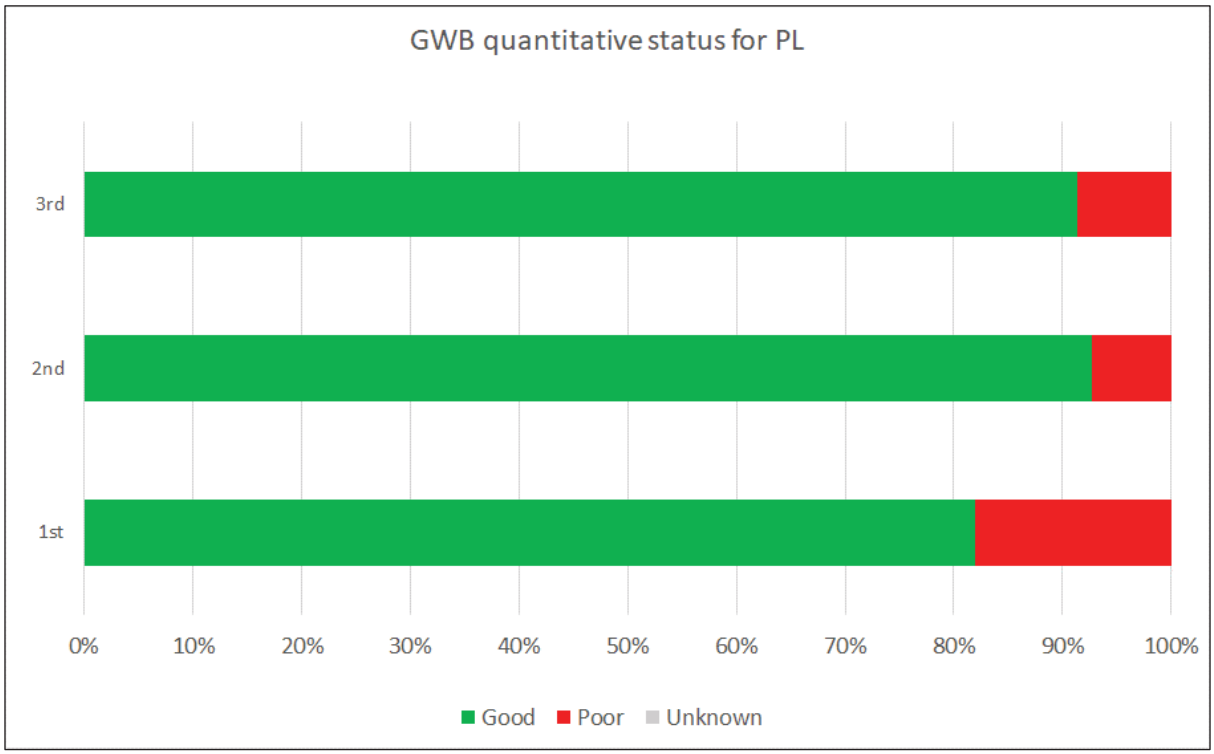
3.3 Groundwater bodies - have they sufficient water – quantitative status

Because of lack of aggregated data in the RBMPs, it is not clear how many water bodies are covered by quantitative monitoring and how many monitoring sites have been used. The methodology for groundwater quantitative status assessment is described in the 3rd RBMPs and considers the assessment of water balance, long-term groundwater level trends and pressure head, as well as the assessment of impacts on groundwater dependent terrestrial ecosystems and the assessment of saline or other intrusions. However, Poland has not identified any Natura 2000 areas associated (see section 3.4) with groundwaters which leaves uncertainty how impacts on groundwater dependent terrestrial ecosystems has been assessed. The Polish quantitative status assessment includes therefore uncertainties, especially in regions with Natura 2000 areas.

Despite of the large proportion (91%) of groundwater bodies in good quantitative status (see Figure 6), there are still 15 groundwater bodies not meeting the objective of good quantitative status. There seems to be a deterioration compared to the 2nd RBMPs, as there is an increase of two groundwater bodies in poor quantitative status. Subsequently, 21% of groundwater bodies in the Vistula RBD and 32% in the Oder RBD are at risk of failing to achieve environmental objectives.

According to the 3rd RBMPs of the Oder RBD (PL6000) and Vistula RBD (PL2000), the main reason for the failure of good quantitative status is lowering of groundwater levels as a result of drainage for mining or as a result of water abstraction for public water supply and industry. There are also cases where drainage and overabstraction lead to negative impacts on groundwater dependent terrestrial ecosystems, as well as to saline intrusions, due to ingress or upwelling of saline waters from drained groundwater layers.

Figure 6. Quantitative status of groundwater bodies (GWBs) in Poland in the 1st, 2nd, and 3rd RBMPs.



Source: WISE electronic reporting

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

There are several reasons why certain water bodies are protected under the EU legislation. For surface water bodies, protected 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). Additionally, Nitrates Vulnerable Zones/Nitrate Sensitive Areas are designated under the Nitrates Directive and the Urban Waste Water Treatment Directive. For groundwaters, protected areas are designated under the Drinking Water and the Habitats and Birds Directives.

Poland has identified all types of protected areas which are associated with surface waters and groundwaters (Table 3). Since the 2nd RBMPs, there have been some changes in the number of water bodies associated with protected areas. The most significant changes concern the Natura 2000 areas where we see an increase from 189 to 3 789 water bodies, and Bathing Water Directive, increase from 123 to 517 bathing waters. Unfortunately, no information could be found to explain these changes.

Table 3. Number of water bodies included to the protected areas listed in Annex IV to the WFD which are associated with surface and groundwaters in the 3rd RBMPs.

Areas with special protection	Number of water bodies associated with	
	Surface water	Groundwater
Drinking Water Protection Zones	179	174
Bathing Waters	517	0
Natura 2000; Birds and Habitats Directives	3 789	0
Nitrate Vulnerable Zones	4 240	0
Protection of economically significant aquatic species	180	0

Source: Data mining of the 3rd RBMPs

As regarding groundwaters, all 174 water bodies are associated with the drinking water protected areas. Surprisingly, there are no Natura 2000 areas associated with the groundwaters, despite the high proportion of land designated as Natura 2000 in the country. This entails that no groundwater dependent terrestrial ecosystems seem to have been considered in the assessment of the quantitative status of groundwaters.

As many other Member States, Poland has designated all its territory as a Nitrate Vulnerable Zone or Nitrate Sensitive Area according to the Nitrates Directive and Urban Waste Water Treatment Directive, respectively.

No detailed information is provided about additional objectives for protected areas, nor information can be found regarding additional measures set for protected areas. There are general mentions about non-deterioration requirement of water quality for water bodies designated as drinking water protection zones, as well as environmental objectives for water bodies related to Natura 2000 areas

which are based on the requirements of these areas. These are very general objectives and do not give a sufficient picture of improvement of status of water bodies related to protected areas.

3.5 What is being done to prevent/reduce hydromorphological pressures

As an outstanding approach, Poland shall be praised for its methodology of ranking measures according to socio-economic effect in the Oder RBD. The actual measures to tackle hydromorphological pressures include e.g., fish ladders, habitat restoration, and building spawning and breeding areas. However, specific measures to improve lateral connectivity by restoring floodplains and river banks could not be found. It is also not clear if there are measures to improve hydrological conditions of surface waters. It seems that ecological flow has been partially defined and implemented for water bodies located in protected areas; however, work is still on-going to update the definition by including biological aspects. In its comments[14], Poland states that environmental flow is considered in the permitting as a minimal flow to ensure the preservation of the protected areas.

Poland has introduced in 2020 a national handbook[30] which sets the objectives for restoration measures, provides practical aspects to the restoration process, and introduces restoration examples, including nature-based solutions to mitigate floods and droughts. The programme concludes that all surface water bodies in Poland require restoration measures to improve hydromorphological conditions including river and floodplain retention, restoration of wetlands and peatlands, restoration of longitudinal continuity and diversity of water bodies. Poland considers that some measures can be classified as nature-based solutions and they provide social and economic benefits, but it is not clear how nature-based solutions are prioritised.

No aggregated data is provided on the number of water bodies subject to measures to tackle hydromorphological pressures. Despite listing measures at water body level in the RBMPs, Poland fails to provide any estimation of the effect of measures on biological and other quality elements and only introduces an overall assessment of measures rating environmental, social, and economic effects.

In terms of basic measures, there is an authorisation and / or permitting regime in place to control physical modifications according to WFD. No information can be found on the permitting of water impoundments (reservoirs, dams, etc.) in the reported RBMPs. It is not clearly described how permits related to hydromorphological alteration of surface waters are reviewed. However, it is said that permits might be revoked for water bodies at risk not meeting the environmental objectives. Poland has an index for barriers and other dam constructions which can be envisaged as a register, but this register is not mentioned to include other structures altering hydromorphological characteristics of surface waters.

3.6 What Poland is doing for abstractions and water scarcity

Water abstraction is not identified as a significant pressure in Poland. The current estimation of the annual Water Exploitation Index Plus (WEI+) in Poland varies between 5.5 and 10.5 for the period 2000-2019[31], while water scarcity is generally considered to occur when the ratio of water abstraction to

[30] Podręcznik dobrych praktyk renaturyzacji wód powierzchniowych: https://www.gov.pl/web/wody-polskie/krajowy-program-renaturyzacji-wod-powierzchniowych

[31] Water exploitation index, plus (WEI+) from 2009 to 2019: https://ec.europa.eu/eurostat/databrowser/bookmark/8e6c6e33-3a7c-4c9a-b6c7-11710a1fbba0?lang=en

long-term average available water resources exceeds 20. Yet, as mentioned earlier, renewable freshwater resources in Poland are quite scarce and seem to point to water stress given the large demands of users.

In 2016-2021, the average annual water abstraction in Poland was approximately 10 billion cubic metres of which over 75% amounts of surface waters and 25% of groundwaters[32]. The main users are cooling of electricity production, public water supply and agriculture. According to the 3rd RBMPs, water abstraction is mainly estimated based on available permit data, while abstractions exceeding the permitted volumes or non-permitted abstractions are missing, most likely causing an underestimation of abstracted volumes.

The RBMPs are not showing how many groundwater bodies are subject to significant pressure from abstraction. Poland lists each water body and its pressures in annexes to the RBMPs, but no aggregated data is available of number of water bodies which are subject to significant abstraction. According to the electronic reporting, there are 5 river water bodies and 51 groundwater bodies identified with significant pressures of abstraction.

There is an authorisation and / or permitting regime to control surface and groundwater abstractions, and furthermore, there is a register of abstractions from both surface water and groundwater. Poland requires an authorisation for any abstractions except for ordinary water use[33] and permits are limited in time.

3.7 Adaptation to climate change

There is limited information on the impacts of climate change on water management in the RBMPs, and some measures are indicated to be adaptation measures. Not much is included in the plans regarding risk assessment and analysis of the impacts of climate change on environmental objectives of water bodies. An analysis of the impacts of drought on the ecological / chemical status of surface water bodies has been included in the Oder RBMP which shows that droughts could potentially lead to the deterioration of 13.4% of water bodies from good to less than good.

Poland defines the prolonged drought as "a phenomenon consisting of the occurrence of a hydrological or hydrogeological drought at the local, subregional or regional level […] which may result in limitations in the possibility of using water, access to water services or the possibility of agricultural or forestry production." Indeed, drought is a regular phenomenon in Poland, and it is expected in the future that water will be scarce more frequently and longer compared to previous decades[34]. However, the Oder and Vistula RBMPs indicate insignificant changes to availability of surface and groundwater resources in the short (2050) and long term (2100) which is a contradiction with the assessment of droughts potentially leading to deterioration of water bodies in the Oder RBMP.

It is welcomed that, in 2021, Poland adopted a national plan to counteract drought impacts[34] with four specific objectives: effective management of water resources to increase available water resources; increasing water retention (storage); drought education and coordination of drought-related activities;

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[32] Eurostat - Annual freshwater abstraction by source and sector (not considering leakages or evaporation from the surfaces of reservoirs and canals after abstraction): https://ec.europa.eu/eurostat/databrowser/bookmark/766ea785-adc5-48cc-bbd7-299ee3e66074?lang=en

[33] The "ordinary water use" allows the land owner to abstract up to 5 cubic metres of surface or groundwater daily, Art. 33(4)(1) of Water Law: https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20170001566/U/D20171566Lj.pdf

[34] Plan przeciwdziałania skutkom suszy: https://dziennikustaw.gov.pl/D2021000161501.pdf

and creating mechanisms for the implementation and financing of activities aimed at counteracting the effects of drought. However, according to the analysis commissioned by the European Commission[35], the Polish plan primarily focuses on water retention infrastructure measures, and it does not concretely suggest organisational, operational and follow-up measures for drought event crisis management, e.g., water allocation priorities, relief / response measures.

While the River Basin Management Plans do not include a lot of information on possible impacts of climate change, in the Vistula RBMP, 95 measures are assigned as adaptation measures, including protection of habitats / species; wastewater management; controls of fish migratory; and reduction of pollutant runoff. In the Oder RBMP, 25 of measures are linked to the climate change; however, there is a lake reclamation measure included in the RBMP which decreases the retention area and hence might indicate maladaptation to climate change.

Flood management

The Floods Directive requires to consider the impacts of climate change on the occurrence of floods, and therefore in the preparation of Flood Hazard and Risk Maps (FHRMs) and Flood Risk Management Plans (FRMPs). More information on these can be found in Section B. However, considering the close relationship between overall water management and floods management and the importance of climate change on both, consideration climate change is jointly addressed in this section.

The second FHRMs, similarly to the first FHRMs, took climate change into account only for coastal flooding and as a factor affecting rising water levels in its calculations. The rise in sea level along the Polish Baltic seacoast as a result of climate change was factored into the model for calculating the level of water with a specified likelihood of exceedance. An increase for 2011-2030 of 5 cm was considered for the flood hazard maps. Results from the CLIMATE project[36], which in turn used scenarios developed by the Intergovernmental Panel on Climate Change (IPCC), were used in the methodology[37].

The FRMPs review projected impacts of climate change on flooding. The FRMPs explain that the impact of climate change on flood occurrence was considered at the stage of comparing the planning scenarios; in particular, potential changes in high water flows in the period 2021-2050 were considered. The FRMPs do not, however, refer to EU or national climate adaptation strategies. On the other hand, they state that long-term developments, including climate change, were taken into account during the assessment of alternative sets of actions for the "problem areas"[38]. Climate model projections indicate a future increase in mean annual precipitation for Poland, although there will be changes in the temporal distribution: precipitation will increase most in winter (with an increasing share of rain and a decreasing share of snow), while in spring and autumn precipitation will increase to a lesser extent. The projections of summer precipitation do not agree, however, whether overall there will be less or more precipitation. Climate change is nonetheless expected to exacerbate flood risks due to increased intensity and volume of rainfall events.

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[35] Schmidt et al., (2023). Stock-taking analysis and outlook of drought policies, planning and management in EU Member States: https://op.europa.eu/s/zicm

[36] https://klimat.imgw.pl/

[37] A team of IMGW-PIB (Institute of Meteorology and Water Management - National Research Institute) experts developed scenarios of sea level changes for the main mareographic stations for selected greenhouse gas emission scenarios (B1, A1B, A2), for the years 2011-2030 and 2081-2100, taking into account the influence of the circulation factor and expected changes in global sea level according to the IPCC. The project duration was from 2007 to 2013.

[38] A problem area is an area at risk of flooding for which the average annual potential flood losses are exceptionally high and therefore require urgent intervention.

4. Policy elements contributing to zero pollution

4.1 Surface Water: what is their chemical status

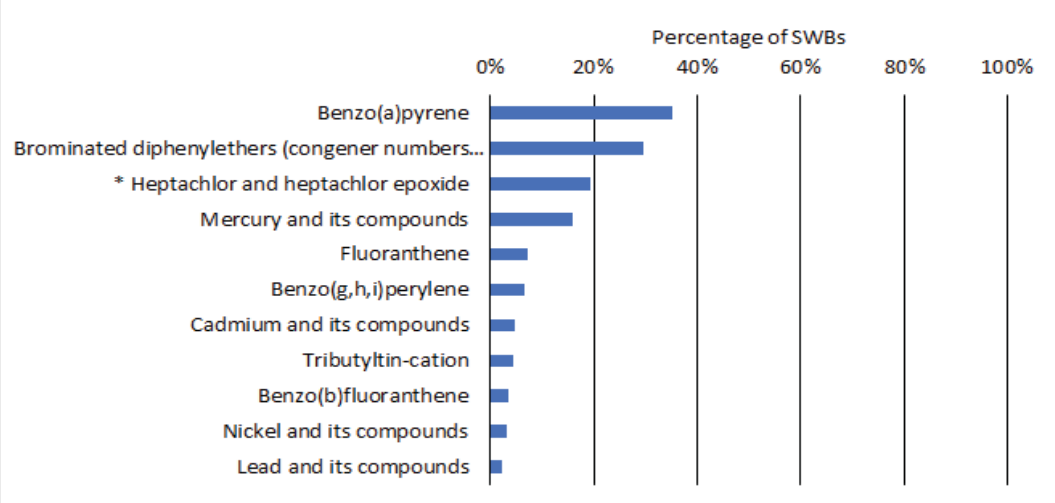
Monitoring

Poland has improved the coverage of monitoring for assessing chemical status since the 1st and 2nd RBMPs. In the 3rd RBMPs, the monitoring is already covering 42% of river water bodies, 60% of lake water bodies, and 100% of transitional and coastal water bodies. All 45 priority substances are included in the monitoring programmes. For the priority substances that tend to accumulate in sediment and / or biota, Poland has addressed the monitoring frequencies and methodologies of all relevant substances in their regulation[39]. In the RBMPs no aggregated data is available of the number of monitored water bodies.

Status assessment – Evolution of chemical status of surface water bodies since the 2nd RBMPs

The ubiquitous, persistent, bioaccumulative and toxic substances identified in Poland are polyaromatic hydrocarbons (PAHs), mercury, polybrominated diphenyl ethers (PBDEs), hexabromocyclododecane, heptachlor and heptachlor epoxide, and perfluorooctane sulphonic acid (PFOS). Based on electronic reporting, Figure 7 shows the proportion of surface water bodies affected by top-10 substances which are causing the failure to achieve good chemical status.

Figure 7. The top-10 Priority Substances causing failure to achieve good chemical status in surface water bodies in Poland with addition of one new priority substance.



Note: The new priority substance according to the 2008/105/EU as amended by 2013/39/EU[40] is marked with asterisk (*).

Source: WISE electronic reporting

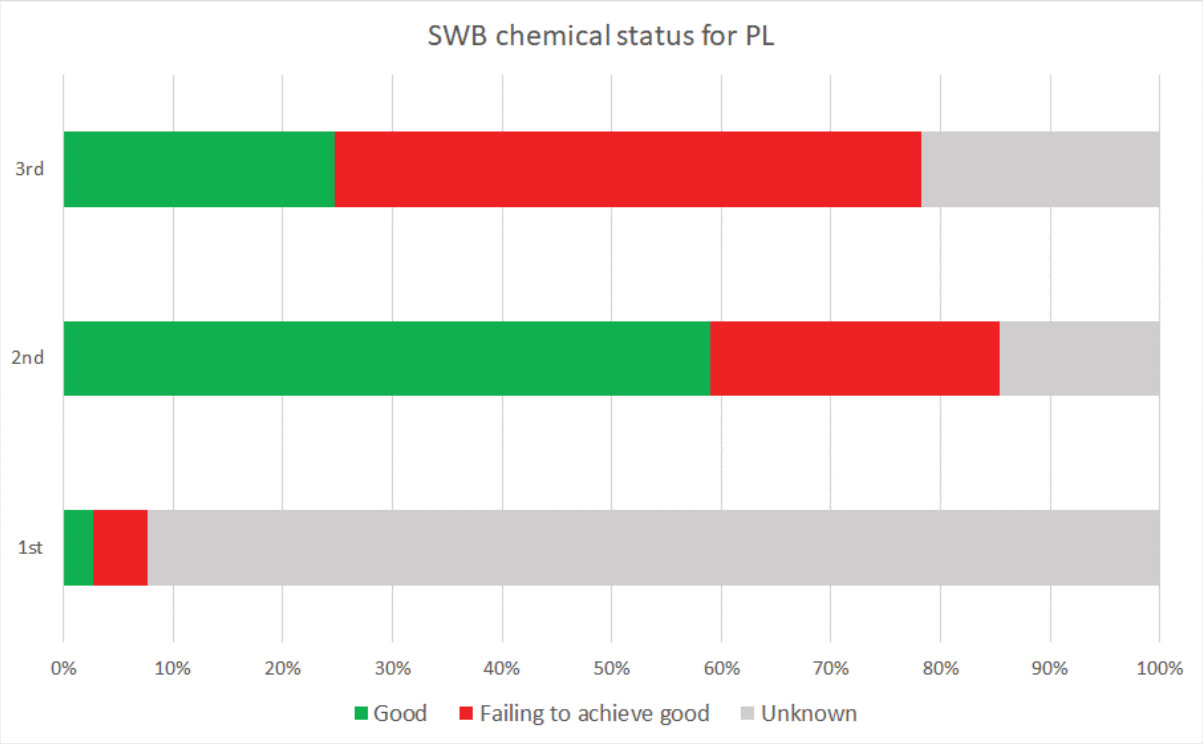
Figure 8 depicts that overall, 24.8% of all surface water bodies (1 050) are in good chemical status, 53.5% (2 268) are in poor chemical status and a considerable share of 21.7% (992) are with unknown status. Strikingly, the number of unknowns has increased compared to the 2nd RBMPs, i.e., from 829

[39] Rozporządzenie Ministra Infrastruktury z dnia 13 lipca 2021 r. w sprawie form i sposobu prowadzenia monitoringu jednolitych części wód powierzchniowych i jednolitych części wód podziemnych: https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20210001576

[40] 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.

to 992. Equally, it is noted with concern that compared to the 2nd RBMPs, there is a significant deterioration, as the number of water bodies in good chemical status has dropped from 3 331 to 1 050. It is not clear whether this drastic change is due to improved monitoring, to changes in the delineation of water bodies, or to increased chemical discharge/pressure. Poland has estimated the proportion of water bodies, which are in good chemical status by 2027, is exceeding to 50%.

Figure 8. Chemical status of surface water bodies (SWBs) in Poland in the 1st, 2nd, and 3rd RBMPs.



Source: WISE electronic reporting

4.2 Groundwater Bodies: what is their chemical status

Monitoring

Poland has included all groundwater bodies into the monitoring for chemical status, and all substances causing risk of deterioration are mentioned to be monitored. The coverage of both surveillance and operational monitoring has improved. However, it is not clear, if substances causing risk of deterioration[41] of chemical status are subject to monitoring of groundwaters in all RBDs.

Status assessment

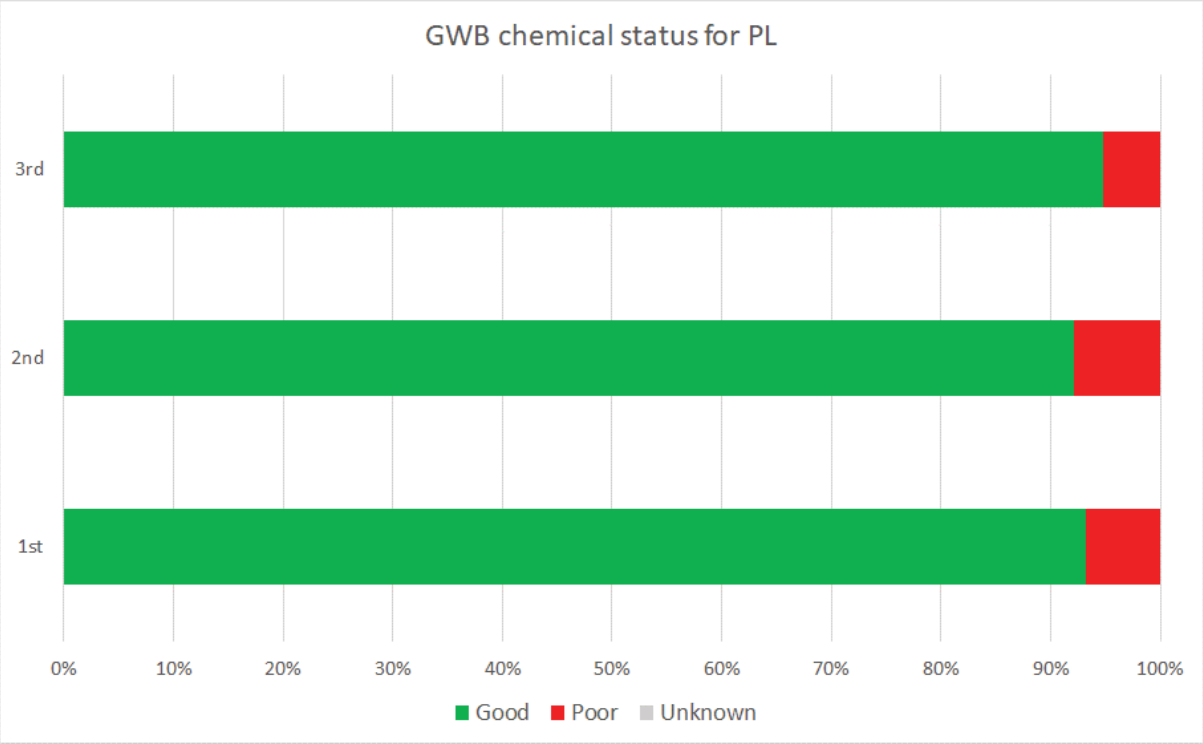
In its status assessment, Poland has considered also the groundwater associated aquatic ecosystems and groundwater dependent terrestrial ecosystems. It has established thresholds to assess the impact on these ecosystems. However, Poland has not identified any Natura 2000 areas associated with groundwaters (see section 3.4) which leaves uncertainty how impacts on groundwater dependent terrestrial ecosystems has been assessed. Nonetheless, the intrusion of saline and other pollutants has been also considered.

[41] Substances in GWD Annex I and Annex II (Part B) and core parameters in WFD Annex V section 2.4.2

It is noted very positively that, according to the data provided, almost all groundwater bodies are in good chemical status, i.e., 95% of all groundwater bodies (165). Figure 9 depicts that since the 2nd RBMPs, the chemical status of groundwaters has improved from earlier 14 to 9 groundwater bodies in poor chemical status. For the Vistula and Oder RBDs, Poland explains that the main reason for the failure of good chemical status is diffuse pollution from urban and mining activities, as well as saline intrusion caused by ingress or upwelling of saline waters from drained groundwater layers.

The top 5 pollutants causing failure to achieve good chemical status of groundwater bodies are mentioned to be potassium, nitrates, chloride, sodium, and iron. However, on one hand, potassium, sodium, and iron are not among those pollutants which are used for the assessment of chemical status of groundwaters, but on the other hand, they affect the conductivity which is an indicative parameter of saline or other intrusions.

Figure 9. Chemical status of groundwater bodies (GWBs) in Poland in the 1st, 2nd, and 3rd RBMPs.



Source: WISE electronic reporting

4.3 What Poland is doing to combat pollution from agriculture

As mentioned earlier, agriculture plays a great role in the Polish economics, and it is exerting pressure on the status of both surface waters and groundwaters. This has led the country to designate the whole territory as a Nitrates Vulnerable Zone. Poland indicates that the measures to tackle pollutants from agriculture are implemented in the action plan defined by the Nitrates Directive[42]. Poland has not assessed the need for reduction of nutrient loads or pesticide use from agriculture and has not introduced the measures to bridge these gaps to achieve the environmental objectives of WFD.

[42] Programu działań mających na celu zmniejszenie zanieczyszczenia wód azotanami pochodzącymi ze źródeł rolniczych oraz zapobieganie dalszemu zanieczyszczeniu: https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200000243

Moreover, not all measures from the 2nd RBMPs have been implemented due to financial constraints and lack of knowledge.

The measures described in the 3rd RBMPs are very general and do not allow to conclude to what extent they will reduce agricultural emissions. Among the measures, Poland mentions control activities to reduce diffuse pollution from agriculture; educational and advisory activities for farmers; control activities to the use of pesticides; and voluntary application of actions for improving agricultural practices. The Polish CAP strategic plan 2023-2027 is focussing on soil health and protection of wetlands and peatlands which will have positive effects and the related water bodies and on water infiltration and retention[43]. Wetting peatlands will also reduce the nitrogen emissions related to oxidation of the peat exposed to air. Poland aims to almost double its present low share of organic farming from 2.5% to 4.5% by 2030.[44] Subsequently, there is a list of national measures and specific measures in the RBMPs. One concrete measure is setting buffer strips for lakes but even here no information is provided on how many lake water bodies are subject to this measure. Poland provides no further measures to tackle hydromorphological impacts by agriculture.

To improve quantitative status of groundwater, Poland mentions measures to reduce water consumption, foster water-saving irrigation techniques, improve retention of rainwater, and slowing the run-off from the catchment area. However, there is no further description of what specific measures are implemented and what can be expected to be achieved.

4.4 What Poland is doing to combat pollution from other sectors

Poland indicates that several basic measures related to reduction of emission from industry, wastewater treatment, urban areas, tourism, and transportation are needed to tackle pollution not related to agriculture. However, the measures are mentioned in general terms with no details of the concrete actions or no information of the expected results to be achieved by the measures. It is also not clear how many water bodies are subject to measures.

According to reporting of the UWWTD in 2018, 87% of urban wastewater is treated in line with EU legislation in Poland and there is still room for improvement in collecting and treating wastewater[45].

Poland has not provided a gap assessment to estimate how much pollution needs to be reduced in order to achieve the WFD objectives. It is also unclear whether Poland is working on reducing pollution loads by means of revising existing water pollution permits. It is a paramount to address remaining persistent pollution challenges that will worsen due to climate change. Doing so would also be in line with the findings of the EU analysis report of the 2022 ecological disaster in the Oder River[46]. The report recommended to review existing permits for industrial emissions and wastewater discharges to lower pollutant loads and introduce obligations to temporarily suspend or limit discharges in case of emergencies.

[43] Mapping and analysis of CAP strategic plans (2023-2027): https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cmef/regulation-and-simplification/mapping-and-analysis-cap-strategic-plans_en
[44] At a glance: Poland's CAP Strategic Plan: https://agriculture.ec.europa.eu/document/download/7716493a-28a0-4a7c-a66d-e54803e42bdd_en?filename=csp-at-a-glance-poland_en.pdf
[45] WISE – country profiles on urban waste water treatment – Poland: https://water.europa.eu/freshwater/countries/uwwt/poland
[46] An EU analysis of the ecological disaster in the Oder River of 2022: https://publications.jrc.ec.europa.eu/repository/handle/JRC132271

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

Overall, a total of 171 various national measures have been included in the Vistula and Oder RBMPs; 115 are basic measures and 56 supplementary measures. For surface waters, the measures have been assessed at a water body level by using a cost-effectiveness analysis including effectiveness criteria, feasibility, number of pressures to be reduced, and the time for the action to be effective. However, similar information is not provided for groundwaters. Subsequently, Poland does not indicate the number of water bodies for each measure. There is no aggregated information on how many water bodies, in less than good status, have been linked to the Programme of Measures.

Regarding the costs of measures, a total of PLN 22.7 billion is estimated for Poland.

The planning of measures takes into consideration several aspects, such as Flood Risk Management Plans, Surface Water Restoration Programmes, etc., without explicitly indicating the relative priority of these aspects. The measures are linked with the significant pressures in Vistula and Oder RBDs, and in terms of rivers and groundwaters, in all RBDs.

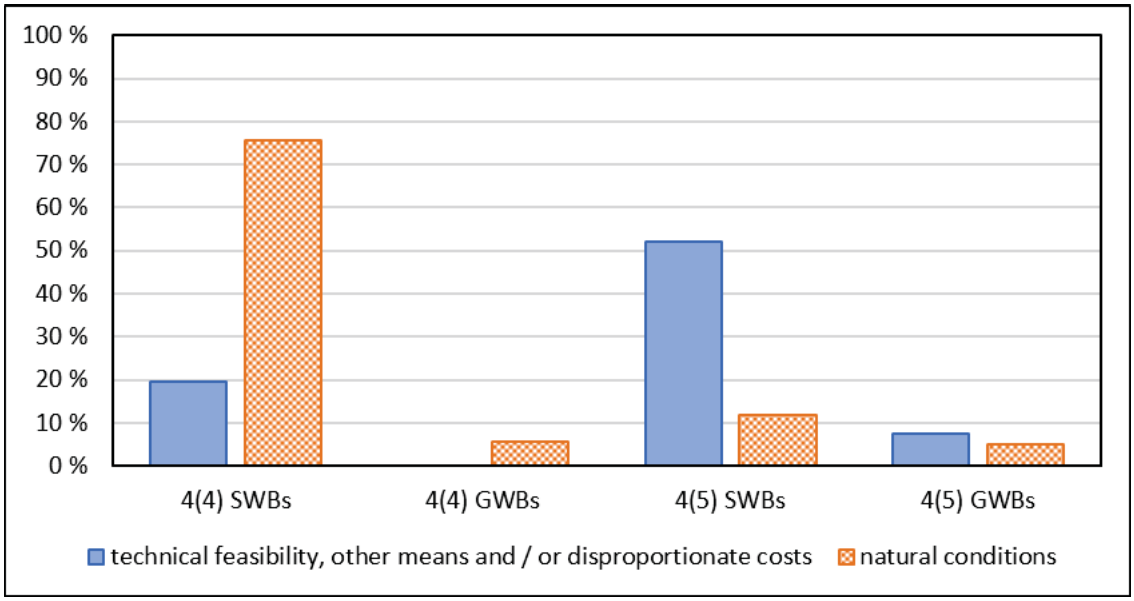
5. Exemptions and economics

5.1 To what extent are exemptions applied in Poland

As the good status has not been achieved in all water bodies by 2015, Poland has applied several exemptions. Figure 10 shows the use of exemptions according to Art. 4(4) and 4(5) and Table 4 shows in more detail the number of exempted groundwater bodies and surface water bodies, per type of exemption applied. However, no aggregated information is provided to distinguish the number or percentage of water bodies exempted for ecological status, chemical status, or quantitative status. Unfortunately, the data provided does not suffice to compare the number or proportion of water bodies exempted compared to the 2nd RBMPs.

For exemptions under Art. 4(4) and 4(5), Poland introduces in its RBMPs a step-by-step approach to support the decision. It is worth noting that the detailed and quite comprehensive justifications for the use of exemptions under Art. 4(4) and 4(5) WFD are introduced in Annex 18 to the RBMPs at water body level and exemptions under Art. 4(7) WFD are introduced in Annex 10 to the RBMPs at project level with indications of all affected water bodies.

Figure 10. The use of exemptions according to Art. 4(4) and 4(5) WFD in surface water bodies (SWBs) and groundwater bodies (GWBs) in Poland.



Source: Data mining of the 3rd RBMPs

Table 4. The use of exemptions in Poland in the 3rd RBMPs.

Article	Groundwater bodies (GWBs)	Surface water bodies (SWBs)
4(4)	0 GWBs (0% of all GWBs) on grounds of technical infeasibility and / or disproportionate costs 10 GWBs (6%) on grounds of natural conditions	825 SWBs (19% of all SWBs) on grounds of technical infeasibility and / or disproportionate costs 3 320 SWBs (76%) on grounds of natural conditions
4(5)	13 GWBs (7%) on grounds of other means and / or disproportionate costs 9 GWBs (5%) on grounds of natural conditions	2 209 SWBs (52%) on grounds of other means and / or disproportionate costs 503 SWBs (12%) on grounds of natural conditions
4(6)	Not applied	Not applied
4(7)	In total 254 investment projects (no aggregated data about the number of affected water bodies)	
GWD 6(3)	Not applied	-

Source: Data mining of the 3rd RBMPs

5.2 Use of economic analysis and water pricing – cost recovery

The largest RBMPs mention or refer to items in the economic analysis which is reported in an elaborate background study, together with the cost recovery rate calculations. However, the RBMPs do not provide a summary on the key data and also remains rather unclear on the progress made in the economic analysis since the 2nd RBMP. There are some concerns that the analysis may not have taken into account the new rules on the water service' tariffication applicable since 2018.

Poland defines a range of water services, such as public water supply, sanitation services, impoundments, and water storage, and also a variety of other water uses. The RBMPs mention future water supply and demand, respectively differentiated over sources and water user sectors, but without any quantitative forecasts. Poland has not evaluated the current investments nor estimated the investment needs in the future. The only available information about water tariffs is that there is a single price for the joint provision of public water supply and sanitation services, differentiated across regions and user sectors, i.e., households and industry. There is no explicit account on whether the water pricing policy provides adequate incentives to use water efficiently.

The RBMPs introduce two cost recovery figures for each of the three broad water user sectors households, agriculture, and industry, one with only financial costs and one also taking environmental costs on board; all figures pertain to the year 2018. However, no information can be found about the methodology. Public water supply and wastewater sanitation is reported as profitable with revenues exceeding financial costs with 5.1%. However, the overall financial cost recovery rate amounts to 19.5% and 100% for agriculture sector and industry, respectively. The RBMPs do not seem to explain which mitigation factors justify the much lower cost recovery for agriculture. It also remains unclear how the reported losses on provisions of water supply and sanitation in some areas in Poland are addressed. The disparity is even more pronounced for the the broader cost recovery rate (i.e. with environmental costs). A total national average cost recovery rate of 97.4% is reported for the public water supply and sanitation, and 82.6% for industry (in 2017), while the corresponding rate for the agricultural sector is only 2.7%, taking into account both environmental costs and unpaid fees for water abstraction. Indeed, the pollution mitigation measures in agriculture are subsidised mainly through the CAP. The Polluter-Pays-Principle is mentioned, but only in the form of a general assurance, that it is applied. The RBMPs do not provide an account whether the broad water user sectors provide an adequate contribution to the recovery of water services'.

6. WFD recommendations

For the preparation of the European Semester 2025, a proposal for a Council recommendation notes that Poland should take action in 2024 and 2025 to "improve policies related to the protection and sustainable use of water resources to ensure the long-term sustainability of sectors that rely on ecosystem services"[47].

Moreover, Poland should:

[47] Recommendation for a COUNCIL RECOMMENDATION on the economic, social, employment, structural and budgetary policies of Poland, dated 19 June 2024: https://commission.europa.eu/document/download/cc8db0cb-8fa3-4dfb-98d5-7751a0f6f5c8_en?filename=com_2024_621_1_en.pdf

1. Address the identified lack of compliance of achieving good status by increasing the level of ambition and reducing the compliance gap as much as possible until the next reporting cycle;
2. 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' 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 to improve the cost-effectiveness analysis and the prioritisation of measures as well as a better estimation of the investments applied as well as the funding needs;
3. Identify and put in place all basic measures and necessary supplementary measures to reduce existing persistent environmental challenges (pressures) preventing the achievement of good status as those pressures will be aggravated by climate change (e.g., pollution concentrates in times of less water availability).

   This implies, for example:

   a) Reduction of nutrient pollution including the setting and achievement of maximum nutrient loads in all river basin districts to achieve the objectives of WFD, MSFD and ND with particular focus on the vulnerability of the Baltic Sea;
   b) Addressing pesticide pollution by reducing their use and phasing out unsustainable practices as well as the emissions of most relevant priority substances and rivers basin specific pollutants (namely polyaromatic hydrocarbons (PAHs), mercury, polybrominated diphenyl ethers (PBDEs), hexabromocyclododecane, heptachlor and heptachlor epoxide, and perfluorooctane sulphonic acid (PFOS));
   c) Further prevention and reduction of point source pollution to address nutrients and priority substances and river specific pollutants e.g., by reviewing existing permits for point source emissions to lower pollutant loads or introduce obligations to temporarily suspend or limit discharges in case of emergencies (like the low flow conditions during the Oder ecological disaster);
   d) Expanding the efforts on nature-based solutions including re-naturalisation and ecosystem restoration which will reduce the hydromorphological pressures on its water bodies (e.g., reducing pressures from agricultural drainage);
   e) Stepping up efforts to improve river continuity, ensuring minimum ecological flows, improve the general hydrological conditions also in cooperation with neighbouring countries;
   f) As considering increased dry periods and the risk of over-abstraction, a wide use of abstraction permits and fees for all water users, monitoring the actual abstracted amounts, and harmonisation of the inconsistent use of exemptions from water fees with the aim to ensure a balance between abstraction and recharge of water bodies in which withdrawals take place, with the aim of good quantitative status of groundwaters and good hydrological conditions of surface waters;
   g) Including a clear provision on periodical review of abstraction and impoundment permits as well as other permits related to hydromorphological changes and describing how this review is implemented in the following RBMPs;

h) Setting specific measures to achieve the additional objectives for all protected areas under relevant Directives and ensuring their link to the WFD implementation.

4. Enhance the consideration of climate change in all RBMPs and / or develop regional drought management plans where droughts are foreseen to causing problems to the economics and society. Although not explicitly required by the Directive, failure to do so will make it increasingly difficult to achieve the Directive's objective and, in some case, even lead to a deterioration of waters where progress has been achieved.

5. Improve further governance and better coordinate between the different administrative levels and authorities dealing with the implementation of the WFD and other related pieces of legislation. This also includes removing obstacles identified in the implementation of measures, such as insufficient administrative capacities and resources.

Moreover, Poland should:

a) Public consultation of the significant water management issues as stipulated in Article 14 WFD;

b) Improving the work on international River Basin Management Plans, especially, for the Oder River Basin to achieve and retain the good status of surface waters and groundwaters;

c) Aspiration to achieve agreement with neighbouring countries to uniform the characterisation of transboundary water bodies;

d) Improving the comparability of status assessment with other EU countries, specifically regarding the assessment of physico-chemical and hydromorphological conditions related to their sensitive biological quality elements.

6. Ensure that the application of sufficiently justified exemptions is regularly reviewed for each water body which cannot meet the objectives of Article 4(1) and ensure that the application of exemptions is regularly reviewed.

7. Further close knowledge gaps and improve data availability, access to data, as well as data quality and comparability by harmonising methods and electronically collected data across river basin districts and marine regions, on monitoring, assessments, projections, economic assessment, etc. and make all data openly available through timely publication in line with the requirements of the Open Data Directive and INSPIRE Directive.

   This implies immediate actions:

   a) Strengthening 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 expert judgment for the classification of ecological status / potential and chemical status;

   b) Developing chemical status monitoring programmes to ensure all relevant priority substances (including mercury) and River Basin Specific Pollutants are identified;

   c) Providing a detailed quantitative assessment of the additional need for measures to address nutrients, pesticides, and pollution from all the sectors in all RBDs;

d) Assessing 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 its measure at water body level.

This also implies actions for the next RBMPs:

e) Assessing the impacts of climate change on the status of the biological and other quality elements at water body level in all RBDs and introduction of possible measures to tackle or mitigate the adverse impact of climate change;

f) Better assessing the achieved and expected effects of the measures in previous cycles providing more details related to pollution from pesticides at water body level;

g) Further develop the methods to assess ecological potential to include the sensitive biological quality elements in the assessment;

h) Assess how the planned measures will close the gaps to good status / potential due to hydromorphological pressures;

i) Improved assessment of the impact of abstraction on both surface water bodies and groundwater bodies;

j) Providing a sound justification for the deterioration in status of waters e.g., the acute drop in the number of water bodies in good chemical status;.

k) Improving the methodology for establishing ecological flow;

l) Clarification of the prioritisation of nature-based solutions;

m) Including territorial waters;

n) Designation of all appropriate Natura 2000 areas associated with groundwaters and linked to Habitats and Birds Directives;

8. Improve the transparency and useability of the RBMPs and the communication in the preparation of the RBMPs.

In particular,

a) Aggregated data of the number of groundwater bodies subject to quantitative monitoring, and number of surface water bodies subject to surveillance and operational monitoring;

b) Aggregated data of the number of water bodies subject to measures and the expected implications of the measures;

c) Clear information of the use of exemptions with thorough justifications according to Articles 4(4), 4(5), 4(6) and 4(7) from achieving the objectives of Art. 4(1): ecological status, chemical status, and quantitative status of surface waters and groundwaters. Furthermore, to better introduce an overview of using exemptions, RBMPs should include aggregated data of water bodies subject to exemptions;

d) A clear description of the methodology of designating heavily modified and artificial water bodies as well as the methodology of defining good ecological potential;

e) A clear summary of the economic analysis and the cost recovery calculations, mentioning key figures as well as the underlying methodology. Report more clearly

on the adequacy of price incentives and of the contributions of the various water user sectors to the costs of water services provision.

9. Improve the reporting of RBMPs to comply with the WFD timetable and maximise the efforts to ensure electronic reporting of WFD data, to facilitate comparisons between implementation cycles and allow for easier monitoring of progress;

SECTION B:

FLOODS DIRECTIVE

7. Flood risk management under floods directive (FD)

The Directive requires each Member State 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, or PFRAs (including the identification of areas of potential significant flood risk, or APSFRs), (b) the preparation of flood hazard and risk maps, or FHRMs, and (c) the establishment of flood risk management plans, or FRMPs.

There are nine Units of Management (UoMs) in Poland, which are the same as the Water Framework Directive's River Basin Districts (RBDs). Fluvial, pluvial, groundwater, sea water, and artificial water bearing infrastructure types of floods are considered as potentially significant sources of flooding in Poland. Poland designated 914 Areas of Potential Significant Flood Risk (APSFRs). The impacts of climate change on flood risk have been considered in Poland for all the UoMs at the time of the second preliminary flood risk assessment. For fluvial floods due to natural exceedance and floods due to damage to flood dikes, a change in the projected high flow Q90 trend in 2021-2050 was assigned. Data were obtained from CHASE-PL project 'Assessment of the consequences of climate change for selected sectors in Poland'. For winter floods due to ice accumulation, forecasts of long-term developments, including climate change, were not carried out due to methodological obstacles. For pluvial floods, an analysis of trends of frequency of precipitation of above 20 and 30 mm was made based on data precipitation data in the selected cities. For sea water floods, a new methodology was developed. The analysis of the frequency of storms occurring at the Polish coast indicated that in recent decades, the frequency of storms has increased.

7.1 Flood hazard and risk maps

Poland is using online map service[48] as well as pdf maps[49] for their FHRMs. FHRMs were prepared at the national level. Maps for floods with low probability (1/500 years), with medium probability (1/100 years) and with high probability (1/10 years) are provided. The maps show flood extent, indicative number of potentially affected inhabitants, type of economic activity, IED and IPPC installations and potentially affected protected areas[50].

As a result of the review and update of the PFRA, additional areas at risk of flooding were identified, for which new FHRMs were developed. For river flooding alone, approximately 14 800 km of rivers were indicated for the development of new FHRMs. For coastal flooding, the updates and development of new FHRMs covered approximately 200 km of coastal areas and river mouths. For floods from damming structures new FHRMs included 26 locations[51]. The new regulation on the development of flood hazard maps and flood risk maps introduced changes to the scenario concerning

[48] Hydroportal: https://isok.gov.pl/hydroportal.html
[49] Maps in pdf format (both FHMs and FRMs) can be accessed directly by the hydroportal service: https://wody.isok.gov.pl/imap_kzgw/?gpmap=gpPDF
[50] Protected areas according to Annex IV(1)(i), (iii) and (v) to Directive 2000/60/EC.
[51] Report on the review and update of the flood hazard maps and flood risk maps version nr. 2.00 („Raport z wykonania przeglądu i aktualizacji map zagrożenia powodziowego i map ryzyka powodziowego" wersja nr. 2.00), Warszawa 2022, https://powodz.gov.pl/pl/mapy

the damage or destruction of a flood embankment[52] establishing that the designation of areas prone to flooding in the event of damage to or destruction of an embankment shall take into account the complete destruction of the embankment, thus taking a more conservative approach.

In terms of changes of contextual information (i.e. the way in which information about the maps is conveyed to the public) since the first FHRMs, overall, a significant change compared to the first FHRMs is that Poland's second FHRMs are available in an online map viewer, rather than as a collection of individual PDF documents. There is a disclaimer addressing the consequences of potential misuse of the maps and the legal responsibility of the publishing authority. INSPIRE services are now mentioned. A short user manual is provided.

In terms of changes in methodologies used to prepare flood hazard maps since the first FHRMs, changes to improve the process of map preparation, publication and reporting concern in particular[53]: 1) updating the input data for the development of the FHRMs; 2) the methodology of hydraulic modelling; 3) the way flood risk areas are determined; 4) the elements of the cartographic version of the FHRMs depicted on the maps.

In terms of changes in methodologies used to prepare flood risk maps, regarding the adverse consequences associated with the flood scenarios, the same elements are mapped as in the first FHRMs.

As regards the consideration of climate change effects in the preparation of flood hazard and risk maps, reference is made to section 3.7 on 'adaptation to climate change'.

7.2 Flood risk management plans

The FRMPs can be downloaded from a government web page[54]. The FRMPs are also available for download on the website of Polish Waters, which provides both links to the plans and additional summary information about their contents and the process of their preparation and adoption[55].

The FRMPs identify three main objectives for both fluvial and coastal floods, eleven sub-objectives for fluvial floods, and six sub-objectives for coastal floods. The second FRMPs describe a review of the sub-objectives set in the first FRMPs to assess their continued relevance. The FRMPs also list eight strategic environmental objectives and refer to an overall objective in Poland's Water Law. One of the strategic environmental objectives calls for the protection of human health and safety. Also, protection of cultural heritage is listed as one of the eight strategic environmental objectives. The FRMPs also cite Poland's Water Law, which calls for reducing the negative impacts of flooding on human life and health, on economic activity, on the environment and on cultural heritage. One of the sub-objectives for both fluvial and coastal floods calls for reducing the vulnerability of communities and facilities to floods. Another sub-objective calls for increasing effectiveness of flood forecasting and warning, improvement of the effectiveness of post-flood analyses and increasing awareness and knowledge and awareness about sources of flood hazard and risk.

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[52] Methodology for preparing flood hazard maps and flood risk maps in the 2nd planning cycle („Metodyka opracowania map zagrożenia powodziowego i map ryzyka powodziowego w II cyklu planistycznym"), Warszawa 2022, https://powodz.gov.pl/pl/mapy

[53] Report on the review and update of the flood hazard maps and flood risk maps version nr. 2.00 („Raport z wykonania przeglądu i aktualizacji map zagrożenia powodziowego i map ryzyka powodziowego" wersja nr. 2.00), p. 92, Warszawa 2022, https://powodz.gov.pl/pl/mapy

[54] https://stoppowodzi.pl/rozporzadzenia-przyjmujace-plany-zarzadzania-ryzykiem-powodziowym/

[55] https://www.wody.gov.pl/nasze-dzialania/plany-zarzadzania-ryzykiem-powodziowym.

The FRMPs present a common catalogue of national measure types and then 'actions' for implementation based on these measure types. Poland reported 2 974 measures to EIONET. Poland identified priorities for all its measures reported to EIONET. For EIONET reporting, there are five categories of measure prioritisation ranging from critical to low, and Poland has reported measures under each of these categories: 694 measures (23 % of all measures) are categorised as critical, 1 486 (50 %) as very high priority, and 534 (18 %) as high. Measures that fall under the moderate to low categories make up 196 (7 %) and 64 (2 %) of the total measures, respectively. The FRMPs provide several methods for the prioritisation of different categories of actions. The FRMPs provide two sets of indicators to monitor the progress of the actions. Annual updates will be published. Poland identified the progress status for all the measures reported to EIONET. The second FRMPs provide an overview of the achievement of indicators for actions implemented under the first FRMPs (see below). The actions are linked to the measure types, which are in turn linked to the sub-objectives. Poland reported in EIONET 105 measures (4 % of the total reported) as 'completed'. A further 194 measures (7 % of the total) are reported as ongoing construction. 225 Measures (8 %) are reported as 'in preparation'. One protection measure in the Oder UoM is reported in on-going maintenance (recurrent e.g. maintenance works). The majority of measures (56 %) are classed as 'abandoned/ interrupted', and these are seen in three UoMs: the Vistula, where 1 439 measures (60 % of the UoM's measures) are reported as abandoned/interrupted; and the Oder and Pregoła, where 40 % of the measures in each UoM are reported as abandoned/interrupted. For prevention measures, 76% are reported as abandoned/interrupted, compared to 59 % of protection measures, 33 % of preparedness measures, and 16 % of recovery and review measures. Among measures not started, 79 % of recovery and review measures are reported as not started, compared to 61 % of preparedness measures, 21 % of protection measures, and only 13 % of prevention measures. Relative to Poland's reporting for the first FRMPs, when only 1 % of measures are reported as completed, the second FRMPs have a small increase in the share of measures that completed, reaching 4 %.

The FRMPs assessed do not explain why a large share of the measures reported to EIONET are classified as 'abandoned/interrupted', however Poland subsequently clarified that there are financial, organisational, legislative and other reasons for this. The second FRMPs for the Vistula and Oder UoMs, in the section devoted to coastal floods, mention that a large proportion of the actions in the first FRMPs had a focus that was not primarily for flood protection[56]. Among these measures, there are actions concerning the construction and reconstruction of port infrastructure and the protection of the coast against erosion and seawater floods. Their implementation would contribute to the reduction and prevention of erosion along the seashore and to increased port security. However, they would not lead to a reduction of the flood hazard areas. Therefore, these types of actions are not included in the second FRMPs.

The FRMPs provide information on the results of the actions undertaken under the first FRMPs. Examples of progress indicators for the Vistula FRMP include the following: for fluvial floods, indicator PA4 – the increase in the length of flood embankments protecting APSFRs – reached 8.1 % of the target value.[57] For coastal floods, indicator PA6 – the increase of the length of seacoast embankments – the actions under the first FRMPs achieved 71.4 % of the target value. The FRMPs state that for some indicators, estimation of the values achieved was difficult – for example for PA11, it was not possible to estimate the number of citizens who received training in flood protection.

[56] Section 4.2, p. 47 of the for the Vistula FRMP; section 4.2, p. 47 for the Oder FRMP.
[57] FRMP for Vistula, p. 44.

The FRMPs provide the total cost of their measures, and Poland indicated the costs of 93 % of the measures reported to EIONET. The FRMPs assessed indicate that the main funding sources are national budget, self-government budgets at various levels (regional and local), and National Fund for Environmental Protection and Water Management. Additional sources identified include EU funding and loans from international financial institutions. Background reports describe cost-benefit analysis (CBA) and multi-criteria analysis (MCA) methods used to assess 'planning scenarios', groups of measures for flood risk areas. The catalogue of measures has measure types for natural water retention in forests, wetlands, agricultural land and urban areas, and the FRMPs assessed include actions for these measure types. Measure types also refer to structural water retention projects. Poland reported to EIONET that the WFD's objectives were considered in all UoMs. The FRMPs for the Vistula and Oder UoMs describe activities undertaken to assess the coherence of actions with the WFD's objectives. The FRMPs cite the Strategic Environmental Assessments (SEAs), which assessed impacts on nature and did not identify 'significant negative impact' on Natura 2000 areas. The plans note that where necessary, the administrative process for actions will include a detailed study of environmental impacts. Poland has reported 174 prevention measures to EIONET. Poland has reported 2 459 protection measures to EIONET, representing 83 % of all measures. Poland reported 161 preparedness measures to EIONET. The FRMPs include actions for restrictions of development and construction bans in areas prone to high risk of flooding.

Governance

The FRMPs refer to international cooperation via international river commissions and their working groups for specific activities, including flood risk. The FRMPs also refer to cooperation under bilateral water agreements with neighbouring Member States and third countries on joint water management.

The public consultation lasted nine months. Among the places where the documents were available, was the main office of the Ministry of Infrastructure[58]. Information on the draft FRMPs (and later, the updated plans) was also provided via a public awareness campaign entitled "Stop the Flood"[59], whose website[60] provided the draft FRMPs and related documents. There was joint consultation of the draft FRMPs and RBMPs.

Consideration of climate change

As regards the consideration of climate change effects in the preparation of flood risk management plans, reference is made to section 3.7 on 'adaptation to climate change'.

Progress identified in the second FRMPs

The second FRMPs present a detailed process for reviewing and revising the sub-objectives set in the first FRMPs. Moreover, three of the second FRMPs present indicators showing progress since the corresponding first FRMPs. In addition, the process of prioritisation of measures is clearly presented in the FRMP and the accompanying methodological report. A description of the measures is provided in all the FRMPs under assessment, including the FRMPs for Pregoła, Nemunas and Elbe (in addition to Vistula and Oder, for which a description was already provided in the first FRMPs). In addition, the methodology for monitoring, in particular the approach for indicators, has been strengthened. Climate

[58] FRMP for Elbe, p. 94; FRMP for Nemunas, p. 92; FRMP for Oder, p. 179; FRMP for Pregoła, p. 87; FRMP for Vistula, p. 410, http://dziennikustaw.gov.pl/.
[59] FRMP for Elbe, p. 95; FRMP for Nemunas, p. 93; FRMP for Oder, p. 180; FRMP for Pregoła, p. 88;FRMP for Vistula, p. 411, http://dziennikustaw.gov.pl/.
[60] Stop Powodzi: www.stoppowodzi.pl

change was included in the process of determination of types of activities of the FRMPs. The second FRMPs describe in more detail how cooperation in international river basins functions.

8. FD recommendations

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

- Consider pluvial flooding in the FHRM;
- Consider the impact of climate change on other sources of flooding in the FHRM, beyond 2030;
- Clearly consider, in the FHRM, the potentially affected protected areas identified in Annex IV(1)(i), (iii) and (v) to Directive 2000/60/EC;
- Consolidate the information sources in the FHRM (including the pdf and geoinformation versions) and improve the user friendliness;
- Include, in the FRMP, the conclusions drawn from the totality of FHRMs;
- Provide, in the FRMP, detail on how the FHRM was used in the choice of objectives and measures;
- Clearly explain, in the FRMPs, how the flood risk “problem areas” relate to the PFRA/APSFRs and to the FHRMs;
- Consider insurance as a measure for adaptation to climate change;
- Better explain, in the FRMP, the use of cost-benefit assessment (CBA) and the methodology behind it;
- Provide, in the FRMP, detail on the comments received during the public consultation and how they were taken into account;
- Consider, in the FHRM, flow velocity or relevant water flow (Poland already does for settlements with over 100 000 inhabitants) and the FRMP flood conveyance routes, as these are relevant to emergency response.