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Second River Basin Management Plans – Member State: Poland

Accompanying the document

REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

on the implementation of the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC)
Second River Basin Management Plans
First Flood Risk Management Plans

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Acronyms and definitions

EQS Directive	Environmental Quality Standards Directive
FD	Floods Directive
Km	Kilometre
km^2	Kilometre squared
KTM	Key Type of Measure
PoM	Programme of Measures
RBD	River Basin District
RBMP	River Basin Management Plan
WFD	Water Framework Directive
WISE	Water Information System for Europe
Annex 0	Member States reported the structured information on the second RBMPs to WISE (Water Information System for Europe). Due to the late availability of the reporting guidance, Member States could include in the reporting an Annex 0, consisting of a short explanatory note identifying what information they were unable to report and the reasons why. This Annex was produced using a template included in the reporting guidance. If Member States reported all the required information, this explanatory note was not necessary.

Foreword

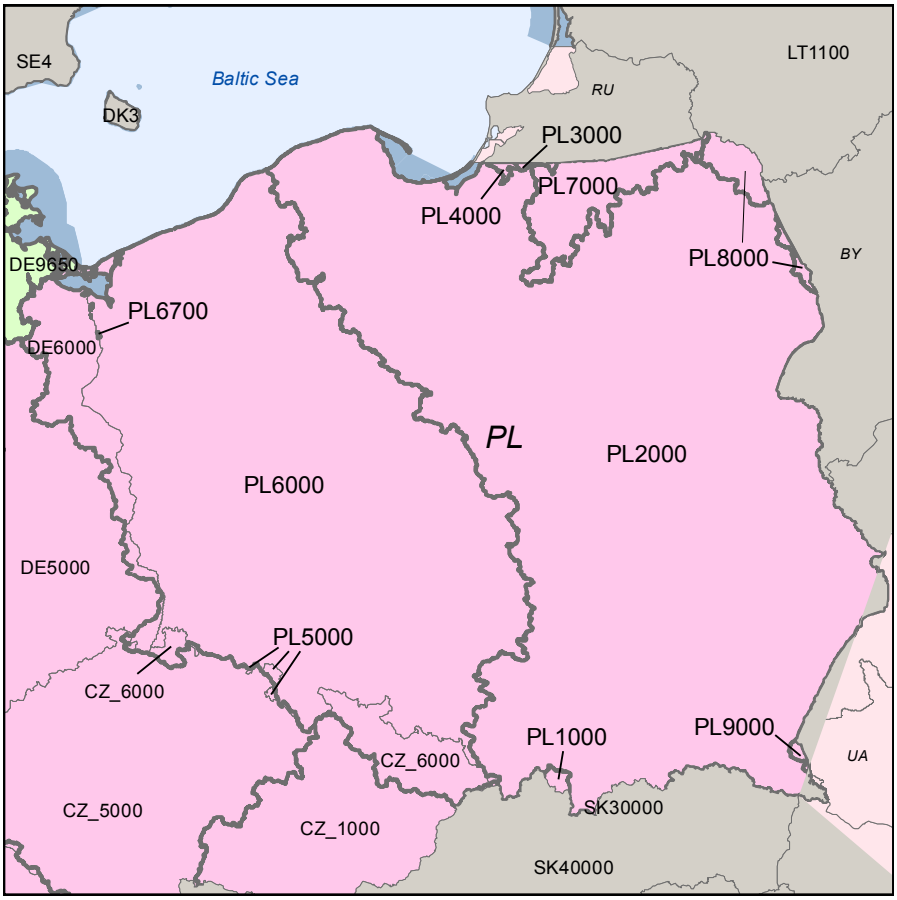
The Water Framework Directive (WFD) (2000/60/EC) requires in its Article 18 that each Member State reports its River Basin Management Plan(s) (RBMPs) to the European Commission. The second RBMPs were due to be adopted by the Member States in December 2015 and reported to the European Commission in March 2016.

This Member State Assessment report was drafted on the basis of information that was reported by Member States through the Water Information System for Europe (WISE) electronic reporting.

The Member State Reports reflect the situation as reported by each Member State to the European Commission in 2016 or 2017 and with reference to RBMP prepared earlier. The situation in the Member States may have changed since then.

General Information

Map A Map of River Basin Districts



Source: WISE, Eurostat (country borders)

International RBDs (within European Union)
International RBDs (outside European Union)
National RBDs (within European Union)
Countries (outside European Union)
Coastal Waters

Poland joined the European Union in 2004.

Poland has a population of 38.1 million[1] and a total land area of 312 679 km². 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 southern part is

[1] European Commission http://europa.eu/about-eu/countries/member-countries/poland/index_en.htm

mountainous. The lowest point in Poland is at 1.8 metres below sea level at Raczki Elblaskie in the Vistula delta. The highest part of the Carpathians is the Tatra Mountains with the highest peak Rysy at 2 499 metres above sea level.

Poland shares its borders with Germany (west), the Czech Republic and Slovak Republic (south), Ukraine, Belarus and Lithuania (east) and the Baltic Sea and the Russian region of Kaliningrad Oblast (north).

Poland has 10 RBDs (Table A). They are all international. The longest Polish rivers are the Vistula and Oder and their RBDs cover almost 97% of the country. Both rivers flow into the Baltic Sea.

Information on areas of the international RBDs, including sharing countries, is provided in Table A. Poland's percentage share of each international RBD is shown in Table B.

Table A Overview of Poland's RBDs

RBD	RBD Name	Size (km^2) (% 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	Swieza	161 (less than 1%)	RU
PL4000	Jarft	210 (less than 1%)	RU
PL5000	Elbe	238 (less than 1%)	CZ, DE, AT
PL6000	Oder	118 365 (app. 38%)	CZ, DE
PL 6700	Ucker	134 (less than 1%)	DE
PL7000	Pregolya	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: RBMPs reported to WISE

Table B Transboundary river basins by category and % share in Poland

Name international river basin	National RBD	Countries sharing RBD	Co-ordination category					
			1		2		3	
			km²	%	km²	%	km²	%
Danube	PL1000	DE, SK, UA, AT, BG, CZ, HR, HU, RO, IT, MD, ME, RS, SI, BA, AL, CH, MK	385	< 0.1				
Elbe	PL5000	CZ, DE, AT	238	0.2				
Oder	PL6000	CZ, DE	118365	86.4				
Dniester / Dnistr/ Nistru	PL9000	UA (MD)			233	0.3		
Nemunas/ Nieman/ Neman/ Nyoman	PL8000	BY, LT (RU)					2515	2.1
Vistula	PL2000	BY, RU, UA, SK					183492	86.8
Bug (Sub--basin Vistula)							19284	48.9

Source: WISE electronic reports

Category 1: International agreement, permanent co-operation body and international RBMP in place.
Category 2: International agreement and permanent co-operation body in place.
Category 3: International agreement in place.
Category 4: No co-operation formalised.

Status of second river basin management plan reporting

A total of 10 Polish RBMPs (Danube, Vistula, Swieza, Jarft, Elbe, Oder, Ucker, Pregolya, Nemunas, Dniester) were published between 8 November 2016 and 6 December 2016. Documents are available from the European Environment Agency EIONET Central Data Repository https://cdr.eionet.europa.eu/.

Key strengths, improvements and weaknesses of the second River Basin Management Plans

The main strengths and shortcomings of the second RBMPs of Poland are as follows:

- **Governance and public consultation**

  - Poland has coordinated WFD implementation with neighbouring Member States, both through international river basin committees and via bilateral agreements. Moreover, Poland has carried out bilateral cooperation with two of its third country neighbours, Belarus and Ukraine. As to cooperation between Poland and Russia, it appears that it has been inactive.

  - A broad range of stakeholder groups were actively involved in the preparation of Poland's RBMPs, including via the establishment of advisory groups.

  - Joint consultation of Poland's RBMPs and FRMPs included common meetings, regional conferences and a national forum.

  - Poland did not adopt and publish the RBMPs in accordance with the timetable in the Water Framework Directive.

- **Characterisation of the RBDs**

  - Not all of the water body types in all water categories had an equivalent intercalibration type[2].

  - In the second cycle Poland reported that reference conditions had been established for all water body types in each category for all biological, hydromorphological and physicochemical quality elements.

  - Further characterisation work has been undertaken since the first RBMPs for characterising groundwaters. Poland also included an assessment of linkages with surface water bodies and terrestrial ecosystems.

  - The significance of pressures was defined in terms of thresholds for the most part and linked to the potential failure of objectives. However, there were still many pressure

[2] Poland highlighted that it is usual that intercalibration types do not correspond directly to national types as it is virtually impossible to cover regional diversity with pan-European typology and as a result, the correspondence is a trade-off.

types where expert judgment was used to define the significance of pressures rather than more numerical methods such as modelling[3].

- 27 pressures were reported not to have been assessed for surface waters. This included abstraction pressures that were not assessed in surface waters even though they were identified as a pressure in the first RBMPs[4].

- Unknown anthropogenic pressures were also reported to be significant in the second cycle and "Unknown impact" type was reported to affect the largest proportion (36%) of surface water bodies in Poland: this implies that the tools used to identify and assess significant pressures and impacts were inadequate[5].

- Poland reported the gaps to be filled for all significant pressures reported at the groundwater and surface water body level.

- All 10 RBDs in Poland reported inventories of emissions, discharges and losses for all Priority Substances except some of the polycyclic aromatic hydrocarbons. Tier 1 of the methodology was implemented for all substances included in the inventories (while the Guidance Document recommends to implement at least Tier 1 + 2 for substances relevant at RBD level). The data quality was assessed as medium.

- **Monitoring, assessment and classification of ecological status**

  - The number of monitoring sites has decreased substantially since the first RBMPs for both operational and surveillance monitoring in all the water categories. Poland subsequently explained that this reduction is due to a better targeting of the monitoring efforts.

  - The number of quality elements monitored in lakes increased, with the inclusion of phytobenthos and benthic invertebrates.

[3] Poland subsequently clarified that the diffuse pressures assessment was based both on expert judgement and additional analysis performed during drafting the programmes of measures. Poland further clarified that the assessment of significance of diffuse pressure was based on calculated or estimated numbers presented as nutrient loads originating from those sources, in relation to thresholds defined in the law.

[4] Poland subsequently explained that in the second planning cycle special attention was paid to keeping a clear link between status assessment, identified pressures and measures planned. Even if surface water abstraction had not been identified as a significant pressure it is controlled in the frame of measures implemented at country level and those measures linked to: drafting or verification of 'conditions for water use in water regions and river catchments', review of water permits, in-depth pressure analysis aimed at hydromorphological modifications and preparation of a national programme for surface water renaturalisation.

[5] Poland subsequently highlighted that information on the methodology for assessment of the unknown pressures and planning of dedicated measures is given in the methodology for the PoM.

- Monitoring of 24 River Basin Specific Pollutants (mainly metals) was carried out in all surface water categories, at least at the minimum recommended frequency. Most of the monitoring results were used for classification of status. The large majority of lakes, however, were classified based on expert judgement and the large majority of rivers were classified based on grouping.

- In general, more water bodies were reported to be classified based on monitoring than those that were directly monitored.

- Classification methods have been developed for all the biological quality elements for all types and water categories, including definition of reference conditions. However, macroalgae and angiosperms were not classified in transitional and coastal waters. Fish were not classified in transitional waters.

  Most of the classification methods for the biological quality elements had been intercalibrated by 2013 and most of the remaining ones were intercalibrated by 2018, after the adoption of the second RBMPs. Some biological methods have not yet been intercalibrated: benthic invertebrates in lakes and fish and benthic invertebrates in transitional waters.

- The classification methods for hydromorphological quality elements were not linked to sensitive biological quality elements.

  Classification methods have been developed for all physicochemical quality elements and were reported to be linked to sensitive biological quality elements. However, the upper part of the ranges for both phosphorus and nitrogen are too high to support the nutrient sensitive biological quality elements and the use of the same ranges of nutrient standards for lakes and rivers raises concerns that these may still represent the old classification system before the WFD. Poland subsequently stated that the classification system for the general physicochemical quality elements changed in 2016, to relate to biological elements classification (macrophytes and phytobenthos).

- River Basin Specific Pollutants were selected based on occurrence in water bodies at risk of failing their objectives due to emissions from wastewater, industry and agriculture. Environmental Quality Standards were set for 25 substances, only for water, and none of them were derived in accordance with Technical Guidance n. 27. All the analytical methods used meet the minimum performance criteria laid down in

Article 4.1 of the Quality Assurance / Quality Control Directive (2009/90/EC) for the strictest standards applied.

- Ecological status was classified for all water bodies, up from 20% in the first RBMPs.
- 70% of all the water bodies were reported in less than good ecological status in the second RBMPs and the level of confidence of the classification was low for most water bodies.

- **Monitoring, assessment and classification of chemical status in surface water bodies**

- Between the two RBMPs there was a very significant decrease in the proportion of water bodies in unknown status, from 92% to 15%. This resulted in an increase in the proportion of water bodies in good status from 3% up to 59% and an increase in proportion of water bodies failing to achieve good status, from 5% to 26%.
- 30% of water bodies are monitored, and grouping and expert judgment are used to classify the status of a significant proportion of non-monitored water bodies. There seem to be some limitations in the assessment of pressures on which the expert judgment is based (in particular, most of the water bodies failing to achieve good status are subject to unknown pressures).
- Territorial waters were neither monitored nor classified. Almost all lake, transitional and coastal water bodies failing to achieve good status were covered by operational monitoring. Rivers failing to achieve good chemical status were less well monitored, ranging from between 14% and 40% across RBDs (the exception being the Elbe RBD, where the only river water body failing was also monitored).
- No surface water body exists in the Ucker RBD, so no monitoring was reported for this RBD. For the nine other RBDs, all priority substances were taken into account in the assessment of status. All substances (including those discharged) were monitored in seven RBD. Two RBDs did not identify any discharged substance and did not monitor any substance, however seems that diffuse pressures were not considered when assessing whether substances were discharged. The monitoring frequencies are sometimes below the recommended minimum frequency, which leads to a low level of confidence for a significant proportion of the water bodies classified.
- No monitoring in biota was performed for status assessment for the second RBMP.

- No trend monitoring was reported to WISE, however it seems that some monitoring in sediment took place. It is however unclear whether all relevant substances were monitored, and what the spatial coverage and temporal resolution were.

- **Monitoring, assessment and classification of quantitative status of groundwater bodies**

  - Not all groundwater bodies are subject to groundwater quantitative monitoring.

  - The groundwater quantitative status has improved. The percentage of the groundwater body area failing good quantitative status decreased (from 13% in the first RBMPs to 4% of the total groundwater body area in the second RBMPs).

  - The level of confidence in status results was reported to be high.

  - Groundwater dependent terrestrial ecosystems were considered in status assessment.

  - There was no consideration of groundwater associated surface waters in two river basin districts, although they were associated with a risk to groundwater status.

- **Monitoring, assessment and classification of chemical status of groundwater bodies**

  - The coverage of groundwater bodies by surveillance monitoring is not complete. The reported data indicate that there is no operational monitoring, although 14 groundwater bodies are at risk. Poland subsequently clarified that operational monitoring is continued in the second RBMP covering 39 groundwater bodies at risk.

  - According to the information provided by Poland, all WFD core parameters are monitored, including ammonium, but have not been reported.

  - The status situation has deteriorated. The groundwater body area failing good status increased from 3.7% to 7.8% (from 11 to 14 groundwater bodies) of the total groundwater body area.

  - According to the information provided by Poland, there is a methodology for trend assessment available, but not yet for the trend reversal assessment.

  - Groundwater dependent terrestrial ecosystems and associated surface waters were related to risk and considered in status assessment and threshold value establishment.

- **Designation of Heavily Modified and Artificial Water Bodies and definition of Good Ecological Potential**

  - For lakes, transitional and coastal water bodies, new methodologies have been developed for the designation of heavily modified water bodies in the second RBMPs. The methodology for designating river heavily modified water bodies has not changed since the first RBMPs, although the information on hydromorphology had been updated. An information gap is that for the majority of river heavily modified water bodies the use for which they were designated is reported as unknown.

  - The methodologies for heavily modified water bodies designation include details on the criteria for the identification of substantial changes in character as well as general guidance (on national level) on the assessment of other means to achieve the benefits of the modifications and significant adverse effects of measures on the use and the wider environment. However, information was not reported on the details of the outcome of the designation tests of significant adverse effects on the use and better environmental options (other means) for individual water bodies.

  - For the definition of good ecological potential, new methodological developments are noted for lakes and coastal/transitional water bodies. Good ecological potential is reported as defined in terms of biology, following a regulation on classification. Concerning mitigation measures, fish ladders are the only measure reported so far for defining good ecological potential, while no description was found of the ecological changes that these mitigation measures are designed to achieve.

- **Environmental objectives and exemptions**

  - Environmental objectives for ecological and chemical status of surface water bodies and chemical and quantitative status of groundwater were reported in all RBDs.

  - Drivers, pressures and pollutants leading to exemptions were reported.

  - Relevant information was lacking in the RBMPs and reported background documents to determine whether exemptions related to disproportional costs and natural conditions could be justified in terms of meeting WFD requirements.

- A significant number of projects was reported by Poland to meet the requirements under Article 4(7). Further information is required to fully assess whether this is sufficient.

- **Programme of Measures**

- Significant progress has been made, particularly in identifying the gap to good status at a water body level, and the level of implementation of measures required to achieve good status by 2027. Clear information on how measures have been prioritised was not available. Poland clarified that the selection was based on efficiency of measures and feasibility of implementation, with details provided in the background document on update of the Programme of Measures (PoM).

- The costs of measures have been identified, and financing was reported as being in place. Significant EU funds have been secured for some RBDs.

- The reported significant pressures were well covered with operational KTMs in place to reduce the pressures in surface waters in all RBDs and for groundwater in the Oder and Vistula.

- Poland mapped a total of 1 410 national basic measures against 15 predefined KTMs and nine nationally derived KTMs. 139 national supplementary measures were mapped against nine predefined KTMs and 17 nationally derived KTMs

- For River Basin Specific Pollutants, information was only reported for two RBDs. For these RBDs no information was provided on the number of surface water bodies failing to be of good status, although information on KTMs was given. Information for groundwater bodies was provided for these RBDs.

- Information was provided on the number of surface waters failing good status due to Priority Substances for seven RBDs, but KTMs to address them were only reported for four RBDs. KTMs were not reported for all the Priority Substances causing failures, but these seem to be covered by other measures tackling pollution.

- Poland provided indicators of the gaps to be filled by the KTMs and indicators for the scale and progress of the implementation of the measures up to 2027.

- **Measures related to abstractions and water scarcity**

  - Water abstraction pressures were not reported to be relevant although a small number of groundwater bodies may be at risk of failing good quantitative status.

  - The Water Exploitation Index + has not been calculated, and no water quantity data were reported to support the European State of the Environment Report in relation to Water Quantity. The RBMPs do not include a water resource allocation and management plan.

  - There is a concession, authorisation and/or permitting regime to control surface and groundwater and a register of surface and groundwater use.

  - Measures on Article 11(3)(c) for sustainable and efficient water are being implemented.

- **Measures related to pollution from agriculture**

  - There is a clear link between agricultural pressures and agricultural measures.

  - A gap assessment for agricultural measures has not been undertaken in all RBDs and management objectives for nutrient pollution have not been set.

  - Safeguard zones have been established for abstractions.

  - Implementation of basic measures under Article 11(3)(h) for the control of diffuse pollution from agriculture at source has been ensured in all RBDs. In the Vistula and Oder RBDs, the rules were applied only in Nitrate Vulnerable Zones. In all other RBDs, the same rules were applied across the whole RBD.

  - Supplementary measures for reducing pollution from agriculture were reported as well as measures to reduce sedimentation from soil erosion and surface runoff.

  - The level of ambition is unclear, as the area covered by measures to achieve environmental objectives was not reported. In general, it is difficult to identify progress with the recommendations that were made[6].

[6] Poland subsequently stated that areas where agriculture significantly affects the status of water have been identified in connection with the implementation of the Nitrates Directive.

- **Measures related to pollution from sectors other than agriculture**

  - Poland has made progress on reducing emissions of non-agricultural pollutants by improving urban waste water treatment.

    As noted above, KTMs were not reported for all individual Priority Substances causing failure, nor for all RBDs, but KTM 15 has been mapped against national measures and is reported to be tackling significant pressures in all RBDs. For the Vistula RBMP, no measures were reported for two priority substances.

  - Only general measures were reported for pollutants causing failure of good chemical status of groundwater (these include an in-depth analysis of the environmental pressures in order to determine the causes of failure to achieve good status, linked to KTM14 - Research, improvement of knowledge base reducing uncertainty)

- **Measures related to hydromorphology**

  - The links between hydromorphological pressures and measures have improved due to the improved reporting on pressures and related KTM in WISE. However, for significant physical alterations and for dams, barriers and locks, the relevant sector or water use was indicated as unknown or obsolete. The significant hydrological and hydromorphological alterations were not assigned to any of the specified sectors according to WISE either (instead the sector was reported as "other').

  - Ecological flows were derived and partly implemented, i.e. for some relevant water bodies, in eight RBDs, but the work is still on-going. The methodological background should be finished within 2018 and legislative changes are expected in the next few years.

  - A programme of flow retention in forests was reported (also reported in the first RBMPs but set to continue until 2020) aimed at flow retention and maintenance of streams and related infrastructure in good condition. Poland also informed that measures related to increasing natural retention are an integral part of the Flood Risk Management Plans.

- **Economic analysis and water pricing policies**

  - The definition of water services was not clear with inconsistent information presented.

- Environmental and resource costs have been calculated although not comprehensively applied to all water services.
- It is not clear whether pricing policies have provided 'adequate incentives' to use water efficiently.

- **Considerations specific to Protected Areas (identification, monitoring, objectives and measures)**
  - Objectives have been set for most relevant types of Protected Areas. However, for nature areas, no information has been provided as to whether the objectives have been met, which implies that the monitoring programme may not provide the necessary data for assessing the status of the Protected Area.
  - The Polish ecological monitoring programme for surface water Protected Areas is fairly comprehensive and includes monitoring sites in relation to the relevant Directives.
  - However, for groundwater Protected Areas, no specific monitoring programme has been reported, although monitoring schemes have been developed in the framework of the national programme for environmental monitoring.
- **Adaptation to drought and climate change**
  - Climate change was considered in all river basin districts and the Common Implementation Strategy guidance document on how to adapt to climate change was used.
  - A climate change check of the PoM has been carried out in the second river basin management plans.
  - Adaptation measures (KTM24) were not reported as operational to address any of the significant pressures.
  - Drought management plans were not reported for Poland. According to the information provided by Poland, plans for action against effects of drought have been prepared by different regional water management boards

Recommendations

- Poland needs to ensure that the preparation of the next cycle of RBMPs is carried out in accordance with the WFD timetable, to ensure the third RBMPs are adopted on time.

- Clear information should be included in national RBMPs on international coordination efforts.

- Poland should continue to improve international cooperation, including coordinated assessments of the technical aspects of the WFD such as ensuring a harmonized approach for status assessment and a coordinated PoM in order to ensure the timely achievement of the WFD objectives.

- Poland has made significant progress in the characterisation of water bodies. However, further work is still needed on the significance of pressures and on clarifying impacts which are currently reported as unknown.

- Further work is required to make the monitoring, assessment and classification of groundwater status fully compliant with the requirements of the Groundwater Directive. The work on aligning national types with those intercalibrated at the EU level should be completed.

- Poland should strengthen monitoring of surface waters by covering all relevant quality elements in all water categories

- An increased level of monitoring should lead to a lower dependence on expert judgment and on grouping for the classification of ecological status/potential, and consequently to an increased confidence in the assessment of ecological status.

- Poland should make sure that the method used for the derivation of Environmental Quality Standards meets the minimum requirements for the protection of freshwater and marine ecosystems from possible adverse effects, as well as of human health.

- Poland should provide a complete assessment of ecological status for all categories of water, including assessments of all relevant quality elements. The methods developed for classification of ecological status for hydromorphological and physicochemical quality elements should be WFD compliant, in particular concerning their links to good status for the relevant biological quality elements.

- Poland should continue to progress in the transfer of the results of intercalibration into all national types, and provide clear information on the class boundaries that are used for the status classification of different national types.

- Confidence in the assessment of status for all water categories should continue to be improved (including territorial waters, whose status should be assessed), and the proportion of unknown status further reduced. In particular, monitoring should be performed in a way that provides sufficient temporal resolution and spatial coverage to classify all water bodies (in combination, if necessary, with robust grouping/extrapolation methods), in the relevant matrix. If a different matrix or reduced frequencies are used, the corresponding explanations should be provided, as required by the Directive.

- Poland should further improve trend monitoring to ensure that all the relevant substances specified in Directive 2008/105/EC are monitored in a way that provides sufficient spatial coverage and temporal resolution.

- On groundwater, a methodology for trend reversal should be in place.

- Further efforts are needed to develop a consistent methodology for the designation of heavily modified water bodies for all relevant water categories based on WFD compliant monitoring. The assessment of significant adverse effects of a comprehensive set of mitigation measures on their use or the wider environment and the lack of significantly better environmental options at water body level needs to be specifically mentioned in the RBMPs. This will ensure the transparency of the designation process. Further efforts are needed to define ecological potential in terms of relevant biological quality elements for all water categories.

- Poland should continue to further improve the methodology and justifications for the assessment and application of Article 4(4) and 4(5) exemptions. The approach for the application of these exemptions needs to be described in more detail and made transparent in the RBMPs. Criteria for the application of Article 4(4) need to be clearly distinguished from the criteria applied for Article 4(5) in relation to technical feasibility and disproportionate costs.

- A significant number of projects was reported to meet all the requirements as outlined in WFD Article 4(7). Poland needs to ensure that the use of exemptions under Article 4(7) is based on a thorough assessment of all the steps as required by the WFD, in particular

an assessment of whether the project is of overriding public interest and whether the benefits to society outweigh the environmental degradation, and the absence of real alternatives that would be a better environmental option. Furthermore, these projects may only be carried out when all practicable measures are taken to mitigate the adverse impact on the status/potential of the water bodies.

- Poland should ensure that KTMs are reported to address identified Priority Substances causing failure of objectives.

- Poland should consider how supplementary measures (designed to be implemented in addition to basic measures) can contribute more effectively to achieving the WFD objectives and quantify the total area to be covered by each measure.

- Poland should complete a comprehensive gap assessment for diffuse pollutant loads from agriculture (nutrients, agri-chemicals, sediment, organic matter) across all waters in all RBDs and link it directly to mitigation measures in the third RBMPs (as per WFD Article 11(3)(h)), to facilitate the achievement of WFD objectives.

- Poland should complete the designation of a sufficient number of Nitrate Vulnerable Zones in the third RBMP cycle and adopt measures to effectively combat nitrate pollution in these zones as required by the Nitrates Directive and Article 11.(3)(a) of the WFD.

- Poland should complete the adoption of measures to improve manure handling and recycling on farms, decrease nutrient discharges (fertiliser and pesticide applications), perform more controls and monitoring, etc, and identify financing sources to fund these measures.

- Poland should continue to review and develop the strategy for the delivery of WFD objectives, in cooperation with the farming community and the authorities in charge of CAP in Poland to ensure the third RBMP is technically feasible and that all relevant policies and instruments (e.g. RDP, CAP Pillar 1, ND, etc.) contribute significantly to RBMPs.

- Poland should provide more information on how it has selected measures, including in relation to combatting pollution by Priority Substances and other chemical pollutants. More consideration should be given to pollutants arriving via the atmosphere, which could be relevant in all RBDs, and to identifying measures specific to individual Groundwater pollutants.

- Poland should implement and report specific measures to address the hydromorphological impacts from agriculture, in line with the requirement of Article 11(3) WFD.

- Ecological flows also need to be derived and implemented during the second cycle.

- Poland should continue prioritising the use of green infrastructure and/or natural water retention measures that provide a range of environmental (improvements in water quality, flood protection, habitat conservation etc.), social and economic benefits which can be in many cases more cost-effective than grey infrastructure.

- Poland should apply cost recovery for water use activities having a significant impact on water bodies or justify any exemptions using Article 9(4). Poland should continue to transparently present how financial, environmental and resource costs have been calculated and how the contribution of the different users is ensured. It should also continue to transparently present the water-pricing policy and provide a transparent overview of estimated investments and investment needs.

- Poland has reported additional objectives only for surface waters Protected Areas related to Birds and Habitats Directives. Therefore, Poland should work on the additional objectives for groundwater related Protected Areas. Finally, Poland should also ensure that all relevant Protected Areas are properly monitored during the second RBMPs.

- Poland should consider ensuring that all its areas susceptible to drought are covered with appropriate drought management plans and measures.

Topic 1 Governance and public participation

1.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

1.1.1 Administrative arrangements – RBDs

Poland has 10 RBDs, and all are international. The longest Polish rivers are the Vistula and Oder; their RBDs cover almost 97% of the country.

1.1.2 Administrative arrangements – competent authorities

Poland has reported a broad range of Competent Authorities, a number of which have roles in enforcement of regulations and implementation of measures. The following national ministries are identified[7]:

- The Ministry of Environment has main roles in enforcement of regulations, implementation of measures and coordination of implementation;
- The Ministry of Agriculture and Rural Development and the Ministry of Maritime Economy and Inland Navigation have main roles in enforcement of regulations and implementation of measures;
- The Ministry of Development has a main role in the enforcement of regulations.

National environmental and health authorities are identified as Competent Authorities:

- The General Director for Environmental Protection has main roles in enforcement of regulations and the implementation of measures.
- The Chief Inspector of Environmental Protection has main roles in monitoring and assessment of status of groundwater and surface water, along with the enforcement of regulations and the implementation of measures.
- The Chief Sanitary Inspectorate has main roles in enforcement of regulations and the implementation of measures.

Authorities for water management and maritime issues are identified:

[7] This section presents information reported for the RBMP. Poland passed a new Water Law in July 2017 that may change the set of Competent Authorities, among other elements.

- The National Water Management Authority has main roles in enforcement of regulations, pressure and impact analysis, economic analysis, preparation of the RBMPs and PoM, public participation, implementation of measures, coordination of implementation and reporting to the European Commission.

- The Directors of the Regional Water Management Boards (seven are listed) each have main roles in enforcement of regulations, pressure and impact analysis, economic analysis, public participation and implementation of measures.

- The Directors of Amelioration and Water Structures Authorities (formerly, Directors of the Authorities for Land Improvement and Water Facilities) have main roles in enforcement of regulations and implementation of measures.

- The Directors of Inland Waters Navigation Offices (eight are listed) have main roles in enforcement of regulations.

- The Directors of Maritime Offices (three are listed) have main roles in enforcement of regulations and in implementation of measures (except for the Director of the Maritime Office in Slupsk, who does not have a main role in the enforcement of regulations).

Competent Authorities at regional level are identified:

- The Marshals of the Voivodships, the Voivodes and the Governors of the districts all have main roles in enforcement of regulations and implementation of measures.

- The Voivodship Inspectorates for Environment Protection and Voivodship Sanitary Inspectorates have main roles in enforcement of regulations and the implementation of measures.

Finally, the the municipalities also have main roles in the implementation of measures.

1.1.3 RBMPs – structure and Strategic Environmental Assessment

Poland's RBMPs do not have sub-plans.

Poland carried out Strategic Environmental Assessments for all of its RBMPs.

1.1.4 Public consultation

Public consultation was carried out via direct invitation, telephone surveys and the Internet. For all 10 RBMPs, consultation documents were available for the required six months[8]; documents were available for download, paper copies were available in municipal buildings and paper copies were distributed at exhibitions.

For all 10 RBDs, the following stakeholder groups were actively involved in the development of the RBMPs: agriculture/farmers, consumer groups, energy/hydropower, fisheries/aquaculture, industry, local/regional authorities, navigation/ports, NGOs/nature protection and water supply and sanitation. Active involvement took place via the establishment of advisory groups and their involvement in drafting the RBMPs.

For all 10 RBDs, consultation resulted in the following impacts: addition of new information, adjustment of specific measures, commitment to action in the next RBMPs and commitment to further research.

1.1.5 Integration with the Floods Directive and the Marine Strategy Framework Directive

Poland carried out joint consultations with the Flood Risk Management Plans under the Floods Directive[9]; joint consultations were not carried out for the Marine Strategy Framework Directive[10].

Poland informed that in the joint consultation of RBMPs and FRMPs, there were common communication and consultation mechanisms dedicated to both types of plans, including: consultation meetings, regional conferences and a National Water Forum. A common slogan, '*Niezawodne plany*' ('Reliable Plans'), and logo were used. The websites for the RBMPs and FRMPs were linked and in public surveys, questions on both plans were asked.

1.1.6 International coordination

All 10 of Poland's RBDs are part of international RBDs. This includes Poland's sections of the Danube, Elbe and Oder RBDs: for these three international RBDs, an international agreement, permanent cooperation body and international RBMP are in place (designated as category one

[8] Poland noted that public consultations on the RBMPs took place from November 2014 to June 2015, a period of seven months.

[9] Directive 2007/60/EC on the assessment and management of flood risks entered into force on 26 November 2007 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32007L0060

[10] Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0056

cooperation). Poland also reports that explicit links have been made with national RBMPs within the international RBMPs for the Elbe and Oder and has explicitly informed the Commission that an international RBMP and PoM were prepared commonly with Germany and the Czech republic for the Oder RBD.

Poland has informed the Commission that there has not been an international RBMP and PoM prepared for the Vistula RBD due to the characterisation and location of this RBD. Poland has in this context informed that nearly 90% of the RBD is located on Poland's territory and that the RBD is shared with Slovakia. Under the framework of the bilateral commission with Slovakia (see below), working groups have shared information on the characteristics of water bodies (e.g. typology, status assessment, identification of HMWBs). Joint monitoring is carried out and there is coordination of measures (Poland's Vistula RBMP notes that recently agreed transboundary cooperation between Slovakia and Poland includes joint monitoring, data harmonisation, data exchange and joint projects). In addition, Poland has signed a range of bilateral agreements with neighbouring Member States and third countries. These include the following[11]:

- Poland-Belarus: Agreement on Cooperation between the Hydrometeorology Department of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the Institute of Hydrometeorology and Water Resources of Poland, 2003;

- Poland-Belarus: Agreement between the Government of the Republic of Poland the Government of the Republic of Belarus on cooperation in the field of environmental protection, 2009;

- Poland-Russia: Agreement on cooperation in the north-eastern provinces of the Republic of Poland and Kaliningrad oblast (region) of the Russian federation (only relating to environmental protection and monitoring of transboundary coastal waters), 1992;

- Poland-Slovakia: Agreement between the Government of Slovakia and the Government of Poland on the Management of Transboundary Waters, 1997 (implemented through the Polish-Slovakian Transboundary Waters Commission);

[11] According to the Vistula RBMP and the 2012 Pressures & Measures study available at: http://ec.europa.eu/environment/archives/water/implrep2007/pdf/Governance-Transboundary%20Fact%20Sheets.pdf)

- Poland-Ukraine: Agreement between the Government of Ukraine and the Government of Poland on Cooperation in the Field of Water Management in Frontier Waters, 1996 (a Ukrainian-Polish Commission works under this Agreement);

- Poland-Ukraine: Agreement on Cooperation between the State Department of Ecology and Natural Resources in the Lviv region, Ukraine, and the Podkarpatskiy Provincial Water Inspectorate for Environmental Protection, 2004;

- Poland-Ukraine: Agreement on Cooperation between the Bug Basin Water Resources Management Authority of Ukraine and the Regional Water Management Authority of Warsaw in Poland, 2006, and;

- Poland-Former USSR: Agreement between the Government of the Polish People's Republic and the Government of the Union of Soviet Socialist Republics Concerning the Use of Water Resources in Frontier Waters, 1964.

Working groups were set up as part of the Polish-Slovak Commission for Border Waters covering:

- flood control, regulation of border watercourses, water supply, land rehabilitation, planning and hydrogeology;

- hydrology and flood protection in border waters;

- protection of border waters against pollution, and;

- implementation of tasks under the WFD.

Recently agreed transboundary actions between Slovakia and Poland include joint monitoring, data harmonisation, data exchange and experience exchange, and joint projects.

Poland and Ukraine have set up the following working groups covering:

- planning on transboundary waters;

- protection of border waters against pollution;

- flood control regulation and drainage; combating extraordinary pollution, and;

- hydrometeorology and hydrogeology.

Poland and Ukraine have established a coordinated monitoring programme. Coordination takes place with regard to bilaterally agreed indicators and information exchange as a part of the meetings of the Polish-Ukrainian transboundary water commission.

The RBMP notes that cooperation with Belarus on border waters is carried out via the Polish-Belarusian Subcommittee on Cross-Border Co-operation, under the Polish-Belarusian Intergovernmental Coordination Committee for in Cross-Border Cooperation.

Cooperation with the Russian Federation on water management is carried out under the 1964 agreement between Poland the USSR; however, it appears that joint activities have currently been suspended.

Further information is included in the reports on international coordination on the Water Framework Directive.

1.2 Main changes in implementation and compliance since the first RBMPs

Poland has strengthened international coordination on water management, including with Slovakia (in the Vistula RBD).

1.3 Progress with Commission recommendations

There were no recommendations on this topic.

Topic 2 Characterisation of the River Basin District

2.1 Assessment of implementation and compliance with WFD requirements in second cycle

2.1.1 Delineation of water bodies and designation of heavily modified and artificial water bodies

There was only a change in the number of lake water bodies between the two cycles in Poland as a whole - an increase of six from 1,038 in the first RBMP to 1,044 in the second RBMP (Table 2.1). Three of these were in the Vistula RBD, (with an area exceeding 50 hectares), which were not included in the first RBMPs (PLLW 20061 Likieckie, PLLW 20624 Kuchnia, PLLW 20775 Motława Wielka)[12]. The same number of coastal, river and transitional water bodies were reported for both cycles of RBMPs. The reasons and consequences of the re-delineation were not directly described in the RBMPs. There was an apparent increase in the number of groundwater bodies in Poland from 161 in the first RBMPs to 178 (172)[13] in the second RBMPs (Table 2.2).

There was a 25% reduction in the number of heavily modified water bodies in Poland for the second RBMPs compared to the first (Figure 2.1). The largest decrease was in heavily modified river water bodies in two RBDs: in the first cycle there were 904 in the Vistula RBD and 594 in the Oder RBD which were reduced to 491 and 559, respectively, in the second cycle. This was accompanied by an almost equivalent number of identified natural river bodies between the two RBMPs[14]. In contrast there was an increase in the number of heavily modified lake water bodies between the two RBMPs from 75 in the first cycle to 123 in the second cycle[15].

Table 2.3 shows the differences in size distribution of surface water bodies in Poland between the second and first RBMPs. There were no significant changes. The minimum size criteria reported were 10 km^2 catchment area for rivers and 0.5 km^2 surface area for lakes, which is system B in Annex II of the WFD.

[12] Poland subsequently clarified that there were six new lake water bodies established in the 2nd RBMP, which were lakes bigger than 50 ha, important for water management, mistakenly missed in the 1st RBMPs.

[13] Poland clarified that the real number of groundwater bodies is 172. A few of them spread over more than one RBD and were there reported as separate water bodies within each RBD, leading to double counting, which explains the bigger number in WISE.

[14] Poland subsequently confirmed that the number of riverine HMWBs decreased and the number of natural river water bodies grew proportionally. They highlighted that this was because of more detailed analysis and better availability of monitoring data in the 2nd cycle.

[15] Poland clarified that for heavily modified lakes there was an update of methodology for identification of them which resulted in higher number of such water bodies in the 2nd RBMPs.

Table 2.4 summarises the information provided by Poland on how water bodies have evolved between the two RBMPs. The changes noted above do not appear to be identified which may be an error in the reporting.

Table 2.1 Number and area/length of delineated surface water bodies in Poland for the secondand first RBMPs

Year	RBD	Lakes		Rivers		Transitional waters		Coastal waters	
		Number of water bodies	Total area (km^2) of water bodies	Number of water bodies	Total length of water body (km)	Number of water bodies	Total area (km^2) of water bodies	Number of water bodies	Total area (km^2) of water bodies
2016	PL1000			11	226				
2016	PL2000	484	1 153	2 660	65 485	5	1 475	6	316
2016	PL3000	1	1	4	65				
2016	PL4000			6	107				
2016	PL5000			8	147				
2016	PL6000	422	793	1 735	41 577	4	462	4	350
2016	PL7000	101	281	120	2 940				
2016	PL8000	36	70	39	833				
2016	PL9000			3	130				
2016	*Total*	*1 044*	*2 297*	*4 586*	*111 510*	*9*	*1 937*	*10*	*666*
2010	PL1000			11	226				
2010	PL2000	481	1 150	2 660	65 473	5	1 473	6	316
2010	PL3000	1	1	4	65				
2010	PL4000			6	107				
2010	PL5000			8	147				
2010	PL6000	420	792	1 735	41 565	4	462	4	350
2010	PL7000	101	281	120	2 938				
2010	PL8000	35	70	39	834				
2010	PL9000			3	130				
2010	*Total*	*1 038*	*2 293*	*4 586*	*111 483*	*9*	*1 936*	*10*	*666*

Source: WISE electronic reports.

Table 2.2 Number and area of delineated groundwater bodies in Poland for the secondand first RBMPs

Year	RBD	Number	Area (km^2)		
			Minimum	Maximum	Average
2016	PL1000	3	0.71	360.16	128.49
2016	PL2000	94	31.36	9 396.67	1 946.72
2016	PL3000	1	161.6	161.6	161.6
2016	PL4000	1	210.34	210.34	210.34
2016	PL5000	7	0.29	92.76	34.05
2016	PL6000	66	23.67	4 947.88	1 783.34
2016	PL6700	1	14.69	14.69	14.69
2016	PL7000	2	1 804.53	5 723.66	3 764.09
2016	PL8000	2	504.8	2,008.85	1,256.82
2016	PL9000	1	232.98	232.98	232.98
2016	*Total*	*178 (172*[16]			
2010	PL1000	2	24.59	359.66	192.12
2010	PL2000	89	31.02	8 933.04	2 049.42
2010	PL3000				
2010	PL4000				
2010	PL5000	1	214.15	214.15	214.15
2010	PL6000	63	42.24	5 271.97	1 873.88
2010	PL6700	3	1 152.23	6 089.30	2 805.93
2010	PL7000	2	505.61	1 965.23	1 235.42
2010	PL8000	1	233.06	233.06	233.06
2010	*Total*	*161*	*24.59*	*8 933.04*	*1 938.96*

[16] Poland clarified that the real number of groundwater bodies is 172. A few of them spread over more than one RBD and were there reported as separate water bodies within each RBD, leading to double counting, which explains the bigger number in WISE.

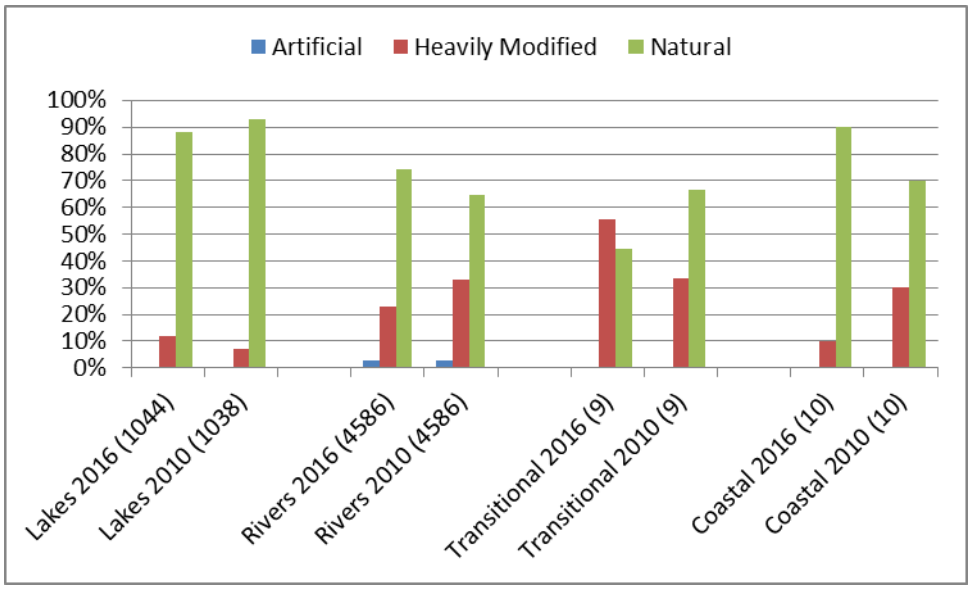
Source: WISE electronic reports. Values in brackets provided by Poland as value from WISE is number of subunits.

Table 2.3 Size distribution of surface water bodies in Poland in the second and first RBMPs

Year	RBD	Lake area (km^2)			River length (km)			Transitional (km^2)			Coastal (km^2)		
		Min	Max	Average	Min	Max	Average	Min	Max	Average	Min	Max	Average
2016	PL1000				1.29	47.32	20.58						
2016	PL2000	0.31	102.43	2.38	0.15	234.41	24.62	64.33	711.21	295.06	0.12	141.17	52.74
2016	PL3000	0.81	0.81	0.81	3.23	40.31	16.2						
2016	PL4000				2.65	65.27	17.78						
2016	PL5000				5.19	34.33	18.32						
2016	PL6000	0.35	54.18	1.88	0.43	256.05	23.96	2.39	406.95	115.46	38.81	153.67	87.48
2016	PL6700												
2016	PL7000	0.34	29.04	2.78	1.24	174.58	24.5						
2016	PL8000	0.49	21.69	1.95	0.21	81.82	21.37						
2016	PL9000				11.71	93.79	43.23						
2010	PL1000				1.29	47.29	20.57						
2010	PL2000	0.31	102.36	2.39	0.15	234.24	24.61	64.24	710.28	294.66	0.12	141	52.68
2010	PL3000	0.81	0.81	0.81	3.23	40.28	16.19						
2010	PL4000				2.65	65.22	17.77						
2010	PL5000				5.19	34.32	18.32						
2010	PL6000	0.35	54.22	1.88	0.43	255.98	23.96	2.39	407.28	115.55	38.78	153.67	87.47
2010	PL6700	0.34	29.02	2.78	1.24	174.55	24.48						
2010	PL7000	0.49	21.7	1.99	0.21	81.8	21.37						
2010	PL8000				11.72	93.83	43.24						

Source: WISE electronic reports

Figure 2.1 Proportion of surface water bodies in Poland designated as artificial, heavily modified or natural for the second and first RBMPs. Note that the numbers in parenthesis are the numbers of water bodies in each water category



Source: WISE electronic reports.

Table 2.4 Type of change in delineation of groundwater and surface water bodies in Poland between the second and first RBMPs

Type of water body change for second RBMPs	Groundwater	Rivers	Lakes	Transitional	Coastal
Aggregation					
Splitting					
Aggregation and splitting					
Extended area					
Creation	178 (172)	1	6		
Deletion	161	1			
Change in code					
No change		4585	1038	9	10
Total water bodies before deletion	339	4587	1044	9	10
Delineated for second RBMPs (after deletion from first RBMPs)	178 (172)	4586	1044	9	10

Source: WISE electronic reports. Values in brackets were provided by Poland as explained above.

Poland reported 147 transboundary surface water bodies in eight of the ten RBDs; the most (67) were in the Oder RBD[17]. Transboundary coastal lake and transitional water bodies were also reported. No transboundary groundwater bodies were reported.

2.1.2 Typology of surface water bodies

Table ***2.5*** shows the number of surface water body types at RBD level in Poland for the first and second RBMPs. 25 river types were reported for Poland in the second cycle; one type was common to six RBDs and five types to four RBDs. Three coastal, four transitional and thirteen lake types were reported. There were only small changes in the number of types reported for each water category in each RBD between the two RBMPs. All differences were for lakes, where there was a decrease of two types in the Oder RBD, a decrease of one in the Pregolya RBD and an increase of one in the Nemunas RBD.

Table 2.5 Number of surface water body types at RBD level in Poland for the first and second RBMPs

RBD	Rivers		Lakes		Transitional		Coastal	
	2010	2016	2010	2016	2010	2016	2010	2016
PL1000	2	2	0	0	0	0	0	0
PL2000	24	24	13	13	4	4	3	3
PL3000	1	1	1	1	0	0	0	0
PL4000	1	1	0	0	0	0	0	0
PL5000	2	2	0	0	0	0	0	0
PL6000	21	21	9	7	2	2	2	2
PL6700	0		0		0		0	
PL7000	5	5	5	4	0	0	0	0
PL8000	6	6	3	4	0	0	0	0
PL9000	1	1	0	0	0	0	0	0
TOTAL	25	25	13	13	4	4	3	3

Source: WISE electronic reports

Note that the total is not the sum of the types in each RBD as some types are shared by RBDs

It was stated in the RBMP that in Poland, surface water types were determined based on system A supplemented with selected parameters of system B. It was stated in the RBMP for Vistula that reference conditions for benthic invertebrates were under development. Other biological parameters were reported against other types of water bodies. However, it appears

[17] Poland subsequently highlighted that the coordination of characteristics of water bodies was provided by the Oder Commission (PL/DE/CZ).

that not every biological parameter was considered for each water type e.g. fish were not considered for type 26 for rivers, macrophytes were only considered for types: 4, 5, 6, 7, 12, 17, 18, 24; phytobenthos for types 4, 5, 17, 18, 19, 20, 24, 25 etc. In terms of lake water bodies, transitional water bodies and coastal water bodies there was no detailed information regarding the types and biological parameters considered but all required biological parameters were listed.

All national lake types were intercalibrated against three common intercalibration types.

10 lake types also had two equivalent intercalibration types. This seems to be a reporting error. 14 national river types were intercalibrated against four common intercalibration types. However, four river types were reported to have two different intercalibration types. The other national river types did not have equivalent common intercalibration types: this equates to 37% of river water bodies without an equivalent intercalibration type[18]. The translation of intercalibration types to non-calibrated national types is therefore an important aspect for consideration. Only one of the four transitional water types had equivalent intercalibration types equating to three out of the total nine transitional water bodies. All coastal water body types had equivalent intercalibration types though one type had two equivalent intercalibration types: this could again be a reporting error.

No information was found in the RBMPs on whether the typology was coordinated with Member States[19]. A typology background document was provided which was dated 2004. However, it was indicated in the background documents[20] (there are three reports published, each for a separate phase) that the typology of member state sharing borders was considered and researched as there is a short section written about some of the Member States. There was more information on Germany (sharing Oder RBD) and its similarities to the Polish system (ecoregions considered, similar to Poland, system A used with some aspects of system B).

[18] Poland highlighted that it is usual that intercalibration types do not correspond directly to national types as it is virtually impossible to cover regional diversity with pan-European typology and as a result, the correspondence is a trade-off.

[19] Poland subsequently highlighted that in the frame of bilateral PL-CZ Commission on Transboundary Waters, a working group 'WFD' acts. Poland stated that the group shares information on typology. Also in the frame of bilateral PL-DE Commission on Transboundary Waters working group W2 acts and shares information on water typology.

[20] http://cdr.eionet.europa.eu/pl/eu/wfd2016/documents/national/envwbtrxw/ - link to a report on Typology: 13Typologia.zip

2.1.3 Establishment of reference conditions for surface water bodies

Table 2.6 shows the percentage of surface water body types in Poland with reference conditions established for the first and second RBMPs. In the second cycle Poland reported that reference conditions had been established for all water body types in each category for all biological, hydromorphological and physicochemical quality elements. In the first cycle, by comparison, only 8 out of 26 river types had a reference condition established, and only preliminary reference conditions were determined for the remainder. Therefore there was a significant improvement in the establishment of reference conditions for surface water bodies between the two RBMPs.

Table 2.6 Percentage of surface water body types in Poland with reference conditions established for all, some and none of the biological, hydromorphological and physicochemical quality elements. Numbers in parenthesis are the number of types in each category

Water category	Water types	Biological quality elements	Hydromorphological quality elements	Physicochemical quality elements
Lakes (13)	All	100%	100%	100%
	Some			
	None			
Rivers (25)	All	100%	100%	100%
	Some			
	None			
Transitional (4)	All	100%	100%	100%
	Some			
	None			
Coastal (3)	All	100%	100%	100%
	Some			
	None			

Source: WISE electronic reports

No information was found in the RBMPs in terms of coordination of the identification of type-specific reference conditions with other Member States or non-European Union countries. A typology background document was provided which was dated 2004. No new information has been reported.

2.1.4 Characteristics of groundwater bodies

All RBDs with surface water bodies (9) had reported links with groundwater bodies, and all 10 RBDs had groundwater bodies with links to terrestrial ecosystems. The characteristics of the geological formation and layering of groundwater bodies were also reported.

2.1.5 Significant pressures on water bodies

In the second cycle Poland identified 13 defined significant pressures on surface waters and also unknown and historical pressures and pressures from tourism and recreation. No abstraction pressures were reported[21]. Diffuse pollution from discharges not connected to sewerage network were reported in six RBDs, diffuse agricultural and atmospheric deposition pressures in five RBDs and point source pressures from urban waste water in four RBDs. 'Hydromorphological alteration - Other' was the most reported significant pressure on coastal and transitional waters in Poland in the second cycle: significant diffuse agricultural pressures were also reported for coastal waters but not for transitional waters (Figure 2.2).

Diffuse agricultural pressures affected the largest proportion of lakes (62%) in Poland but affected only 8% of river water bodies. The most significant pressure on rivers (50% of river water bodies) was unknown anthropogenic pressures.

The comparison of pressures between the two RBMPs may have been confounded by changes in delineation of water bodies and also changes in definition of pressures. There were only minor changes in the delineation of surface water bodies in Poland between the two RBMPs. There were, however, some noticeable differences between the pressure types and extent of pressures between the two RBMPs (Figure 2.3). The proportion of water bodies affected by diffuse agriculture also increased for the second RBMPs: 2% of lakes in the first cycle, 62% in the second cycle[22]; 3% of rivers in in the first cycle, 8% in the second cycle. Abstraction pressures were reported to affect 12% of surface water bodies in 2010 but were not reported at all in the second cycle. Unknown anthropogenic pressures were also reported to be significant in the second cycle[23].

[21] Poland subsequently clarified that even if surface water abstraction has not been identified as a significant pressure it is controlled in the frame of measures implemented at national level.

[22] Poland highlighted that the higher number of lakes under pressure from agriculture is a result of new methodology used for pressure identification: nitrogen and phosphorus loads were calculated as those produced in a whole catchment of the lake and a 1000-metre buffer around the lake, with morphological and hydrographic variability of the lake taken into account. Poland stated that in the 1st cycle mainly lakes located on nitrate vulnerable zones were reported as being under pressure from agriculture.

[23] Poland subsequently stated that "Anthropogenic pressure – unknown" was reported when identification of pressure was not possible, which included all those water bodies with status assessed upon expert judgement

27 pressures were reported to not have been included for surface waters in the second cycle including abstractions and industrial point sources[24]. No information was reported in the RBMP on why the pressures reported to WISE were not considered at the risk assessment stage.

7 different pressures types were reported to be significant for groundwater in the second cycle. The most significant in terms of affected water bodies was diffuse pollution from mining (8% of groundwater bodies) followed by alteration of groundwater level (7%) (Figure 2.3).

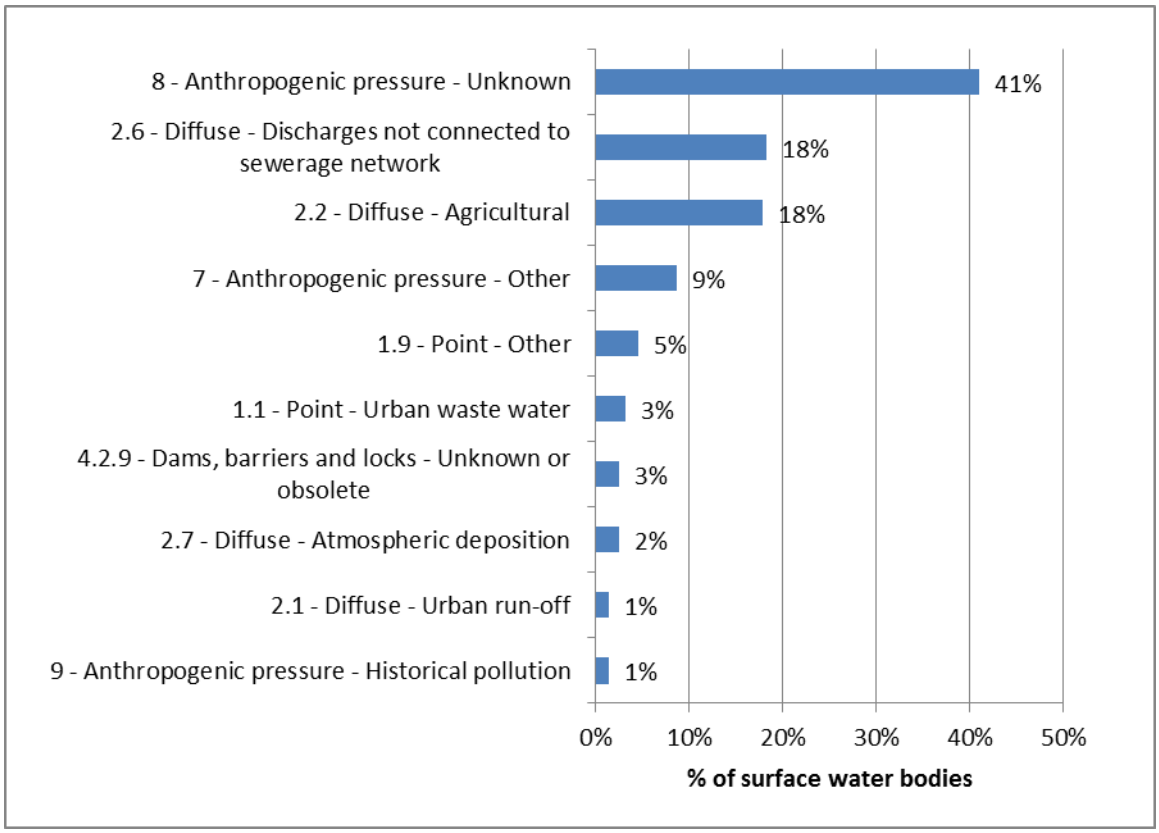
There was a significant increase in the number of delineated groundwater bodies between the two RBMPs (from 161 to 172). This increase in numbers of water bodies does not explain the large differences between the type and extent of pressures reported for groundwater for the two RBMPs. In 2010, abstractions for public water supply were affecting 92% of groundwater bodies; in the second cycle none were reported to be affected[25]. Diffuse mining pressures were reported to be most significant in the second cycle but had not been in 2010.

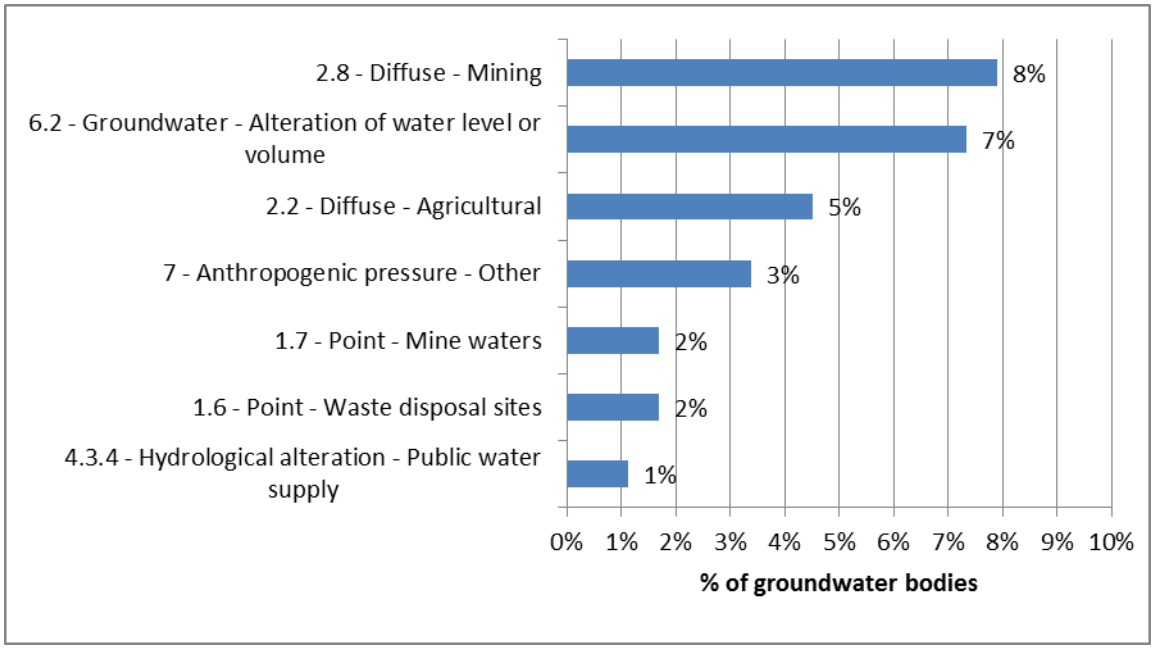
and which reliable assessment of pressure impact on water status was impossible to be done for, were reported as water bodies with unknown pressure. Poland also stated that water bodies assessed based on monitoring results but with no significant wastewater discharge from industry or communal WWTPs in its catchment were reported as water bodies with unknown pressure as well. Poland indicated that for such water bodies implementation of an approach aiming at confirmation if the identified pressure is significant or not and if it has impact on water status was planned in the PoM.

[24] Poland subsequently highlighted that pressures from industry sector were reported mainly as 'Point - Urban waste water', 'Diffuse – Mining' (because of mining industry) and 'Point – Other'. A large number of measures targeting wastewater management (i.e. construction, modernisation, renovation, development of WWTPs) implemented in the frame of the National Municipal Wastewater Treatment Programme target, at the same time, point-pressures from industry.

[25] Poland subsequently stated that in the frame of standard procedure defined in the regulation of the Minister of Environment of 6.11.2008 r. information on registered abstraction of groundwaters (annual sum and average daily abstraction) is gathered. They also highlighted that in 2011 information on scale of abstraction was collected from 18 731 groundwater intakes (together summed up to 1 584,7 mln m^3).

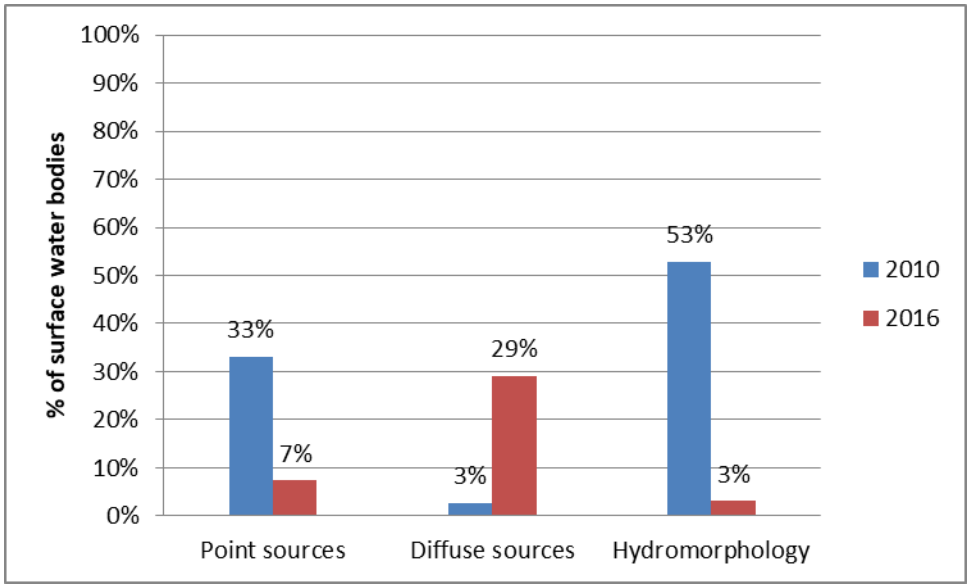
Figure 2.2 The most significant pressures on surface water bodies and groundwater bodies in Poland for the second RBMPs





Source: WISE electronic reports

Figure 2.3 Comparison of pressures on surface water bodies in Poland in the first and second RBMPs. Pressures presented at the aggregated level.



Source: WISE electronic reports. Not all pressures are shown.

2.1.6 Definition and assessment of significant pressures on surface and groundwater

The only pressure on surface waters where potentially quantitative numerical tools were used to assess significance in the second cycle was for point source pressures where they were used in combination with expert judgement. Expert judgment was reported to be used to assess the significance of diffuse source pressures and pressure arising from water flow modifications[26]. Water abstraction pressures were not assessed[27].

For the first RBMPs numerical methods were mainly used to assess the significance of the identified pressures arising from point source, diffuse source and abstraction pressures on surface waters. In the first RBMPs, numerical tools were used to assess the significance, which also appears to have been the case for the second RBMPs. The RBMPs describe how point, diffuse and hydromorphological significant pressures were assessed separately and then how the cumulative effects of these pressures were considered.

It was stated in Vistula RBMP that exceedances of physicochemical indicators (including biogenic substances) based on 2010-2013 monitoring and significant municipal sewage

[26] Poland subsequently clarified that diffuse pressures assessment was based both on expert judgement and additional analysis performed during drafting the programmes of measures. Poland further clarified that the assessment of significance of diffuse pressure was based on calculated or estimated numbers presented as nutrient loads originating from those sources, in relations to thresholds defined in the law.

[27] Poland highlighted that in 2nd cycle special attention was paid to keeping a clear link between water body status assessment, identified pressures and measures planned as well as expertises prepared.

discharges were identified. In the RBMP, thresholds of significant pressure were mentioned in relation to nitrogen and phosphorus loads in the catchment and in a 1 000 m wide strip around each lake, taking into account the adopted abiotic types of lakes. The thresholds of significant pressure were determined based on the analysis of the relationship between the condition of monitored lakes and the intensification of pressure affecting those lakes. Identification of this relationship made it possible to determine the risk of not reaching the environmental objective by lakes for which monitoring was not carried out and data on the status of their waters was not available, while data on the pressure affecting them were available. Those unmonitored lakes were indicated to be at risk if the threshold values were exceeded for both parameters (phosphorus and nitrogen loads) or one of them.

The threshold values were also given for point sources in a table in the RBMP which were limit concentration values used to calculate the permissible load of different parameters such as biological oxygen demand, chemical oxygen demand, nitrogen, phosphorus and nickel. This implies that some threshold values were used for both point and diffuse source pressures, and it was reported that significance was not defined in terms of thresholds in the WISE data but that they were linked to the failure of objectives.

It was reported to WISE that no numerical threshold values were provided for hydromorphological pressures[28]. The identification of hydromorphological pressures was carried out on the basis of data from the survey of water administrators and information on the current flood protection system and studies carried out in the field of verification of the determination of heavily modified water bodies. Maps of different significant pressures were also presented in the RBMP. The hydromorphological pressure was considered significant, based on monitoring data from 2010-2013, where only biological indicators were exceeded, and at the state of preliminary determination of surface water bodies were designated as heavily modified water bodies. Such surface water bodies were also considered to be at risk of failing to achieve environmental objectives due to hydromorphological pressure affecting the state of biological elements.

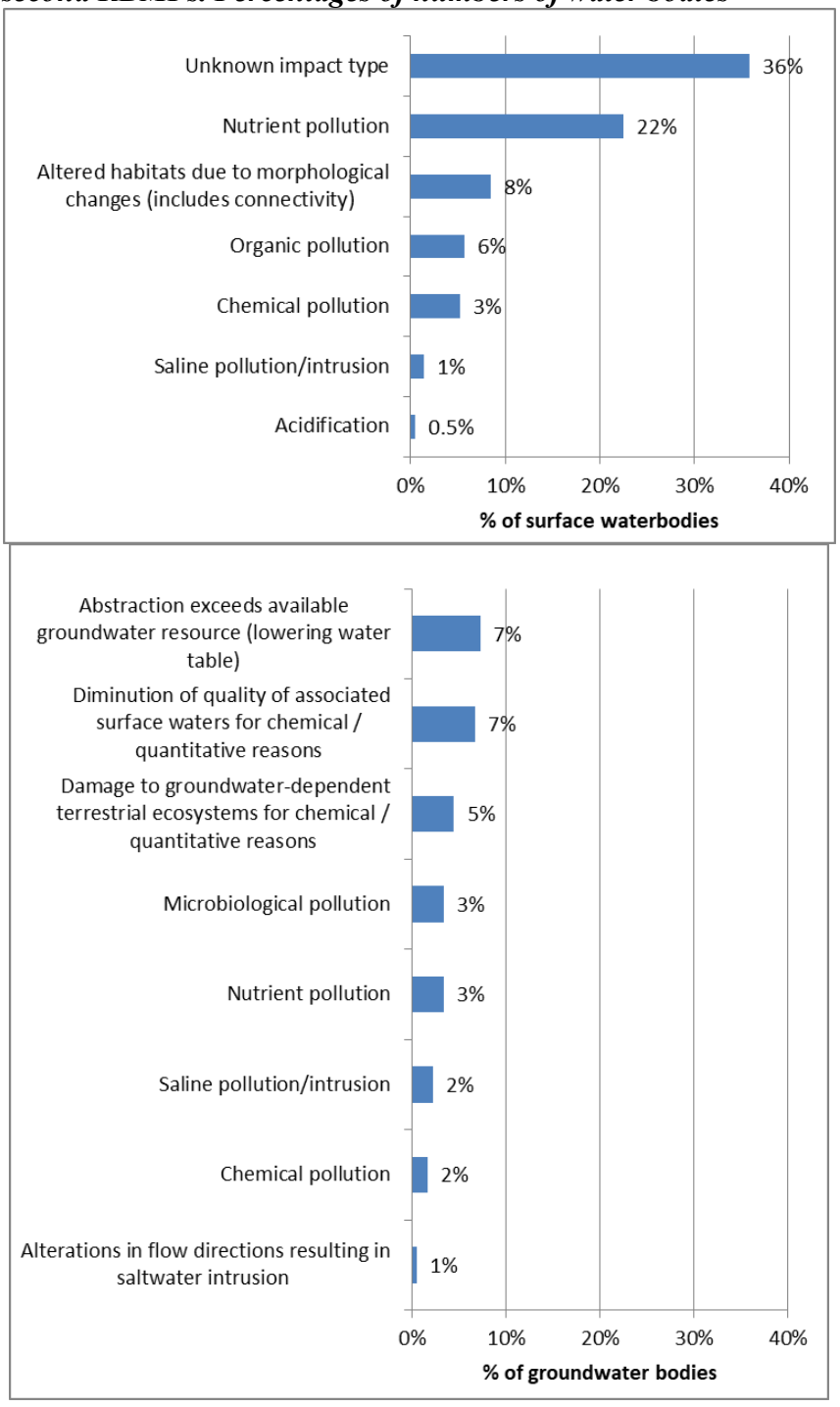
Hydromorphological pressure was identified and reported also for particularly important or important rivers where transverse buildings with need of patency restoration existed. The tools used to assess the significance of pressures on groundwater were all based on a combination of numerical tools and expert judgment in all RBDs and for all assessed pressures. Significance was defined in terms of thresholds and linked to the potential failure of objectives.

[28] Poland subsequently clarified that for the hydromorphological pressure assessment, the threshold values of indicators for preliminary identification of heavily modified water bodies were used (if biological indicators had been exceeded).

2.1.7 Significant impacts on water bodies

"Unknown impact' type was reported to affect the largest proportion (36%) of surface water bodies in Poland, followed by nutrient pollution (22%) and altered habitats due to morphological changes (8%) (Figure 2.4).

Figure 2.4 Significant impacts on surface water and groundwater bodies in Poland for the second RBMPs. Percentages of numbers of water bodies



Source: WISE electronic reports

The three most significant reported impacts on groundwater bodies in Poland (Figure 2.4) were:

- abstraction exceeding available groundwater resource (lowering water table) (7% of groundwater bodies);
- diminution of quality of associated surface waters for chemical or quantitative reasons (7%), and;
- damage to groundwater-dependent terrestrial ecosystems for chemical or quantitative reasons (4.5%).

2.1.8 Groundwater bodies at risk of not meeting good status

Two RBDs reported that groundwater bodies were at risk of not achieving good chemical status: around 8% of groundwater bodies were at risk in Poland as a whole. 13 groundwater pollutants were reported as causing a risk to the achievement of good chemical status in groundwater bodies in two of the ten RBDs in Poland. Nitrate affected the most groundwater bodies (six) in the two RBDs.

7% of groundwater bodies in Poland were reported to be at risk of not achieving good quantitative status with saline or other intrusion and effects on water balance to be the cause of the risk. The groundwater bodies at risk of not achieving good quantitative status were only in the Vistula and Oder RBDs.

2.1.9 Quantification of the gap and apportionment of pressures

Poland reported the gaps to be filled for all significant pressures reported at the groundwater and surface water body level. 36 different chemical substances causing failure of objectives were reported by Poland: 12 chemical substances in groundwater and 25 chemical substances in surface water. The chemical substances include Priority Substances and polluting substances in groundwater. Gaps were reported for each in terms of the number of water bodies where chemical pressures were preventing the achievement of objectives and the number of water bodies where diffuse atmospheric deposition pressures were preventing the achievement of objectives.

2.1.10 Inventories of emissions, discharges and losses of chemical substances

Article 5 of the Environmental Quality Standards Directive (EQS Directive)[29] requires Member States to establish an inventory of emissions, discharges and losses of all Priority

[29] Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives

Substances and the eight other pollutants listed in Part A of Annex I EQS Directive for each RBD, or part thereof, lying within their territory. This inventory should allow Member States to further target measures to tackle pollution from priority substances. It should also inform the review of the monitoring networks, and allow the assessment of progress made in reducing (resp. suppressing) emissions, discharges and losses for priority substances (resp. priority hazardous substances).

All 10 RBDs in Poland reported inventories of emissions, discharges and losses and all Priority Substances and groups of Priority Substances are included, apart from benzo(g,h,i)perylene and indeno(1,2,3-cd) pyrene (these belong to the group of polycyclic aromatic hydrocarbons).

The two step approach from the Common Implementation Strategy Guidance Document n°28[30] has not been followed for any of substances included in the inventories. Tier 1 of the methodology was implemented for all substances included in the inventories (while the Guidance Document recommends to implement at least Tier 1 + 2 for substances relevant at RBD level). The data quality was assessed as medium.

2.2 Main changes in implementation and compliance since first cycle

There was a 25% reduction in the number of heavily modified water bodies in Poland for the second RBMPs compared to the first. The largest decrease was in heavily modified river water bodies in two RBDs: the Vistula and the Oder. This was accompanied by an almost equivalent number of identified natural river bodies between the two RBMPs. In contrast there was an increase in the number of heavily modified lake water bodies between the two RBMPs from 75 in the first RBMP to 123 in the second cycle. There were only small changes in the number of types reported for each water category in each RBD between the two RBMPs, with all differences being for lakes.

There were, however, some noticeable differences between the pressure types and extent of pressures between the two RBMPs. Abstraction pressures were reported to affect 12% of surface water bodies in the first cycle but were not assessed in the second cycle[31]. The proportion of water bodies affected by diffuse agriculture also increased for the second RBMPs: 2% of lakes in the first cycle, 62% in the second cycle; 3% of rivers in the first cycle,

82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02008L0105-20130913

[30] CIS Guidance N° 28 - Preparation of Priority Substances Emissions Inventoryhttp://ec.europa.eu/environment/water/water-framework/facts_figures/guidance_docs_en.htm

[31] Poland subsequently clarified that even if surface water abstraction has not been identified as a significant pressure it is controlled in the frame of measures implemented at national level.

and 8% in the second cycle. This appears to have been from improved methodology that used loading data as well as expert judgement. Unknown anthropogenic pressures were also reported to be significant in the second cycle: this pressure type was not used in the first cycle reports.

There was a significant increase in the number of delineated groundwater bodies between the two RBMPs (from 161 to 172). This increase in numbers of water bodies does not explain the large differences between the type and extent of pressures reported for groundwater for the two RBMPs. In 2010, abstractions for public water supply affected 92% of groundwater bodies, in the second cycle none were reported to be affected. Groundwater abstractions were assessed using a combination of numerical tools and expert judgement and no changes in methodology were identified so the reasons for this change are unclear. Diffuse mining pressures were reported to be most significant in the second cycle but had not been in the first cycle.

2.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation: *Where there are currently high uncertainties in the characterisation of the RBDs, identification of pressures, and assessment of status, these need to be addressed in the current RBMPs, to ensure that adequate measures can be put in place before the next RBMPs.*

  Assessment: In the second cycle Poland reported that reference conditions have been established for all water body types in each category for all biological, hydromorphological and physicochemical quality elements which is a significant improvement since the first RBMPs. Pressures have been assessed using a combination of expert judgement and quantitative analysis. There was significant reporting of "unknown impacts' which could imply that methods were not discriminative enough for use for WFD purposes[32]. Overall there has been progress and this recommendation has been partially fulfilled.

[32] Poland subsequently stated that "Anthropogenic pressure – unknown" was reported when identification of pressure was not possible, which included all those water bodies with status assessed upon expert judgement and which reliable assessment of pressure impact on water status was impossible to be done for, were reported as water bodies with unknown pressure. Poland also stated that water bodies assessed based on monitoring results but with no significant wastewater discharge from industry or communal WWTPs in its catchment were reported as water bodies with unknown pressure as well. Poland indicated that for such water bodies

Topic 3 Monitoring, assessment and classification of ecological status in surface water bodies

3.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

3.1.1 Monitoring of ecological status/potential

Monitoring programmes

Article 8.1 of the WFD requires Member States to establish monitoring programmes for the assessment of the status of surface water and of groundwater in order to provide a coherent and comprehensive overview of water status within each RBD. Territorial waters are not a water body category under WFD. However, it should be noted that under Article 2(1) of the WFD, territorial waters are included for the assessment and reporting of chemical status.

There were several gaps in the reported monitoring programmes in relation to water categories identified in Poland. There were no programmes for the surveillance monitoring of rivers in the Danube, Jarft, Elbe or Dniester RBDs. There was no WFD surveillance monitoring programme for coastal waters and transitional waters in the Vistula or Oder RBDs. There was no lake monitoring programme in the Swieza RBD, although there is one lake water body. In addition, no monitoring programme was reported for territorial waters even though two RBDs have delineated coastal water bodies.

Poland subsequently stated that a surveillance monitoring programme was implemented for river basins Jarf, Dniester, Danube and Łaba as well as in all transitional and coastal areas in the period 2010-2012. The non-reporting of these programmes was probably an error.

Monitoring sites and monitored water bodies used for surveillance and operational monitoring

Table 3.1 compares the number of monitoring sites used for surveillance and operational purposes between the two RBMPs, and Table 3.2 gives the number of sites used for different purposes for the second RBMPs. Note that no information has been provided for the Ucker RBD as no surface water body was delineated in this RBD.

For rivers, there were five times more monitoring sites used for operational purposes than for surveillance monitoring in the second RBMPs, while for lakes there were almost equal numbers of monitoring sites for operational and for surveillance monitoring.

implementation of an approach aiming at confirmation if the identified pressure is significant or not and if it has impact on water status was planned in the PoM.

There was a significant reduction in the number of operational monitoring sites from the first to the second RBMPs in all four water categories. Proportionally the largest decrease was in transitional waters (71%), followed by lakes (46%), coastal waters (33%) and rivers (14%).

Table 3.1 Number of sites used for surveillance and operational monitoring in Poland for the second and first RBMPs. Note that for reasons of comparability with data reported in the first RBMPs, the data for the second RBMPs does not take into account whether sites are used for ecological and/or chemical monitoring

	Rivers		Lakes		Transitional		Coastal	
	Surv.	**Op**	**Surv.**	**Op**	**Surv.**	**Op**	**Surv.**	**Op**
second RBMP								
PL_1000	0	5	0	0				
PL_2000	192	1031	151	169		5		6
PL_3000	1	1	0	0				
PL_4000	0	1	0	0				
PL_5000	0	3	0	0				
PL_6000	133	734	133	166		4		4
PL_7000	8	31	30	30				
PL_8000	4	6	8	8				
PL_9000	0	1	0	0				
Total by type of site	*338 (494)*	*1813*	*322*	*373*	*0*	*9*	*0*	*10*
Total number of monitoring sites	*1879*		*451*		*9*		*10*	
first RBMP								
PL_1000	2	6	0	0	0	0	0	0
PL_2000	304	1134	303	315	8	19	8	9
PL_3000	0	1	0	0	0	0	0	0
PL_4000	1	1	0	0	0	0	0	0
PL_5000	2	4	0	0	0	0	0	0
PL_6000	193	913	229	324	8	12	6	6
PL_7000	5	41	32	32	0	0	0	0
PL_8000	15	14	17	18	0	0	0	0
PL_9000	1	1	0	0	0	0	0	0
Total by type of site	*523*	*2115*	*581*	*689*	*16*	*31*	*14*	*15*
Total number of monitoring sites	*2194*		*707*		*31*		*15*	

Sources: Member States electronic reports to WISE. The number in parentheses was subsequently provided by Poland, to correct what seems to have been a reporting error

Subsequently Poland indicated that the seeming reduction of representative monitoring sites from the first to the second RBMPs was the result of redefinition of the role of monitoring sites. Changes in the legal acts concerning monitoring improved the management of monitoring data, making the assessment of water bodies more representative and facilitated the quality of the analysis of the status of waterbodies. Monitoring sites are designed for the representative assessment of a whole water body, and are composed of many subsites. In surveillance monitoring there are up to eight different functional types of monitoring subsites.

Poland also indicated that some of reported changes from the first to the second RBMPs may be due to how the information has been reported to WISE - there have been unintended reporting errors.

Table 3.2 ***Number of monitoring sites in relevant water categories used for different purposes*** *for the second RBMP* ***in Poland.*** *Note that no differentiation is made between sites used for ecological monitoring and/or chemical monitoring*

Monitoring Purpose	Lakes	Rivers	Transitional	Coastal
BWD - Recreational or bathing water - WFD Annex IV.1.iii	52	47	7	9
DWD - Drinking water - WFD Annex IV.1.i	1	121		
ECO - Ecological status	22	12		
HAB - Protection of habitats or species depending on water - WFD Annex IV.1.v	193	582	6	8
INV - Investigative monitoring	10	94	9	10
NID - Nutrient sensitive area under the Nitrates Directive - WFD Annex IV.1.iv	7	167		
OPE - Operational monitoring	373	1813	9	10
SUR - Surveillance monitoring	322	338		
UWW - Nutrient sensitive area under the Urban Waste Water Treatment Directive - WFD Annex IV.1.iv	159	1460	9	10
Total sites irrespective of purpose	**464**	**2108**	**9**	**10**

Source: WISE electronic reporting

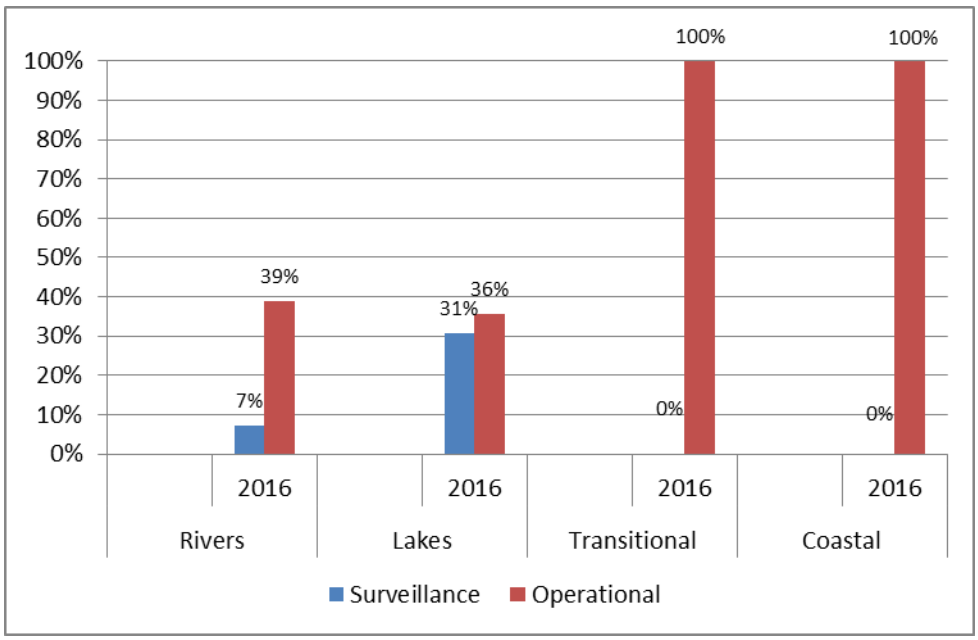
There were also significant reductions in the number of surveillance monitoring sites from the first to the second RBMPs, with no sites in coastal and transitional waters in the second RBMPs.

There were reductions in lake and river surveillance sites, respectively, from the first to the second RBMPs corresponding to 45% for lakes (from 581 to 322 sites) and 35% for rivers (from 523 to 338 sites),

Table 3.2 gives the number of sites reported to be used for different purposes for the second RBMP. Differences between the numbers of sites reported to be used for "ecological status" and for surveillance/operational monitoring probably indicate some uncertainty on what was expected to be reported by Member States for these elements leading to some unintended reporting errors.

Figure 3.1 shows the percentage of water bodies included in surveillance and operational monitoring for the second plans (no data at water body level was provided for the first plans). Around a third of lake water bodies were monitored for both operational purposes and surveillance purposes in the second RBMPs with around a third of river water bodies being monitored for operational purposes and only 7% being monitored for surveillance purposes. No transitional and coastal water bodies were monitored for surveillance purposes but all were monitored for operational purposes.

Figure 3.1 ***Percentage of water bodies included in surveillance and operational monitoring in Poland for second RBMPs (2016). Note no differentiation is made between water bodies included in ecological and/or chemical monitoring***

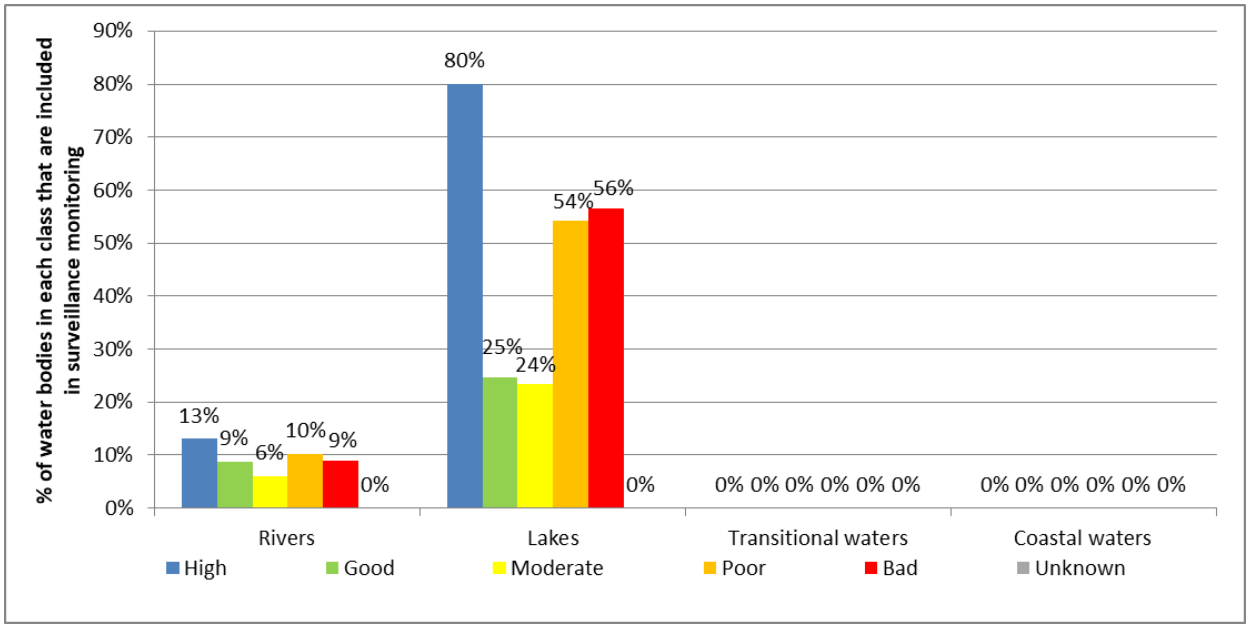


Source: WISE electronic reporting

Monitoring sites and monitored water bodies used for ecological status/potential

Figure 3.2 shows the proportion of water bodies in each ecological status/potential class that are included in surveillance monitoring in Poland. As stated above, there is no longer any surveillance monitoring of transitional and coastal waters reported for Poland[33].

Figure 3.2 Proportion of water bodies in each ecological status/potential class that are included in surveillance monitoring in Poland



Source: WISE electronic reports

Transboundary surface water body monitoring

Poland reported transboundary river water bodies in eight of its 10 RBDs. Most were in the Oder (67) and Vistula (49) RBDs. Transboundary coastal, lake and transitional water bodies were also reported. No monitoring sites were reported to be part of international monitoring networks.

Poland subsequently clarified that the monitoring of transboundary waterbodies was continued during the 2010-2015 monitoring cycle. All of the waterbodies subject to international cooperation were covered by investigational monitoring according to these agreements. The transboundary waterbodies that are most important to water management were additionally covered by surveillance monitoring and, if the pressure and impact assessment indicate it

[33] Poland subsequently stated that this lack of reporting of surveillance monitoring in transitional and coastal waters was probably an unintended reporting error.

necessary, by operational monitoring. The gaps in the electronic reports to WISE are probably due to reporting errors.

Quality elements monitored (excluding River Basin Specific Pollutants)

Table 3.3 illustrates the quality elements used for the monitoring of lakes and rivers for the second RBMPs: no differentiation is made between the purposes of monitoring.

Table 3.3 Quality elements monitored for the second RBMPs in Poland (excluding River Basin Specific Pollutants).[34] Note: quality element may be used for surveillance and/or operational monitoring. "Other aquatic flora" may be reported separately for its component sub-quality elements, for example, macrophytes and phytobenthos in rivers, by some Member States.

	Biological quality elements										Hydromorphological quality elements		
	Phytoplankton	Macrophytes	Phytobenthos	Benthic invertebrates	Fish	Angiosperms	Macroalgae	Other aquatic flora	Other species		Hydrological or tidal regime	Continuity conditions	Morphological conditions
Rivers	Yes	Yes	Yes	Yes	No			No	Yes		No	No	No
Lakes	Yes	Yes	Yes	Yes	No			No	Yes		No	No	No
Transitional	Yes			No	No	No	No	No	Yes		No	No	No
Coastal	Yes			No		No	No	No	Yes		No	No	No

	General physicochemical quality elements								
	Transparency conditions	Thermal conditions	Oxygenation conditions	Salinity conditions	Acidification status	Nitrogen conditions	Phosphorus Conditions	Silicate	Other determinand for nutrient conditions
Rivers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lakes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transitional	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Coastal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: WISE electronic reporting

[34] Poland subsequently clarified that the following quality elements are monitored: benthic invertebrates in transitional and coastal waters; fish in rivers, lakes and transitional waters; angiosperms in transitional and coastal waters; macroalgae in transitional and coastal waters (where it occurs naturally); and the three hydromorphological quality elements in lakes.

There were major gaps in the quality elements monitored in Poland. Fish were not monitored in rivers, lakes and transitional waters; the only biological quality element monitored in coastal and transitional waters was phytoplankton (though chlorophyll a was reported as an 'other' quality element); macrophytes and phytobenthos are not monitored in rivers in two RBDs (Swieza and Jarft); hydromorphological quality elements are not monitored in any water category. There was no detail on what specific quality elements were monitored in the first RBMPs, though an alternative source indicated that some quality elements were monitored in rivers and coastal waters. Comparison with this alternative source shows that there has been some progress in that phytobenthos and benthic invertebrates are now monitored in lakes, but most of the shortcomings in the first RBMPs were still present in the second. In coastal and transitional waters there was no biological quality elements monitored other than phytoplankton chlorophyll. The emphasis in Polish monitoring therefore remained on the general physicochemical quality elements.[35]

None of the water bodies included in surveillance monitoring in Poland was reported as being monitored for all the required biological and hydromorphological quality elements. However, Poland subsequently clarified that all the required biological and hydromorphological quality elements were monitored in many water bodies.

Concerning the general physicochemical quality elements, all the required elements were monitored in every water body included in surveillance monitoring..

Three of the required biological quality elements were reported to be used in the operational monitoring of rivers. The predominant element was phytobenthos (25% of water bodies in operational monitoring), followed by benthic invertebrates (18%) and macrophytes (17%). Fish were not monitored in rivers, lakes and transitional waters, but were nevertheless reported to be classified based on monitoring for a small proportion of river and lake water bodies.

River Basin Specific Pollutants and matrices monitored

Poland reported that 30 substances that are not Priority Substances were being monitored. According to the Reporting Guidance for the second RBMPs it was expected that these would be River Basin Specific Pollutants. However, Poland subsequently clarified that the register of

[35] Poland subsequently clarified that the data reported to WISE do not reflect all the situation in Poland. Fish monitoring was undertaken in rivers, lakes and transitional water bodies in the period 2010-2015. For example, fish were monitored in 763 river water bodies, and only a small fraction of results was excluded from ecological status assessment. The hydrologic regime is monitored continuously by Poland's Institute of Meteorology and Water Management. However, hydromorphological elements of rivers were monitored in Polish State Environmental Monitoring in 2011 and 2012 as a pilot programme by Institute of Meteorology and Water Management, and since 2013 it has been introduced in routine monitoring.

River Basin Specific Pollutants includes 24 synthetic and non-synthetic river basin specific pollutants.

Among the substances for which an Environmental Quality Standard was reported (which are assumed to be the substances identified as the 24 River Basin Specific Pollutants), copper was monitored at the largest number of sites (1 688 within seven RBDs). Phenol was reported to be monitored in nine of the 10 RBDs at 1 031 sites.

The WFD indicates that, for the surveillance and operational monitoring of River Basin Specific Pollutants, the frequency of monitoring should be at least once every three months for one year during the RBMP cycle and at least once every three months every year, respectively (this frequency is to be understood for monitoring in water). Greater intervals can be applied provided they are justified on the basis of expert judgment or technical knowledge. Overall in Poland, River Basin Specific Pollutants were monitored at a frequency equal to or above the intra-annual minimum frequency (4 times per year) at most of sites. No explanation could be found for the reduced frequencies implemented at some of the sites.

It was reported that River Basin Specific Pollutants were only monitored in water.

Table 3.4 indicates that the 30 substances reported in WISE as being monitored were monitored at 391 lake sites and 1 348 river sites. Despite some minor inconsistencies in the number of monitoring sites between different sources of information, and despite the inconsistencies between the number of substances reported to be monitored as River Basin Specific Pollutants in WISE and the River Basin Specific Pollutants actually identified by Poland, it is clear that the monitoring of River Basin Specific Pollutants was a major improvement compared to the first RBMPs, where these pollutants were not reported to be monitored.

Table 3.4 Number of sites used to monitor River Basin Specific Pollutants for the second RBMPs and non-priority Specific Pollutants and/or other national pollutants in the first RBMPs in Poland. Note the data from the first and second RBMPs may not be fully comparable as different definitions were used and also not all Member States reported information at the site level meaning that there were no equivalent data for the first RBMPs.

RBMP		Lakes	Rivers	Transitional	Coastal
Second	Sites used to monitor River Basin Specific Pollutants	391	1348	9	3
First	Sites used to monitor non-priority specific pollutants and/or other national pollutants	0	0	0	0

Sources: WISE electronic reports

Use of monitoring results for classification

There were a number of mismatches between the water bodies classified based on monitoring and those directly monitored for most biological quality elements and supporting physico-chemical quality elements. Fish were not reported to be monitored in any water category. However, fish were also reported to be used to classify some lake and river water bodies using monitoring results: this is again not consistent with the reported monitoring data. The hydromorphological quality elements were not directly monitored, but were still claimed to be classified partly based on monitoring in coastal, rivers and transitional waters. In lakes, expert judgement was solely used to classify the hydromorphological quality elements.

Expert judgment was used to classify proportionally more lake water bodies in terms of each quality element than by using monitoring results: grouping was not used at all. The classification of all quality elements in transitional waters was solely based on monitoring data. In rivers grouping was used to classify proportionally more water bodies than monitoring results for all classified quality elements: expert judgement was not used at all. There were also inconsistencies between classified and monitored biological quality elements in coastal and transitional waters. The only reported monitored biological quality element in both was phytoplankton, but benthic invertebrates were used in the classification of transitional waters and macroalgae and benthic invertebrates in coastal waters. For benthic invertebrates in the two saline water categories, the classification was reported to be based on monitoring results, although no monitoring was reported for this biological quality element.

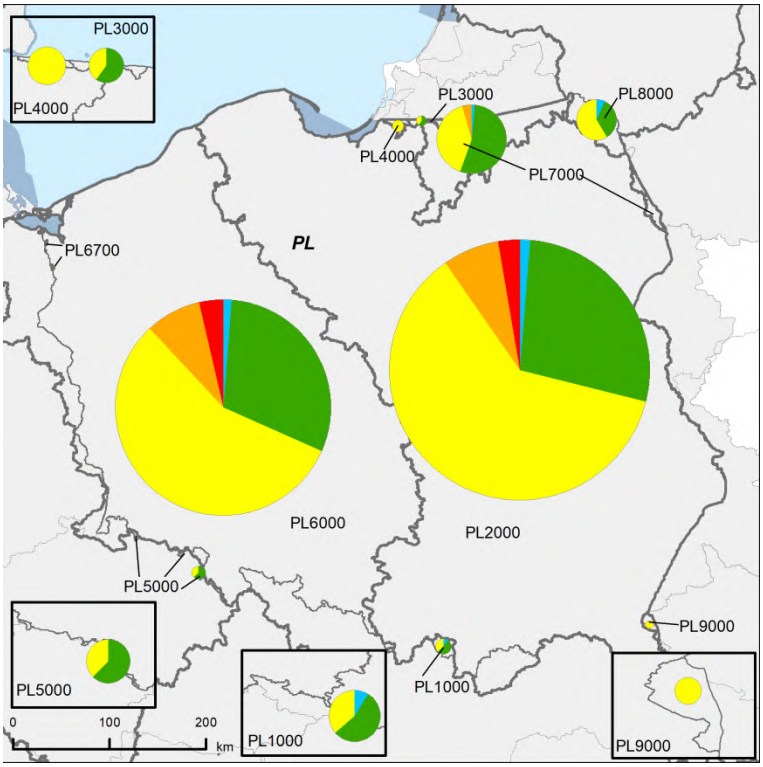
For the River Basin Specific Pollutants, the proportion of classified water bodies based on monitoring varied considerably between RBDs and water categories, with a large majority of water bodies classified based on grouping for rivers and on expert judgement for lakes.

3.1.2 Ecological Status/potential of surface water

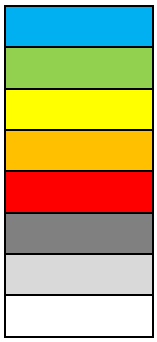
The ecological status/potential of surface water bodies in Poland for the second RBMPs is illustrated in Map 3.1. This is based on the most recent assessment of status.

Map 3.1 ***Ecological status or potential of surface water bodies in Poland based on the most recently assessed status/potential of the surface water bodies***

Note: Standard colours based on WFD Annex V, Article 1.4.2(i).



Source: WISE, Eurostat (country borders)



High
Good
Moderate
Poor
Bad
Unknown
RBDs
Countries outside the European Union

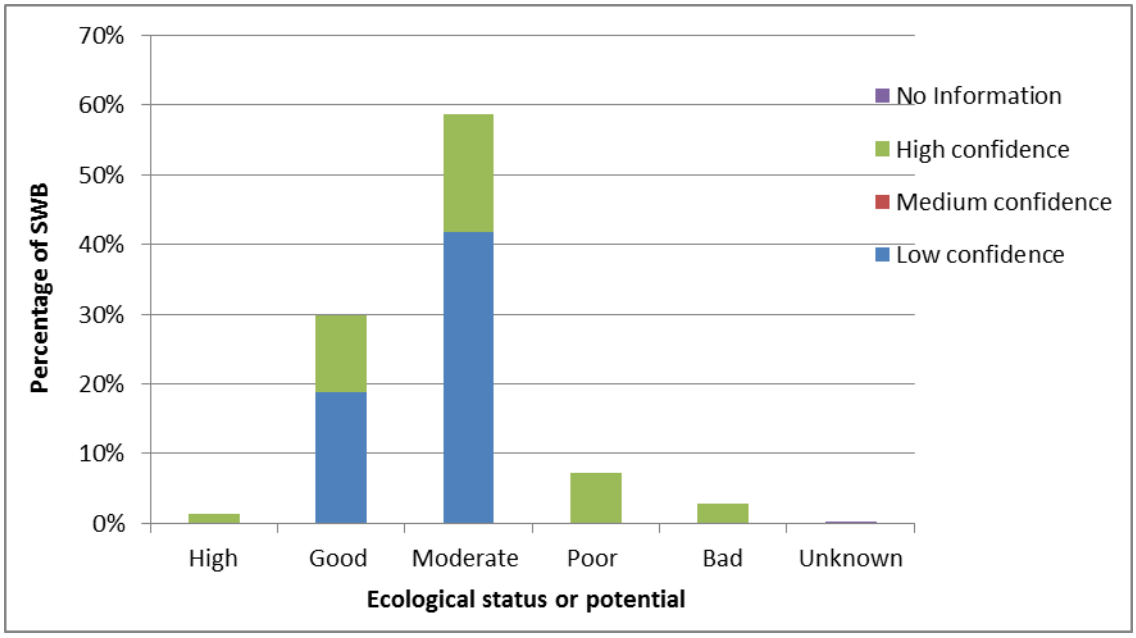
All but two water bodies were classified. The proportion of unknowns decreased from 80% in the first RBMPs to less than 1% in the second, which is a major improvement. However, the proportion of water bodies in less than good ecological status was 70%. Most of these were at moderate status.

Figure 3.3 shows the confidence in the classification of ecological status/potential. The majority (60%) of river and lake water bodies were classified with low confidence, while all the coastal and transitional water bodies were classified with high confidence (which is

difficult to reconcile, given the fact that very few biological quality elements were used for classifying the two saline water categories). The remaining river and lake water bodies were classified with high confidence.

Poland subsequently explained that all transitional and coastal waters were assessed based on data of all biological quality elements required for these water body categories under WFD. This information was not in the electronic report to WISE because of reporting errors. Phytoplankton (chlorophyll-a), macroalgae, angiosperms and benthic invertebrates were assessed in coastal water bodies, and also fish in transitional waters; hence the confidence level of the assessment is high for these water body categories. Furthermore, river and lake water bodies that were assessed based on 'expert judgement' with low confidence due to the fact that were not assessed based on the monitoring data.

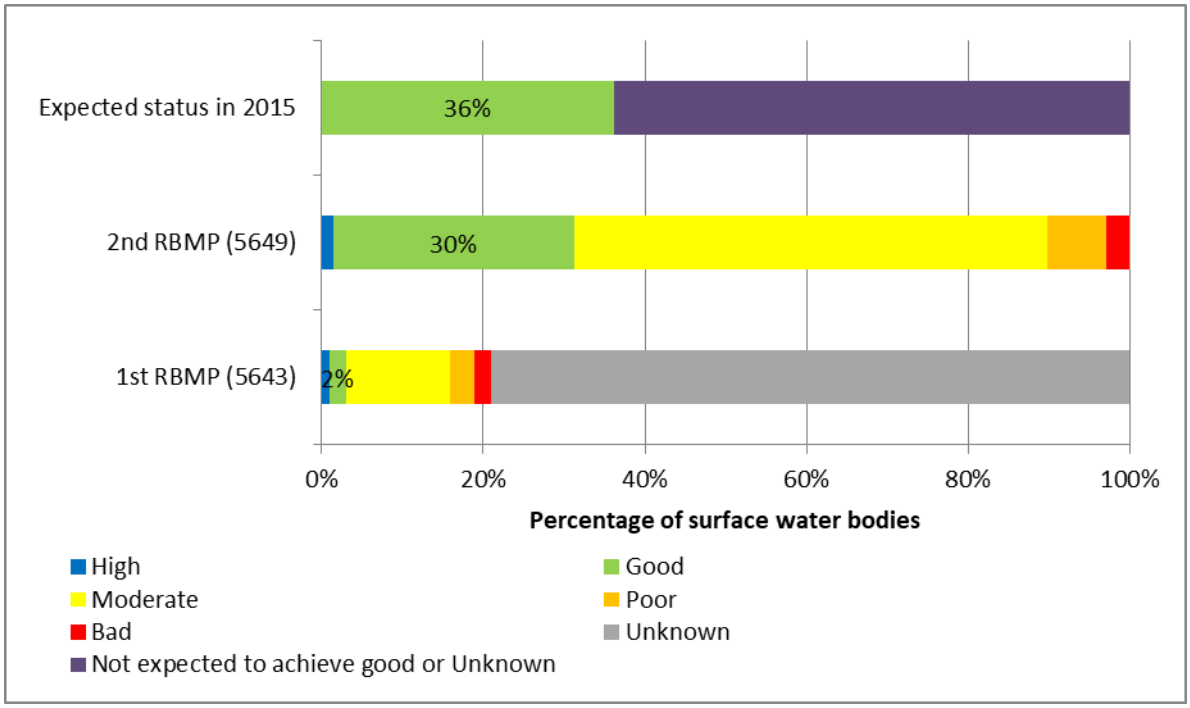
Figure 3.3 Confidence in the classification of ecological status or potential of surface water bodies in Poland based on the most recently assessed status/potential



Source: WISE electronic reporting

Figure 3.4 compares the ecological status of surface water bodies in Poland for the first RBMPs with that for the second (based on the most recent assessment of status/potential) and that expected by 2015). The results mainly show the huge reduction in the proportion of unknowns since the first RBMPs, but that the proportion at good status/potential was less than good for 70% of all the water bodies. The expectation for 2015 was that 64% of all water bodies would be in less than good ecological status.

Figure 3.4 ***Ecological status or potential of surface water bodies in Poland for the second RBMPs, for the first RBMPs and expected in 2015. The number in the parenthesis is the number of surface water bodies for each cycle. Note the period of the assessment of status for the second RBMPs was 2007 to 2012. The year of the assessment of status for first RBMPs is not known***

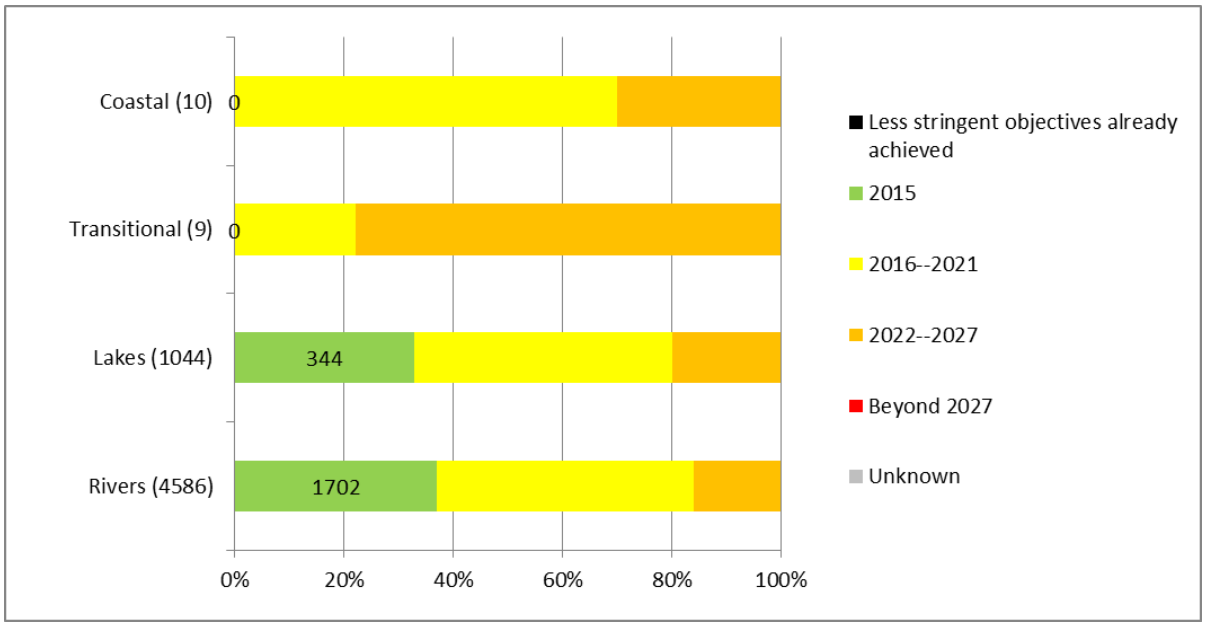


Source: WISE electronic reporting

Member States were asked to report the expected date for the achievement of good ecological status/potential. The information for Poland is shown in Figure 3.5. 37% of river water bodies are expected to achieve their objectives by 2015, which is consistent with the information given in Figure 3.4, in which 36% of all surface water bodies are expected to be in good ecological status by 2015 (and rivers are the water category with most of the total number of water bodies in Poland).

For lakes, 1/3 was expected to achieve the objectives by 2015, approximately another 50% by 2016-2021, and the rest by 2022-2027. For coastal waters, the majority was expected to achieve the objectives in the second RBMPs (2016-2021), while the more than 80% of the transitional waters were only expected to achieve their objectives during the period 2022-2027. No water bodies were reported to have already achieved less stringent objectives.

Figure 3.5 ***Expected date of achievement of good ecological status/potential of surface water bodies in Poland. The number in the parenthesis is the number of water bodies in each category***



Source: WISE electronic reporting

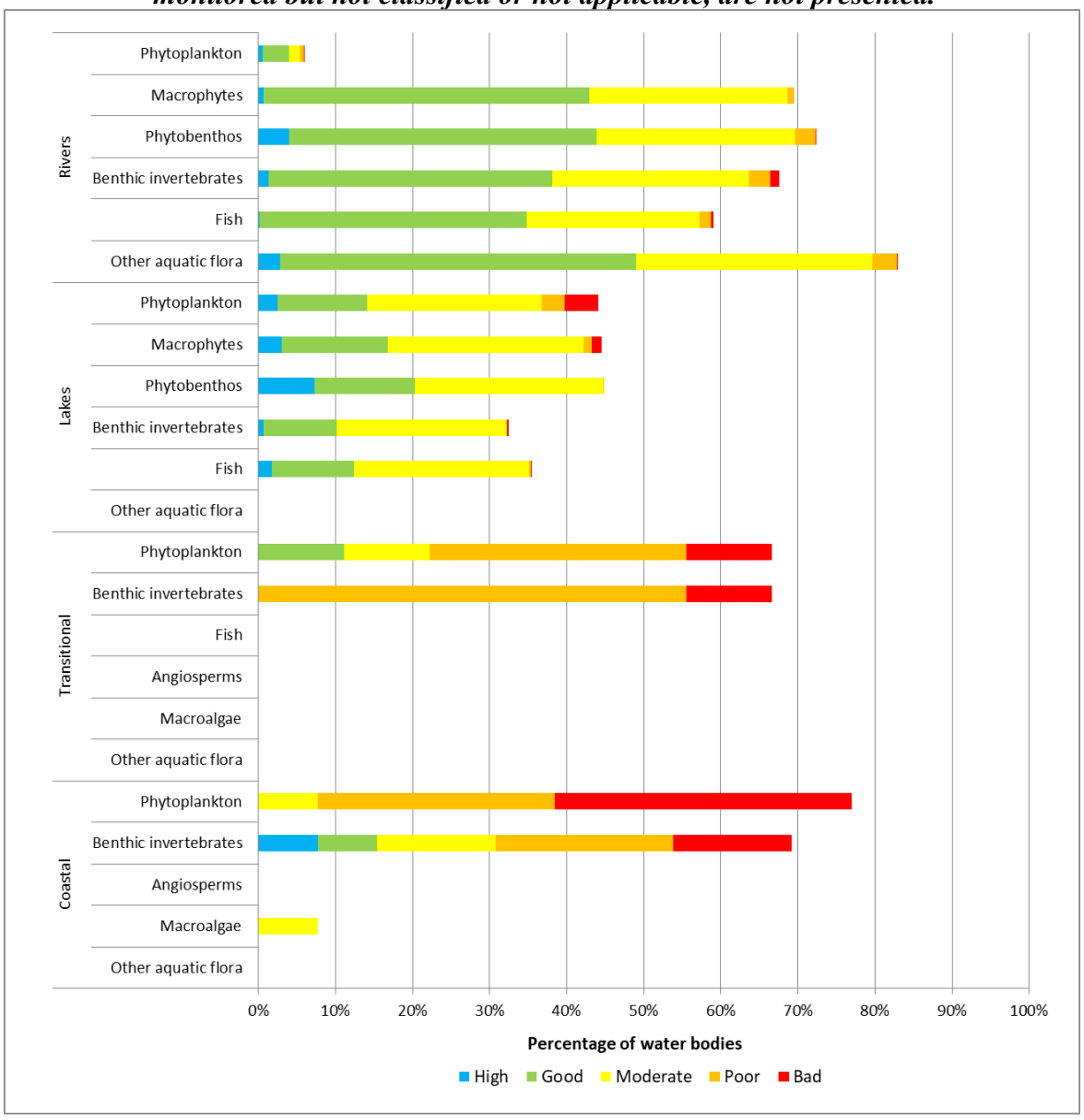
Classification of ecological status in terms of each classified quality element

Figure 3.6 shows that the proportion of water bodies in good or high ecological status was much higher for the single biological quality elements than for total ecological status for rivers (compare Figure 3.6 with Map 3.1, which is dominated by river water bodies). For rivers, most of the biological quality elements were classified in almost 80% of water bodies, and the proportion at good or better status was 40-50%, while for lakes, the proportion of water bodies classified was almost 90% for phytoplankton, phytobenthos and macrophytes, while benthic invertebrates and fish were classified for 60-70%.

The proportion of classified water lakes at good or better status was 20-40%, which was less than for rivers. Transitional and coastal water bodies were classified with only phytoplankton and benthic invertebrates, except for a few coastal water bodies where macroalgae was classified (10% of all water bodies, which means one water body only). The ecological status was less than good in 80% or more of the total coastal or transitional water bodies.

A large proportion of the water bodies were classified based on expert judgement or grouping. For fish, no direct monitoring was reported, but a small proportion was reported to be based on monitoring[36].

Figure 3.6 ***Ecological status/potential of the biological quality elements used in the classification of surface waters in Poland. Note that water bodies with unknown status/potential at the quality element level*** and ***those that are monitored but not classified or not applicable, are not presented.***



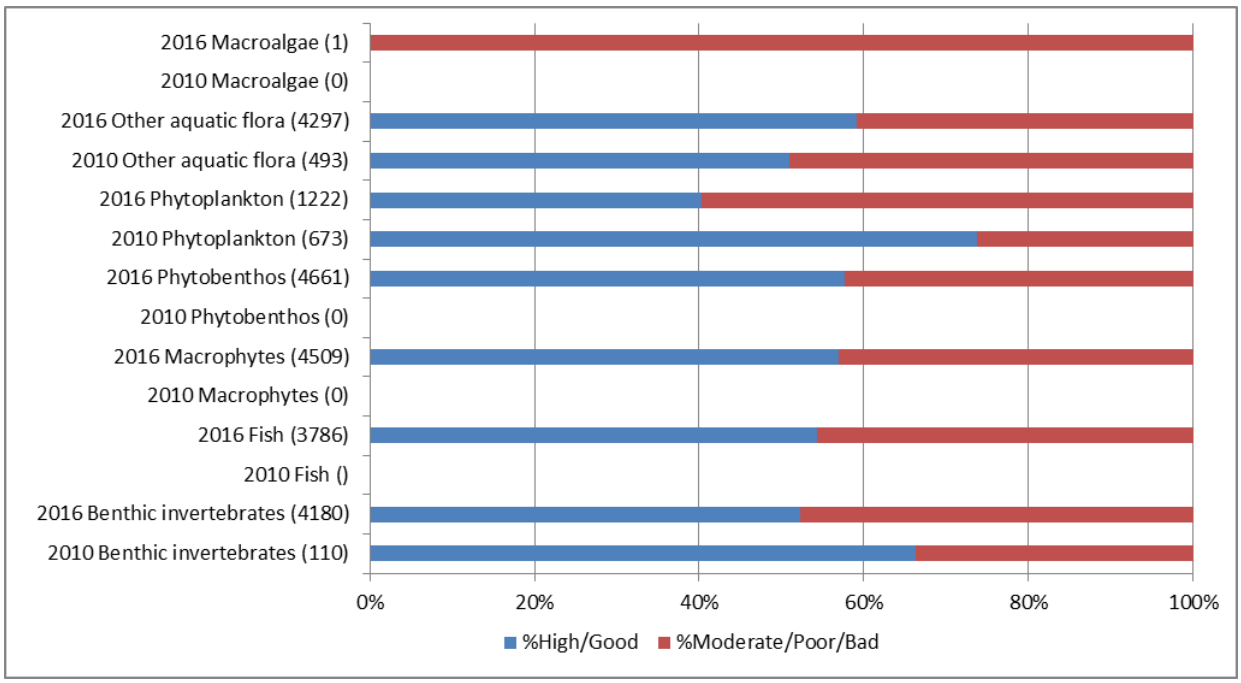
Source: WISE electronic reporting

Figure 3.7 compares the classification of biological quality elements in terms of ecological status/potential for the first and second RBMPs. It should be noted that this comparison should

[36] Poland subsequently stated that fish were monitored during the whole cycle. This had not been reported because of unintended reporting errors.

be treated with some caution as there are differences between the numbers of surface water bodies classified for individual elements from the first to the second RBMPs. Changes in the ecological status of the biological quality elements cannot be assessed due to the very different proportion of unknowns in the first and second RBMPs (80% unknowns in the first RBMPs and no unknowns in the second).

Figure 3.7 Comparison of ecological status/potential in Poland according to classified biological quality elements in surface water bodies between the first and second RBMPs. The numbers in parenthesis show the number of water bodies with a classification for that element

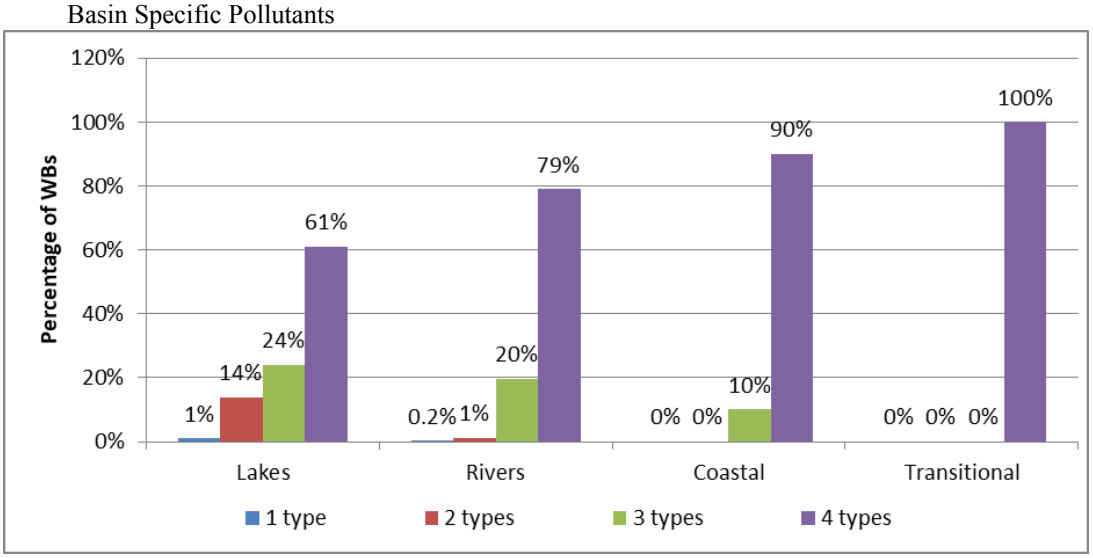


Source: WISE electronic reporting

Figure 3.8 and Figure 3.9 illustrate the basis of the classification of ecological status/potential of rivers and lakes in Poland for the second RBMPs. The figures show that all the four groups (types) of quality elements were used to classify the large majority (80%) of the river water bodies, while 20% were classified using three groups of quality elements. For lakes, the proportion of water bodies classified with all the four groups of quality elements was only 61%, while 24% were classified with three types of quality elements and 14% using only two types. For coastal and transitional waters, 90% and 100% respectively were classified using all the four groups of quality elements. However, the majority of water bodies were classified using grouping or expert judgement, especially for hydromorphological quality elements, which have not been directly monitored in the second RBMPs.

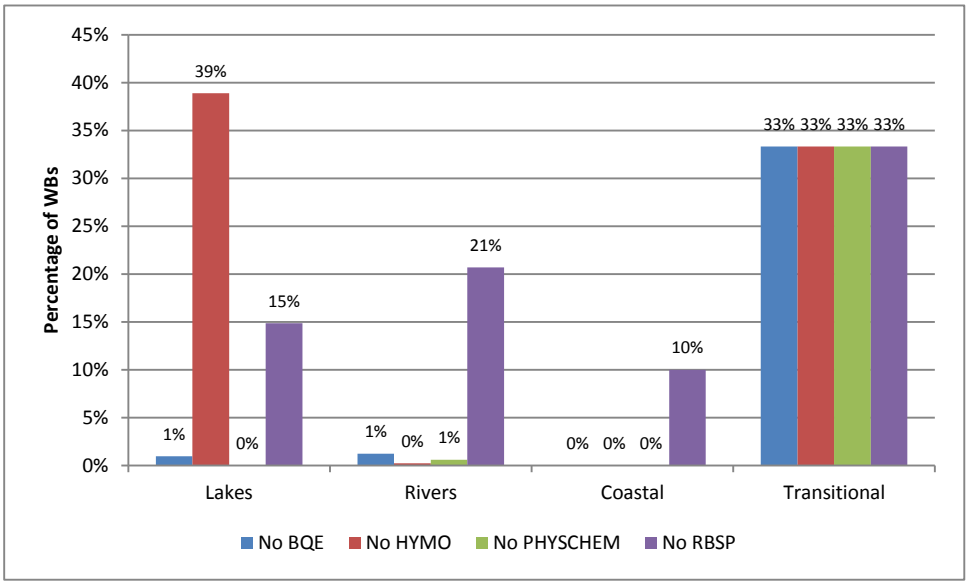
Figure 3.8 ***The classification of the ecological status or potential of rivers and lakes in Poland using 1, 2, 3 or 4 types of quality element***

Note: The four types are: biological; hydromorphological, general physicochemical and River Basin Specific Pollutants



Source: Member State reports to WISE

Figure 3.9 ***The percentage of river and lake water bodies in Poland where no biological quality element or no hydromorphological (HYMO) or no general physicochemical (PHYSCHEM) or no river basin specific pollutant (RBSP) has been used in the classification of ecological status or potential***



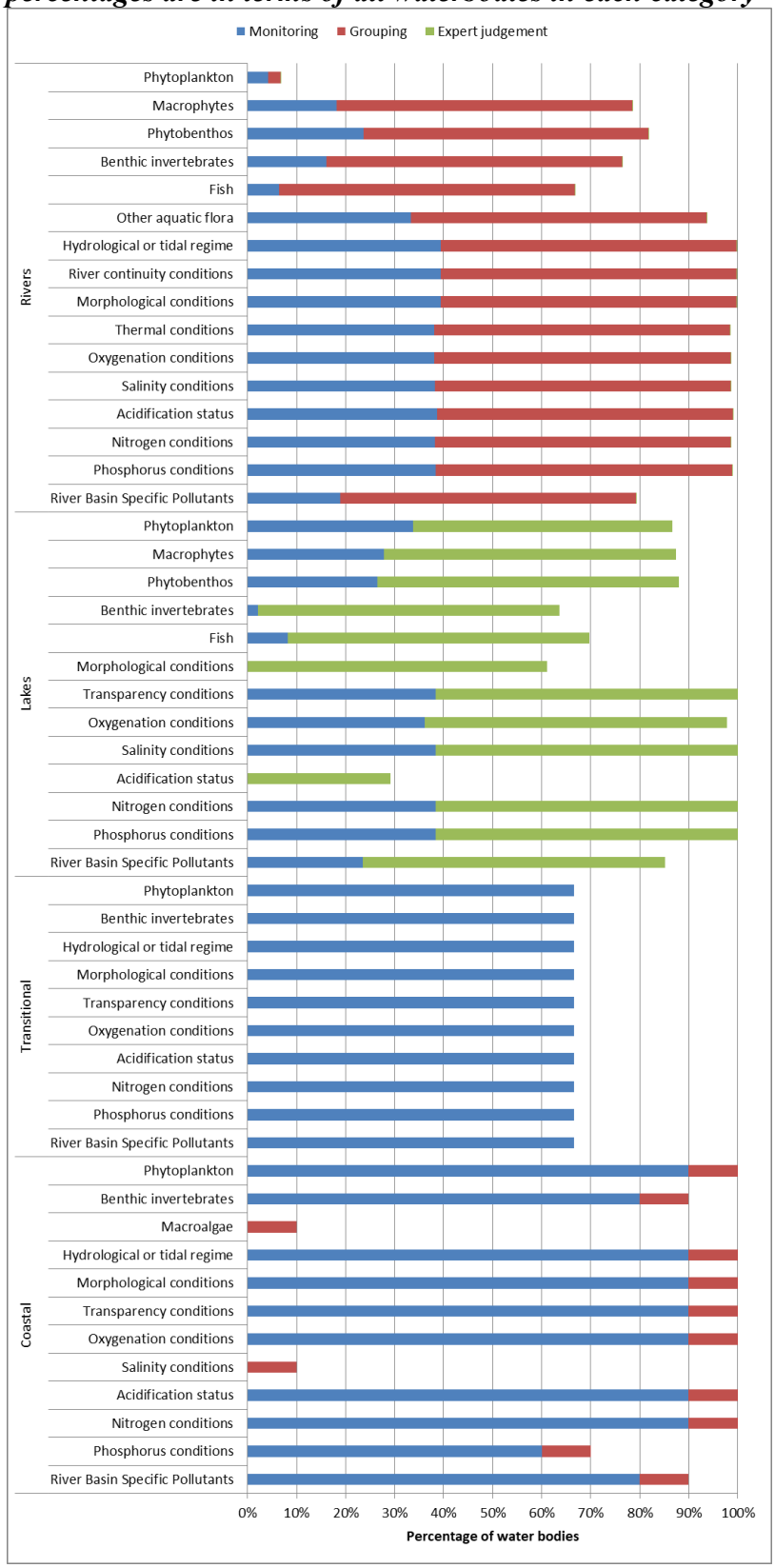
Source: Member State reports to WISE

The hydromorphological quality elements were not classified in 39% of lake water bodies (Figure 3.9). River Basin Specific Pollutants were not used in the classification of 15, 21, 10 and 33% of lakes, rivers, coastal and transitional waters respectively. At least one biological

quality element and also physicochemical quality elements were monitored in almost all water bodies in all water categories.

The classification of the individual quality elements is illustrated in Figure 3.10. In transitional waters, the classification of all quality elements was based on monitoring, while for rivers and lakes 60% were classified based on grouping (rivers) or expert judgement (lakes). Monitoring results were primarily used in coastal waters with grouping also being used for some quality elements.

Figure 3.10 Basis of the classification of ecological status/potential in Poland. The percentages are in terms of all waterbodies in each category



Source: WISE electronic reporting

Assessment methods and classification of biological quality *elements*

Assessment methods were complete for all biological quality elements in all water categories and RBDs (Legal Ordinance from the Ministry of Environment in 2011, included in the classification guidance of the Chief Inspectorate for Environmental Protection, and intercalibrated in 2013). All the biological quality elements with methods developed were used for classification in all water categories and RBDs (however, a large proportion of rivers and lakes were assessed based on grouping or expert judgement, see above). The fish methods for rivers and lakes were not intercalibrated in 2013 (ex-ante information). Further information on the single indices used to classify the different biological quality elements in rivers are given in section five of the RBMP. Section five explains how the objectives have been set for different types of water body.

A check of the Intercalibration Official Decision from 2013[37] revealed further gaps for coastal waters, as only the phytoplankton method was intercalibrated, while for transitional waters none of the biological quality elements were intercalibrated.

In the 2018 Intercalibration Decision[38], most of the gaps were closed, but there were still some biological methods that had not been intercalibrated: macroalgae and angiosperms in coastal waters, benthic invertebrates in lakes and fish and benthic invertebrates in transitional waters[39].

These gaps mainly correspond to the gaps in the reported quality element classification, where coastal water macroalgae were unknown in most water bodies, angiosperms were listed as not applicable, transitional waters aquatic flora were missing or not applicable (in spite of a recently intercalibrated method for macrophytes) and transitional waters, where fish was unknown in all water bodies.

Poland subsequently stated that macrophytes and angiosperms are assessed in the water bodies where they exist in natural conditions, i.e. in two transitional and one coastal water body. The Review Panel of the Common Implementation Strategy Working Group on Ecological Status accepted in 2014 the Polish justification not to perform intercalibration for macrophytes and angiosperms for type BC7.

[37] 2013/480/EU: Commission Decision of 20 September 2013 establishing, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, the values of the Member State monitoring system classifications as a result of the intercalibration exercise and repealing Decision 2008/915/EC (notified under document C(2013) 5915) Text with EEA relevance https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013D0480

[38] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018D0229&rid=2

[39] Poland subsequently stated that the method for benthic invertebrates in lakes would be autointercalibrated in 2018.

The recently intercalibrated class boundaries for phytoplankton chlorophyll in the Vistula lagoon are in the hypereutrophic range with a High-Good boundary of 33 micrograms per litre and a Good-Moderate boundary of 42 micrograms per liter. The scientific basis for those boundaries should be explained.

Poland subsequently stated that though the intercalibrated values of chlorophyll-a are high, they are the same as used in Lithuania and have been incorporated in the Commission Decision on intercalibration.

Intercalibration of biological assessment methods and national classification systems

A large proportion of national river types were not linked to any intercalibration type, and many lake types were linked to two different intercalibration types (shallow and very shallow lakes), which have very different class boundaries for several biological quality elements (e.g. phytoplankton). Thus, it is unclear which class boundaries were used for these national types. From the ex-ante documents, fish methods for rivers and lakes were not intercalibrated in time for the second RBMPs, but have since been successfully intercalibrated (2018 intercalibration Official Decision[40]). For other non-intercalibrated biological assessment methods, see above.

Poland subsequently stated that the methodologies were intercalibrated as a whole, not just in a section corresponding to the intercalibration types: so if a given national type does not correspond to any of the intercalibration types, the methodology of its classification using a given biological element is developed in the same way as for types corresponding to intercalibration types.

Assessment methods for hydromorphological quality elements

Hydromorphological methods were developed for all quality elements in all water categories. There was no information on the water bodies directly monitored for these quality elements[41], although approximately 40% of the rivers were reported to be classified based on monitoring and the rest based on grouping. Thus, it is not clear how the hydromorphological assessment in rivers was done. For lakes, all the hydromorphological quality element assessments were based on expert judgement and none on monitoring. For the two saline water categories, the

[40] Commission Decision (EU) 2018/229 of 12 February 2018 establishing, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, the values of the Member State monitoring system classifications as a result of the intercalibration exercise and repealing Commission Decision 2013/480/EU (notified under document C(2018) 696)Text with EEA relevance. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018D0229

[41] Poland subsequently stated that hydromorphological quality elements are monitored and the fact they were not reported in the electronic reports to WISE as being monitored was a probable error.

hydromorphological quality elements were not directly monitored, but were nevertheless reported to be classified mainly based on monitoring.

The weaknesses in assessing hydromorphological quality elements and fish in rivers are a cause for concern given the existing plans for changes to river morphology to improve navigation conditions.

Assessment methods for general physicochemical quality elements

Physicochemical standards were set for all general physicochemical quality elements for all water categories required by the WFD. These were, however, reported as quite wide ranges of values for each parameter, which may reflect the need to apply different boundary values for different types of water bodies. The RBMP states that threshold values for the general physicochemical parameters were changed by the Ordinance of the Minister of the Environment of 22 October 2014 on the method of classification of the surface water bodies. The general physicochemical standards for nutrients were reported to be related to the sensitive biological quality elements, but the upper part of the ranges for both phosphorus and nitrogen are too high to support the nutrient sensitive biological quality elements (up to 0.5 milligrams per litre for Total-phosphorus and up to 5 milligrams per litre for nitrate). The use of the same ranges of nutrient standards for all water categories (total nitrogen range 0.27-8.2 milligrams per litre and total phosphorus range 0.03-0.51 milligrams per litre) raises concerns that these may still represent the old classification system before the WFD.

Poland subsequently stated that the classification system for the general physicochemical quality elements changed in 2016. Since then physicochemical quality elements are related to biological elements classification (macrophytes and phytobenthos). The new standards were adopted in the RMBP for 2016-2021 as environmental objectives. The new standards are being developed according to the new CIS guidance document and with the use of the toolkit prepared in 2017.

Selection of River Basin Specific Pollutants and use of Environmental Quality Standards

River Basin Specific Pollutants were selected based on occurrence in water bodies at risk of failing their objectives due to emissions from wastewater, industry and agriculture (Nitrate

Vulnerable Zones under the Nitrates Directive[42] and sensitive areas under the Urban Waste Water Treatment Directive[43]).

Environmental Quality Standards were reported in WISE for 25 substances (mostly metals and a few organic pollutants), all only for water. Poland mentioned however that 24 River Basin Specific Pollutants have been identified. The difference may result from a reporting mistake: phenols have been reported with two different CAS numbers, but with the same Environmental Quality Standards. None of the Environmental Quality Standards were derived in accordance with the 2011 Technical Guidance Document No 27[44].

River Basin Specific Pollutants were classified in approximately 80% of all water bodies in all the relevant water categories in all the RBDs. Some 20-30% were based on monitoring in rivers and lakes and 70-100% based on monitoring in transitional or coastal waters. Exceedances were given for some substances (5 metals, fluorine and two organic pollutants, phenols and oil fractions) in the Vistula and Oder RBDs, but not in the other RBDs. It is unclear why so few organic pollutants were identified, and also why there was no information about exceedances in the other RBDs.

The analytical methods used for all of the 25 substances for which standards have been set meet the minimum performance criteria laid down in Article 4.1 of the Quality Assurance / Quality Control Directive (2009/90/EC) for the strictest standards applied[45].

Overall classification of ecological status (one-out, all-out principle)

Poland reported that the one-out, all-out principle was used. However, the details of the combination rules for the different groups of quality elements were not reported.

[42] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:31991L0676

[43] Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0271

[44] https://circabc.europa.eu/sd/a/0cc3581b-5f65-4b6f-91c6-433a1e947838/TGD-EQS%20CIS-WFD%2027%20EC%202011.pdf

[45] Directive 2009/90/EC of 31 July 2009 laying down, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, technical specifications for chemical analysis and monitoring of water status http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1524565750309&uri=CELEX:32009L0090

3.2 Main changes in implementation and compliance since the first RBMPs

There was a significant reduction in the number of operational monitoring sites between the first and second RBMPs in all four water categories. Proportionally the largest decrease was in transitional waters (71%), followed by lakes (46%), coastal waters (33%) and rivers (14%).

There were also significant reductions in the number of surveillance monitoring sites from the first to the second RBMPs, with no sites in transitional and coastal waters in the second RBMPs, in contrast to the first RBMPs when 16 sites and 14 sites were monitored respectively. There were major reductions in the number of lake and river surveillance monitoring sites from the first to the second RBMPs, corresponding to 45% (from 581 to 322 sites) for lakes and 35% (from 523 to 338 sites) for rivers.

The decrease in the number of monitoring sites in all the water categories should be explained by the Polish WFD authorities, also taking into consideration that the mean size of Polish rivers (16-43 km in the different RBDs) and especially transitional waters (115-295 km^2) (table two in chapter two above) are much higher than the European Union average being 13 km for rivers and 19 km^2 for transitional waters (European Environment Agency State of Environment report, table 1.1). For transitional waters, the number of operational monitoring sites is the same as the number of water bodies, indicating that the very large water bodies may only have one monitoring site in each water body. Also for rivers, the representativeness of the monitoring sites relative to the large mean size of the river water bodies should be clarified.

There has been some progress since the first RBMPs concerning the biological quality elements that have been included in the monitoring programmes: phytobenthos and benthic invertebrates are now monitored in lakes. Otherwise, most of the shortcomings in the first RBMPs are still present in the second RBMPs: no monitoring of fish was reported in any water category[46] and no monitoring of macroalgae, angiosperms and benthic fauna in transitional and coastal waters. There was also no monitoring of the hydromorphological quality elements in any water category.

The monitoring of River Basin Specific Pollutants was a major improvement compared to the first RBMPs, where these pollutants were not reported to be monitored.

There was a considerable improvement in the number and proportion of water bodies classified for ecological status, decreasing the proportion of unknowns from 80% to almost 0% from the

[46] Poland subsequently clarified that fish are monitored in transitional and coastal waters, although this is not required for the latter

first to the second RBMPs. At least one biological quality element and also physicochemical quality elements were monitored in almost all water bodies in all water categories. However, the confidence in classification was low for the large majority of water bodies, because it was based on grouping or expert judgment and only to a small extent on monitoring for most of the biological quality elements and all the hydromorphological quality elements in most of the water bodies (60%) in rivers and lakes.

It is not meaningful to assess the change in ecological status from the first to the second RBMPs, as 80% of the water bodies have been classified for the first time in the second RBMPs.

The RBMPs explain that classification methods have been developed for all the biological quality elements in all types and all the water categories. Most of the biological assessment methods have been successfully intercalibrated since the first RBMPs. The sensitivity to different impacts was reported with logical combinations of different biological indices and impacts. A large proportion of water bodies were classified with more biological quality elements than in the first RBMPs, and at least some River Basin Specific Pollutants were included in the classification. These are major improvements since the first RBMPs.

Hydromorphological and general physicochemical assessment methods have been developed for all the quality elements in all water categories, but it is unclear if they are in line with the WFD requirements. For the River Basin Specific Pollutants, environmental quality standard values were set for 25 substances, but the methodology is unclear, see below.

3.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation 2: *Where there are currently high uncertainties in the characterisation of the RBDs, identification of pressures, and assessment of status, these need to be addressed in the current RBMPs, to ensure that adequate measures can be put in place before the next RBMPs.*

  Assessment: Initial assessment of the RBMPs showed that there are still major gaps in Poland's monitoring programmes with fish not being monitored in the expected water categories; phytoplankton was the only biological quality element monitored in transitional and coastal waters; hydromorphological quality elements were not monitored

in any water category. However, there has been some progress in that phytobenthos and benthic invertebrates were monitored in lakes.

The quality elements monitored at each site were reported, but there are some apparent inconsistencies in the reported electronic data, especially concerning the monitoring sites in lakes, transitional and coastal waters in the first RBMPs.

Monitoring is not carried out in the Ucker RBD for surface waters as no surface water body has been delineated in this RBD.

However, after clarifications by Poland, many of these gaps were closed. The recommendation is partially fulfilled.

- Recommendation 3: *River Basin Specific Pollutants need to be identified, with clear information on how they have been selected, how and where they are being monitored, where there are exceedances and how such exceedances will be taken into account in the assessment of ecological status. It is important that there is an ambitious approach to combatting chemical pollution and that adequate measures are put in place. Apparently, there has been no monitoring of River Basin Specific Pollutants, at least none taken into account in the ecological status assessment.*

  Assessment: River Basin Specific Pollutants (mainly metals) have now been identified which represents a major improvement compared with the first RBMP. There is also information explaining how the River Basin Specific Pollutants have been selected, using emissions and risk assessment (it should be noted however that Environmental Quality Standard values have not been set according to the Technical Guidance no. 27). Information on monitoring and exceedances have been reported. However the information in WISE on the River Basin Specific Pollutants monitored don't seem entirely consistent with the information reported on the Environmental Quality Standards set for River Basin Specific Pollutants. Information on exceedances seems to be missing in WISE for certain RBDs. The one-out-all-out principle has been applied to assess ecological status.

  Significant progress has been made, the recommendation has partly been fulfilled.

- Recommendation: *Ensure that monitoring and subsequent assessments of the status of water bodies are carried out in compliance with the requirements prescribed by the WFD. In particular Poland should develop a coherent and comprehensive monitoring network under Article 8 WFD which enables the correct classification of all water*

bodies, monitor water bodies in line with the requirements of Annex V to the WFD and with adequate frequencies, and set reference conditions for all quality elements for all water bodies.

- Recommendation: *Further work is required to make the monitoring, assessment and classification of surface water and groundwater status fully compliant with the requirements of the WFD, Environmental Quality Standards and Groundwater Directives.*

  Assessment: Almost all water bodies in Poland were classified in the second RBMPs, which is a major improvement compared to the first RBMPs, when only 20% were classified. A large proportion of water bodies were classified for more biological quality elements than in the first RBMPs. The classification was reported with low confidence for most water bodies, probably due to the extensive use of expert judgement or grouping for classifying these quality elements in most lakes and river water bodies.

  Assessment methods are complete for all biological quality elements in all water categories and RBDs (Legal Ordinance from the Ministry of Environment in 2011, included in the classification guidance of the Chief Inspectorate for Environmental Protection, and intercalibrated in 2013). The sensitivity of several of the biological quality element methods to different impacts were reported with logical combinations of biological quality elements and impacts. All the biological quality elements with methods developed were used for classification in all water categories and RBDs (however, a large proportion of rivers and lakes were assessed based on grouping or expert judgement, see above).

  Further information on the single indices used to classify the different biological quality elements in rivers is given in section 5 of the RBMP. Section 5 explains how objectives were set for different types of water body.

  A check of the Intercalibration Official Decision from 2013 revealed further gaps for coastal waters, as only the phytoplankton method was intercalibrated, and for transitional waters, none of the biological quality elements were intercalibrated.

  From the ex-ante documents, fish methods for rivers and lakes were not intercalibrated in time for the second RBMPs, but have since been successfully intercalibrated (2018

intercalibration Decision[47]). In the 2018 Decision, most of the other gaps have also been closed, but there are still some biological methods that have not been intercalibrated.

Hydromorphological methods were developed for all quality elements in all water categories but not in all cases consistent with WFD and with shortcoming in their application.

Physicochemical standards were set for all the physicochemical quality elements for all water category required by the WFD. These were, however, reported as quite wide ranges of values for each parameter which may reflect the need to apply different boundary values for different types of water bodies.

In conclusion, the recommendations have been partly fulfilled.

[47] Commission Decision (EU) 2018/229 of 12 February 2018 establishing, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, the values of the Member State monitoring system classifications as a result of the intercalibration exercise and repealing Commission Decision 2013/480/EU (notified under document C(2018) 696)Text with EEA relevance.
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018D0229

Topic 4 Topic Monitoring, assessment and classification of chemical status in surface water bodies

4.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

4.1.1 Monitoring of chemical status in surface waters

Monitoring sites and monitored water bodies used for monitoring of chemical status

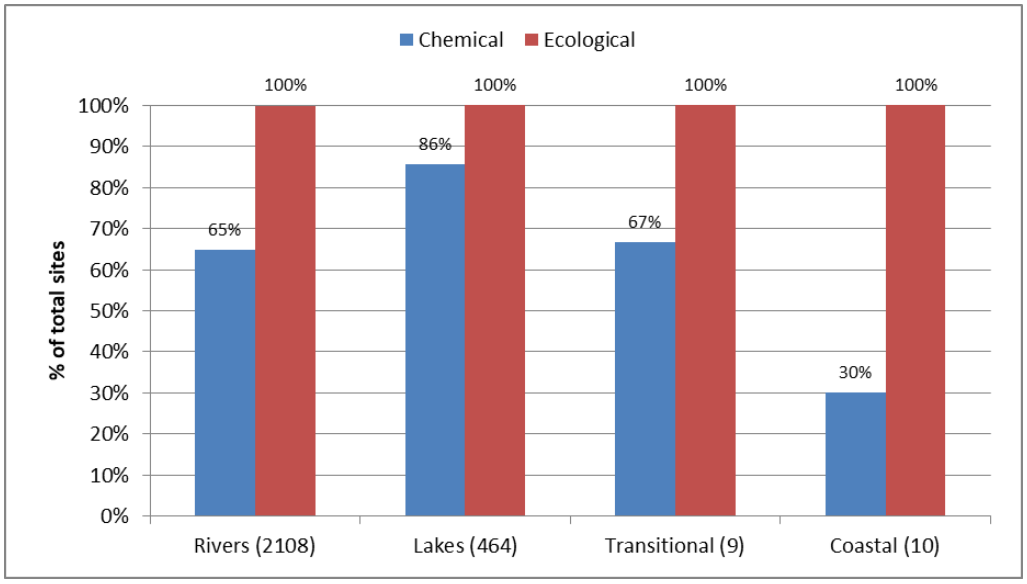
Member States implement surveillance and operational monitoring programmes in accordance with the requirements of the WFD and of the EQS Directive, for the assessment of ecological status/potential and chemical status.

Surveillance monitoring programmes should allow Member States to supplement and validate the impact assessment procedure, to efficiently and effectively review the design of their monitoring programmes, and to assess the long-term changes in natural conditions and those resulting from widespread anthropogenic activity. For operational purposes, monitoring is required to establish the status of waterbodies identified as being at risk of failing to meet their environmental objectives, and to assess any changes in the status of such waterbodies resulting from the PoM.

Section 3.1.1 of this report summarises the characteristics of the surveillance and operational monitoring programmes in Poland for the second RBMPs.

Figure 4.1 summarises the proportion of sites used for the monitoring of chemical status in lakes and rivers for the second RBMPs. In this figure, no distinction is made between sites used for surveillance and/or operational purposes.

Figure 4.1 Proportion of sites used for monitoring of chemical status and, for comparison, ecological status, in Poland. The number in parenthesis next to the category is the total number of monitoring sites irrespective of their purpose



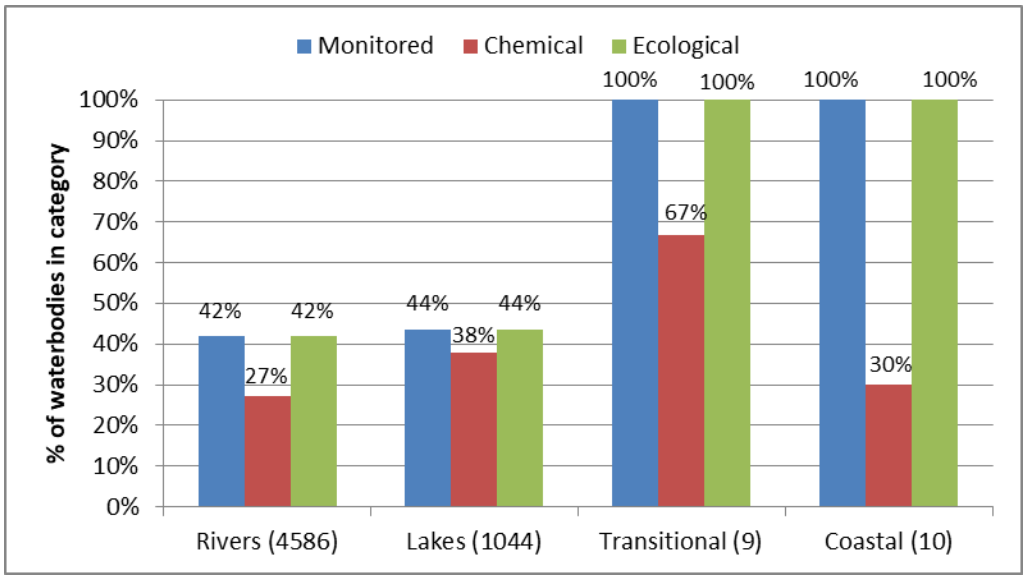
Source: WISE electronic reporting

Figure 4.1 shows that a high proportion of the lake monitoring sites (85%) and two-thirds of the river and transitional water monitoring sites were used for monitoring chemical status. Only 30% of coastal water monitoring sites (three sites) were monitored for chemical status. Territorial waters were neither monitored nor classified for chemical status. More detailed information can be found on the website of the European Environment Agency[48].

Figure 4.2 summarises the proportion of water bodies monitored for chemical status for the second RBMPs. In this figure, no distinction is made between sites used for surveillance and/or operational purposes. Also given is the proportion of water bodies monitored for any purpose and, for comparison, those for ecological status. Figure 4.2 shows that according to the information reported to WISE, 30% of coastal water bodies were monitored for chemical status. However, Poland subsequently clarified that 50% of coastal water bodies were monitored for chemical status (the lower proportion identified here is likely to be the result of a reporting mistake).

[48] https://www.eea.europa.eu/publications/state-of-water

Figure 4.2 ***Proportion of total water bodies in each category which are monitored, monitored for chemical status and monitored for ecological status, in Poland. The number in parenthesis next to the category is the total number of water bodies in that category***



Source: WISE electronic reporting

Almost all lake, transitional and coastal water bodies failing to achieve good chemical status were reported to be monitored across Poland. Rivers failing to achieve good chemical status were less well monitored, ranging from 14% to 40% across RBDs with the exception of the Elbe RBD, where the only river water body failing to achieve good chemical status was monitored.

Long-term trend monitoring and monitoring of Priority substances in water, sediment and biota

Monitoring for status assessment

Requirements

Article 8.1 of the WFD requires Member States to establish monitoring programmes in order to provide inter alia a coherent and comprehensive overview of water status within each RBD. The amount of monitoring undertaken in terms of priority substances, frequency and numbers of sites should be sufficient to obtain a reliable and robust assessment of status. According to the EQS Directive (version in force in 2009), mercury, hexachlorobenzene and hexachlorobutadiene have to be monitored in biota for status assessment, unless Member

States derived a standard for another matrix, which is at least as protective as the biota standard.

Spatial coverage

The Swieza, Jarft and Ucker RBDs did not report any monitoring of priority substance at site level. No surface water body was identified in the Ucker RBD, which explains that no priority substances were monitored in this RBD. This RBD will consequently not be referred to in the rest of this chapter. In the other two RBDs, it seems that no monitoring of priority substances was performed[49].

All the other RBDs reported having monitored all 41 priority substances. However, coastal waters were not monitored at all in the Vistula RBD.

Poland have not reported monitoring of mercury, hexachlorobenzene or hexachlorobutadiene in biota for status assessment.[50]

Frequencies

The WFD indicates that, for the surveillance and operational monitoring of Priority Substances in water, the frequency of monitoring should be at least monthly for one year during the RBMP cycle and at least monthly every year, respectively. Monitoring in biota for status assessment should take place at least once every year according to the EQS Directive. In all cases greater intervals can be applied by Member States if justified on the basis of technical knowledge and expert judgement.

Monitoring frequencies were reported for 37 Priority Substances at site level in all the RBDs apart from the Swieza and Jarft RBD[51]. Monitoring frequencies ranged from one to 12 times per year, and from once per cycle to every year. The sampling frequencies meet the recommended minimum frequencies for operational and surveillance monitoring in some but not all sites[52].

[49] Poland subsequently confirmed that priority substances were not monitored in 2010-2013 in the Swieza RBD.

[50] Poland subsequently stated that monitoring in biota is in place from 2016 so there was no data available for the second RBMPs. This monitoring will be performed for 11 substances, in accordance with Directive 2013/39/EU.

[51] Poland did not report to WISE the monitoring frequencies for all the priority substances monitored.

[52] Poland subsequently clarified that this was due to limitations of analytical research methodologies, weather conditions that prevented sampling (e.g. floods, droughts, ice cover), and limitations in achieving the correct analytical measurement quality.

Monitoring for long-term trend assessment

Requirements

Article 3.3 of the EQS Directive (version in force in 2009) requires Member States to monitor 14 priority substances[53] that tend to accumulate in sediment and/or biota, for the purpose of long-term trend assessment. Monitoring should take place at least once every three years, unless technical knowledge and expert judgment justify another interval.

Spatial coverage

According to the RBMPs, monitoring was planned in sediments in lakes and rivers, at frequencies at or below the recommended minimum frequency. Poland subsequently mentioned that some priority substances have been monitored in sediment (some, such as PAH, mercury, lead and cadmium, have been monitored since 1998) but the results were not reported. It is not clear whether all relevant priority substances have been monitored, and what the spatial coverage and temporal resolution are.

Monitoring of Priority Substances that are discharged in each RBD

Annex V of the WFD states, in Section 1.3.1 (Design of surveillance monitoring), that "Surveillance monitoring shall be carried out for each monitoring site for a period of one year during the period covered by a river basin management plan for [*inter alia*]: priority list pollutants which are discharged into the river basin or sub-basin." Section 1.3.2 (Design of operational monitoring) of the Directive states that "In order to assess the magnitude of the pressure to which bodies of surface water are subject Member States shall monitor for those quality elements which are indicative of the pressures to which the body or bodies are subject. In order to assess the impact of these pressures, Member States shall monitor as relevant [*inter alia*]: all priority substances discharged, and other pollutants discharged in significant quantities."

Member States are therefore required to monitor all Priority Substances which are discharged into the river basin or sub-basin.

In the Swieza and Jarft RBDs, no substance was identified as discharged, and no substance was monitored. In the other seven RBDs, all priority substances were monitored, including those

[53] Anthracene, brominated diphenylether, cadmium, C10-13 chloroalkanes, DEHP, fluoranthene, hexachlorobenzene, hexabutadiene, hexachlorocyclohexane, lead, mercury, pentachlorobenzene, PAH, Tributyltin.

assessed as discharged (the Ucker RBD is not considered in this part of the assessment as no surface water body has been designated in this RBD).

Performance of analytical method used

Poland reported that for all 41 Priority Substances, the analytical methods used meet the minimum performance criteria laid down in Article 4(1) of Directive 2009/90/EC for the strictest standard applied.

The method of dealing with measurements of Priority Substances lower than the limit of quantification is stated to be as specified in Article 5 of Directive 2009/90/EC.

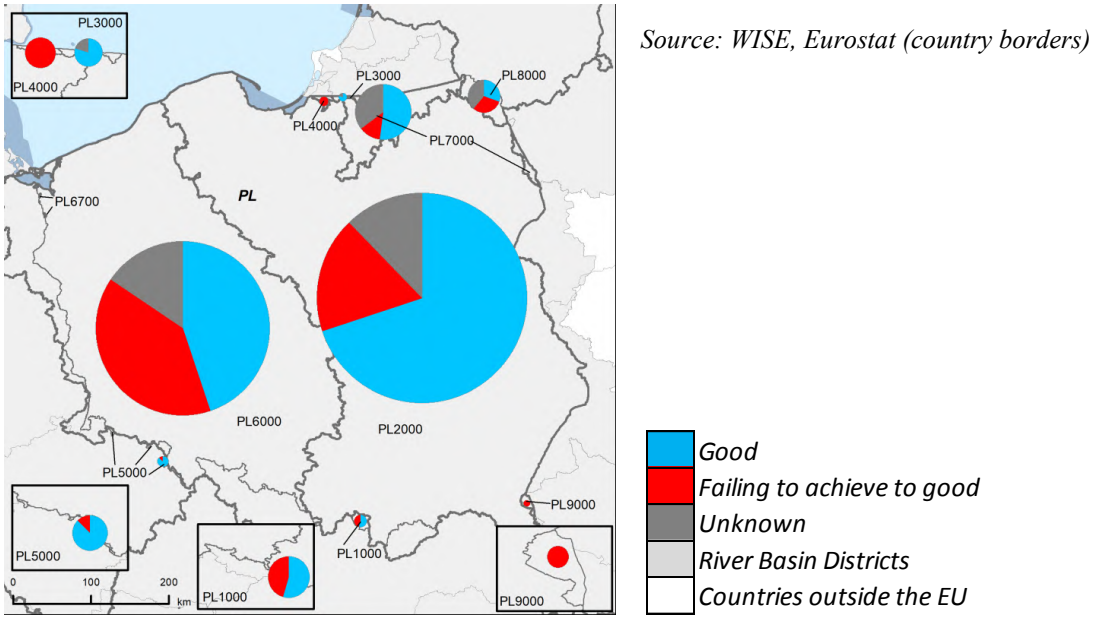
4.1.2 Chemical Status of surface water bodies

Member States are required to report the year on which the assessment of chemical status is based. This may be the year that the surface water body was monitored. In case of grouping this may be the year in which monitoring took place in the surface water bodies within a group that are used to extrapolate results to non-monitored surface water bodies within the same group. All assessments across Poland were conducted between 2010 and 2013.

The chemical status of surface water bodies in Poland for the second RBMPs is illustrated in Map 4.1.. This is based on the most recent assessment of status. In Poland overall, 59% of surface water bodies were at Good chemical status, 26% were failing to achieve Good status and 15% were classified as Unknown.

Map 4.1 Chemical status of surface water bodies in Poland based on the most recently assessed status of the surface water bodies

Note: Standard colours based on WFD Annex V, Article 1.4.3.



Source: WISE, Eurostat (country borders)

The chemical status of lakes and rivers in Poland for the first and second RBMPs is given in Table 4.1. More information on the chemical status in each RBD and water category can be found on the website of the European Environment Agency[54].

Table** 4.1 **Chemical status of surface water bodies in Poland for the second and first RBMPs. Note: the number in parenthesis next to the water category is the number of water bodies. Note: Chemical status assessment is based on the standards laid down in EQS Directive 2008/105/EC (version in force on 13 January 2009). Some Member States did not implement the Directive in the first RBMPs as the transposition deadline was in July 2010, after the adoption of the first RBMPs

Category	Good		Failing to achieve good		Unknown	
	Number	%	Number	%	Number	%
second RBMP						
Rivers (4586)	3134	68%	1447	32%	5	0%
Lakes (1044)	192	18%	35	3%	817	78%
Transitional (9)	2	22%	4	44%	3	33%
Coastal (10)	3	30%	3	30%	4	40%
Total (5649)	3331	59%	1489	26%	829	15%
first RBMP						
Rivers (4568)	88	2%	272	6%	4226	92%
Lakes (1038)	64	6%	7	1%	967	93%
Transitional (9)					9	100%
Coastal (10)					10	100%
Total (5643)	152	3%	279	5%	5212	92%

Overall, between the two cycles of RBMPs there was an increase in the proportion of surface water bodies with good chemical status from 3% to 59%. Similar increases occurred across all water body types (artificial, heavily modified and natural). There was also an overall increase in the proportion of surface water bodies failing to achieve good chemical status between the two cycles of RBMPs, from 5% to 26%. The increases in the proportions of surface water bodies with good or failing to achieve good chemical status can be explained by the significant reduction in the proportion of surface water bodies with unknown chemical status, from 92% in the first RBMPs down to 15% in the second RBMPs.

[54] https://www.eea.europa.eu/publications/state-of-water

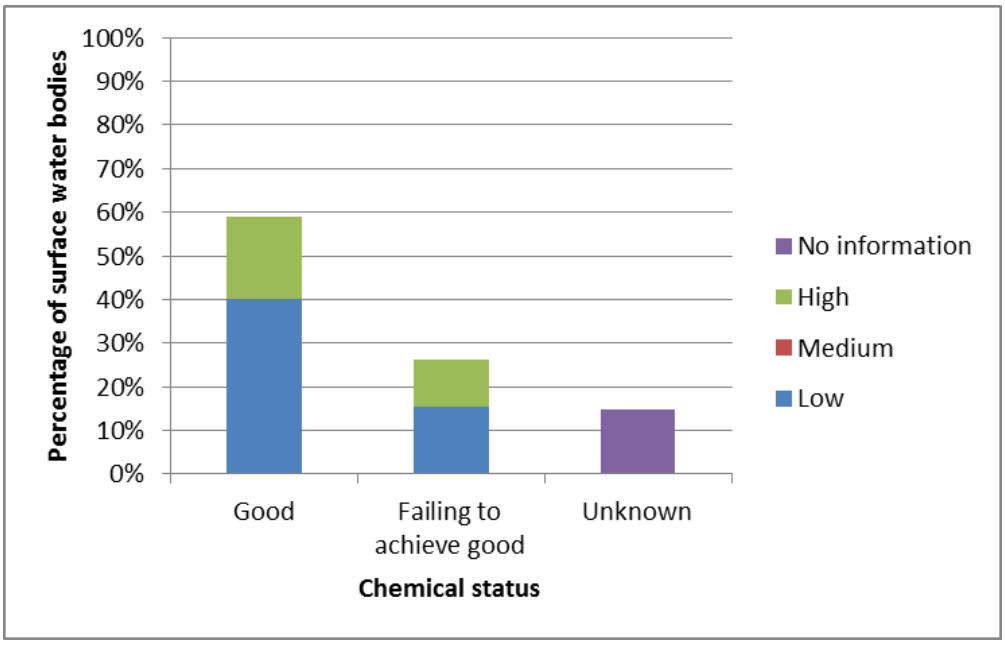
Grouping was used to classify a significant proportion of the water bodies, in particular for rivers (grouping was used for 67% to 96% of river water bodies depending on the RBD). In the Swieza RBD all classifications were based on grouping and expert judgment, as no monitoring was performed. Monitoring was used to classify all lakes in the Vistula, Oder, Pregolya, and Nemunas RBD, all transitional waters in the Vistula and Oder RBDs and all coastal waters in the Vistula RBD.

The RBMPs provided explanations on the grouping methodology, however it was not entirely clear whether these concerned chemical status or ecological status or both. For rivers, the status of water bodies classified on the basis of monitoring results was transferred to non-monitored water bodies, provided those waterbodies presented similar characteristics. For lakes, expert judgement was used and was based on the analysis of pressures.

However, there seem to be some limitations in the assessment of pressures, as "unknown pressures" and "no significant pressure" are reported for respectively 58% and 27% of the water bodies failing to achieve good chemical status. Poland highlighted that measures are planned in the Programmes of measures aiming at a more thorough identification of the pressures and their impacts on status.

Figure 4.3 shows the confidence in the classification of chemical status for the second RBMPs. Confidence in the classification of chemical status for the first RBMPs was not reported. Most of the water bodies classified were associated with a low level of confidence, and the rest with a high level of confidence. All lakes, transitional and coastal waters were classified with high confidence but that was the case for only about 30% of rivers.

Figure 4.3 Confidence in the classification of chemical status of surface water bodies in Poland based on the most recently assessed status/potential



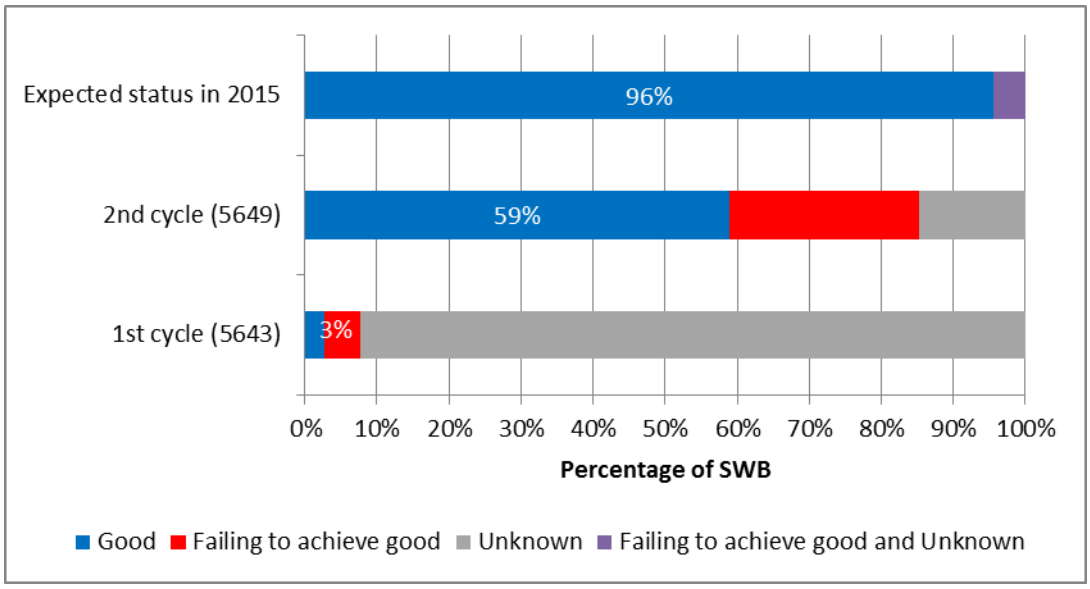
Source: WISE electronic reporting

The Polish Chief Inspectorate for Environmental Protection (CIEP) adopted the following guidelines for the determination of the level of confidence: 1) status based on 12 or more monitoring results have been assigned a high level of confidence; 2) status based on 11 or 10 monitoring results were assigned a medium confidence level; 3) status based on less than 10, but at least four results were assigned a low confidence level (when less than four monitoring results were available for one substance, these results were not considered in the assessment of status).

Figure 4.4 compares the chemical status of surface water bodies in Poland for the first RBMPs with that for the second RBMPs (based on the most recent assessment of status) and that expected by 2015. There is a substantial difference in the proportion of water bodies in good status in the second RBMP, and that expected by 2015.

The assessment of chemical status for the second RBMPs was expected to be based on the standards laid down in EQS Directive 2008/105/EC (version in force on 13 January 2009). Some Member States did not implement the Directive in the first RBMPs as the transposition deadline was in July 2010, after the adoption of the first RBMPs.

Figure 4.4 ***Chemical status of surface water bodies in Poland for the second RBMPs, for the first RBMPs and expected in 2015. The number in the parenthesis is the number of surface water bodies for both RBMPs. Note the period of the assessment of status for the second RBMPs was 2010 to 2013. The year of the assessment of status for first RBMPs is not known***



Source: WISE electronic reporting

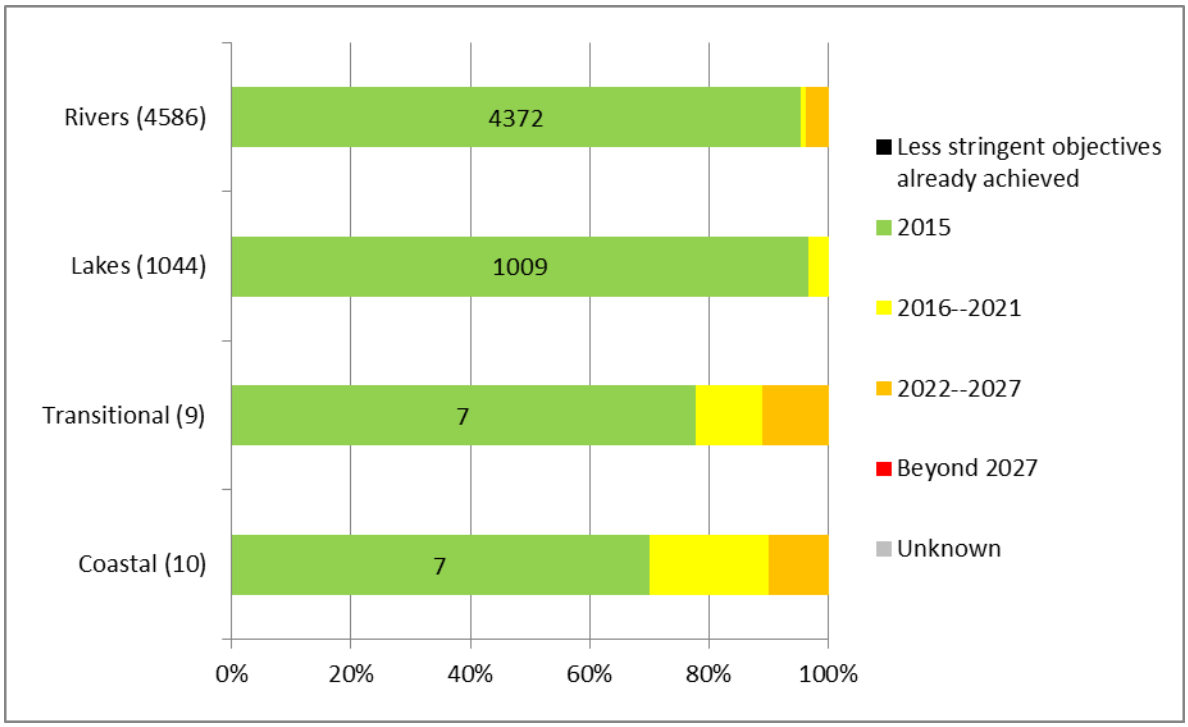
Directive 2013/39/EU amended the EQS Directive. In particular, it sets more stringent environmental quality standards for seven substances[55]. Poland reported that no deterioration was caused by the new standards.

Good chemical status should be reached by 2021 in relation to the revised environmental quality standards, unless Member States apply exemptions under WFD article 4(4) or less stringent objectives under WFD article 4(5).

The expected date for the achievement of good chemical status is shown in Figure 4.5. Good chemical status of surface water bodies was expected to be achieved by the end of the third cycle in all of the RBDs. No data on the expected achievement of good status was provided in the first RBMPs.

[55] Anthracene, Brominated diphenylether, Fluoranthene, Lead and its compounds, Naphthalene, Nickel and its compounds, Polyaromatic hydrocarbons (PAH)

Figure 4.5 ***Expected date of achievement of good chemical status of surface water bodies in Poland. The numbers in parentheses are the numbers of water bodies in each category. Percentage of water bodies is represented cumulatively***



Source: WISE electronic reporting

Priority substances causing the failure of good chemical status

Member States were expected to report exceedances based on the revised, more stringent Environmental Quality Standards from Directive 2013/39/EU.

The substances causing the greatest number of water bodies to fail good chemical status were benzo(g,h,i)-perylene + indeno(1,2,3-cd)-pyrene, mercury, and cadmium. No information was provided for the Danube[56], Swieza or Jarft RBDs.

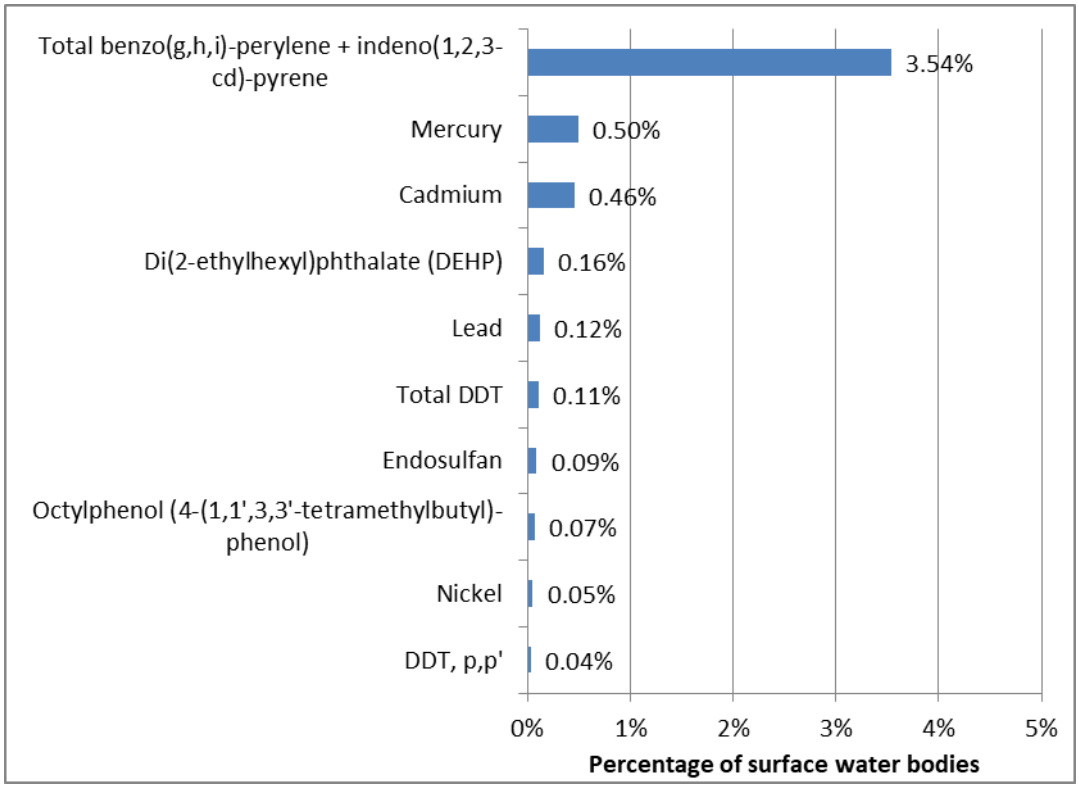
The "top-ten' substances are shown in Figure 4.6.

Overall for surface water bodies in Poland, the largest proportion of exceedances were for the annual average-Environmental Quality Standard for benzo(g,h,i)-perylene + indeno(1,2,3-cd)-pyrene. Exceedances of maximum acceptable concentration Environmental Quality Standards

[56] Poland subsequently clarified that surveillance monitoring was performed in the Danube RBD which included Priority Substances and therefore this may be an unitended reporting error.

were the greatest for mercury and its compounds. In terms of exceedance of both standards, the largest proportion was for benzo(g,h,i)-perylene + indeno(1,2,3-cd)-pyrene.

Figure 4.6 The top-10 Priority Substances causing failure to achieve good chemical status in surface water bodies in Poland



Source: WISE electronic reporting

Ubiquitous persistent, bioaccumulative and toxic Priority Substances

According to article 8(a) of the EQS Directive[57], eight priority substances and groups of priority substances are behaving like ubiquitous, persistent, bioaccumulive and toxic substances[58]. These substances are generally expected to cause widespread exceedances, and their emissions can be challenging to tackle (e.g. due to long-range atmospheric transport and deposition). In order to show the progress made in tackling other priority substances, Member States have the possibility to present the information related to chemical status separately for these substances. When all 41 priority substances are taken into account, about a quarter of water bodies are failing to achieve good chemical status, however this falls to a few percent when the ubiquitous, persistent, bioaccumulative and toxic substances are omitted. This is

[57] Amended by Directive 2013/39/EU

[58] Brominated diphenylether, Mercury and its compounds, Polyaromatic hydrocarbons (PAH), Tributyltin, PFOS, dioxins, hexabromocyclodecane and heptachlor

illustrated in the 2018 State of Water report of the European Environment Agency[59]. The absence of monitoring in biota may underestimate the impact of this substance on the chemical status.

Priority substances used in the assessment of chemical status compared to those monitored

For all RBDs except the Swieza and the Jarft RBDs, 41 Priority Substances were reported to be monitored and used in the status assessment. For these RBD, all 41 substances were reported to be used in the status assessment but not monitored.

Application of alternative environmental quality standards for water, biota and sediment

According to the EQS Directive, Member States may opt to apply environmental quality standards for another matrix than the one specified in the Directive for a given substance. If they do so, they have to ensure the environmental quality standard they set in the other matrix (or matrices) offers at least the same level of protection as the standard established in the Directive.

Poland have applied all of the Environmental Quality Standards laid down in Annex I of the EQS Directive. No alternative and/or additional standards for particular Priority Substances have been applied.

Use of mixing zones

Article 4 of the EQS Directive provides Member States with the option of designating mixing zones adjacent to points of discharge in surface waters. Concentrations of priority substances may exceed the relevant environmental quality standard within such mixing zones if they do not affect the compliance of the rest of the surface water body with those standards. Member States that designate mixing zones are required to include within their RBMPs a description of the approaches and methodologies applied to define such zones, and a description of the measures taken to reduce the extent of the mixing zones in the future. Mixing zones have not been designated in Poland.

[59] https://www.eea.europa.eu/publications/state-of-water (p40-41 of the report). Also available in a more interactive format at : https://tableau.discomap.eea.europa.eu/t/Wateronline/views/WISE_SOW_SWB_Chemical_Status_Maps/SWB_Failing_Good_Chemical_Status_RBD?iframeSizedToWindow=true&:embed=y&:showAppBanner=false&:display_count=no&:showVizHome=no

Background Concentrations and Bioavailability

The EQS Directive stipulates that Member States have the possibility, when assessing the monitoring results against the environmental quality standard, to take into account:

> (a) natural background concentrations for metals and their compounds, if they prevent compliance with the environmental quality standard, and;
>
> (b) hardness, pH or other water quality parameters that affect the bioavailability of metals.

Seven of the ten RBDs have taken into account natural background concentrations for metals where such concentrations prevented compliance.

Nine of the ten RBDs took into account bioavailability when assessing compliance for metals.

4.2 Main changes in implementation and compliance since the first RBMPs

Between the two RBMPs, there has been a net decrease in sites and surface water bodies monitored for operational purposes (a decrease of 592 monitoring sites and 24 water bodies). For surveillance monitoring the number of sites has decreased by 447 and the number of water bodies has decreased by 179. However, no specific information could be found in the RBMPs on the changes in the monitoring programmes since the first RBMP.

Between the two RBMPs, there was an increase in the proportion of surface water bodies with good chemical status from 3% up to 59%, and similar increases occurred across all water body types (artificial, heavily modified and natural). There has also been an overall increase in proportion of surface water bodies failing to achieve good chemical status, from 5% to 26%.

These changes result from a significant reduction in the proportion of surface water bodies with unknown chemical status, from 92% in the first RBMPs down to 15% in the second RBMPs. The RBMP provided no specific information on the reasons for these changes.

Poland reported no improvement in status for any Priority Substance in any water body since the first RBMPs.

4.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation: *The monitoring of Priority Substances should be sufficient to allow chemical status to be determined for a much higher proportion of water bodies. The correct statistical calculations should be done when assessing compliance with the maximum annual concentrations. The plans should make clear which Priority Substances are being monitored where, and in which matrix. Mercury, hexachlorobenzene and hexachlorobutadiene should be monitored in biota unless an equally protective Environmental Quality Standard has been established in water. The trend monitoring apparently being carried out in sediment or biota should include the substances in EQS Directive Article 3(3) and will need to be reflected in the next RBMP.*

  Assessment: Between the two RBMPs there was a very significant reduction in the proportion of surface water bodies with unknown chemical status, from 92% down to 15%. A significant proportion of water bodies are however still classified with a low confidence. This results from the reduced sampling frequencies sometimes implemented (frequencies lower than the recommended minimum frequency), leading to more uncertainty in the assessment. This low level of confidence may also result from the use of grouping and expert judgment, based on the assessment of pressures, to classify non monitor water bodies (70% of all water bodies are not monitored). All priority substances (so including those discharged) are monitored in seven RBDs. On the contrary two RBDs didn't monitor any priority substance[60].

  No information could be found on the statistical calculations performed when assessing compliance with the maximum annual concentrations. However, Poland subsequently clarified that the 90th percentile of the measured concentrations was compared with the environmental quality standard when twelve monitoring results were available. When there were less than twelve monitoring results, the highest measured concentration was compared with the standard. Poland clarified that this aimed at avoiding the high statistical uncertainty that would occur when calculating a percentile on a small dataset.

  Seven of the ten RBDs provided information on which priority substances were monitored where, and in which matrix, for status assessment. Three RBD did not provide such information – one doesn't have any surface water bodies, and it seems that no priority substance was monitored in any of the other two. The information reported on trend monitoring was unclear.

  No monitoring in biota was performed for status assessment for the second RBMP.

[60] As mentioned above, the Ucker RBD doesn't have any surface water body and therefore is not included in the analysis.

No trend monitoring was reported to WISE, however it seems that some monitoring in sediment took place. It is however unclear whether all relevant substances were monitored, and what the spatial coverage and temporal resolution were.

This recommendation has been partially fulfilled.

- Recommendation: *Where there are currently high uncertainties in the characterisation of the RBDs, identification of pressures, and assessment of status, these need to be addressed in the current cycle, to ensure that adequate measures can be put in place before the next cycle.*

  Assessment: See assessment for the recommendation above. In addition, there seem to be some limitations in the assessment of pressures, as a majority of the water bodies failing to achieve good status are subject to unknown pressures, and more than a quarter are identified as subject to no pressure.

  This recommendation has been partially addressed.

- *Ensure that monitoring and subsequent assessments of the status of water bodies are carried out in compliance with the requirements prescribed by the WFD. In particular Poland should develop a coherent and comprehensive monitoring network under Article 8 WFD which enables the correct classification of all water bodies, monitor water bodies in line with the requirements of Annex V to the WFD and with adequate frequencies, and set reference conditions for all quality elements for all water bodies.*

  Assessment: Addressed in the assessment of the two recommendations above. The recommendation has therefore been partially fulfilled.

- Recommendation: *Further work is required to make the monitoring, assessment and classification of surface water and groundwater status fully compliant with the requirements of the WFD, Environmental Quality Standard and Groundwater Directives. The biological quality elements should be fully intercalibrated at the EU level.*

  Assessment: Significant efforts have been made since the first RBMPs to classify a much larger proportion of water bodies. However there are still some limitations (low confidence in the assessment linked to reduce monitoring frequencies, limitations in the assessment of pressures which feeds into the expert judgment, absence of biota monitoring). This recommendation is partially fulfilled.

- Recommendation: *Put in place in the second cycle of RBMPs concrete actions to reduce the number of unknowns and to increase the percentage of water bodies in good chemical status.*

  Assessment: As stated above, there was a significant reduction in the proportion of surface water bodies with unknown chemical status, from 92% in the first RBMPs down to 15% in the second RBMPs. There was also a substantial increase in the proportion of water bodies in good chemical status, resulting from the classification of water bodies previously in unknown status (no improvement in status has been reported for any priority substance in any water body). Progress has therefore been made towards meeting the requirements of the recommendation. It is partially fulfilled.

Topic 5 Monitoring, assessment and classification of quantitative status of groundwater bodies

5.1 Assessment of implementation and compliance with WFD requirements in second RBMPs

5.1.1 Monitoring of quantitative status in groundwater

The total number of groundwater bodies in Poland is 178 (Table ***2.2***)[61]. 15 groundwater bodies were not subject to monitoring for quantitative status (Table 5.1). This means that 8% of groundwater bodies were not monitored. From a review of the Vistula RBMP information on whether grouping was applied was not found.

Table 5.1 Number of water bodies in Poland directly monitored and the purpose of monitoring

RBD	Total groundwater bodies directly monitored	Monitoring Purpose		
		CHE - Chemical status	QUA - Quantitative status	SUR – Surveillance monitoring
PL1000	2	2	2	
PL2000	94		92	94
PL4000	1	1	1	
PL5000	1	1	1	
PL6000	65		62	65
PL7000	2	2	2	
PL8000	2	2	2	
PL9000	1	1	1	1

Source: WISE electronic reporting

The number of groundwater bodies increased by 7% from 161 in the first RBMP to 178 in the second RBMPs but the total groundwater body area remained nearly the same. In fact, no groundwater body remained unchanged and all groundwater bodies had been re-delineated.

The number of groundwater bodies monitored for quantitative status increased from 145 of 161 (90%) in the first RBMPs to 163 of 178 (97%) in the second RBMPs[62]. The number of monitoring sites slightly increased from 828 in the first RBMPs to 836 in the second RBMPs

[61] Poland subsequently clarified that the number of groundwater bodies was 172. Poland stated the number 178 was reported as such due to the fact of counting subunits as groundwater-bodies (groundwater bodies shared by more than one River Basin District)

[62] Poland subsequently clarified that only five GWBs in Poland are not monitored – 106, 122, 123, 138, 139.

(Table 5.2, Table 5.3) .The single groundwater body in the Jarft RBD is now covered by quantitative monitoring (by one monitoring site).

Table 5.2 Proportion of groundwater bodies in Poland monitored for quantitative status

RBD	No of groundwater bodies with quantitative monitoring	Total No. groundwater bodies	% of total groundwater bodies monitored for quantitative status
PL1000	2	3	66.67%
PL2000	92	94	97.87%
PL4000	1	1	100.00%
PL5000	1	7	14.29%
PL6000	62	66	93.94%
PL7000	2	2	100.00%
PL8000	2	2	100.00%
PL9000	1	1	100.00%

Source: WISE electronic reporting

Table 5.3 Number of groundwater monitoring sites in Poland and their purpose

RBD	Total groundwater monitoring sites	Monitoring Purpose		
		CHE - Chemical status	QUA - Quantitative status	SUR - Surveillance monitoring
PL1000	5	5	5	
PL2000	678		488	679
PL3000	0			
PL4000	1	1	1	
PL5000	1	1	1	
PL6000	492		307	492
PL6700	0			
PL7000	20	19	15	
PL8000	20	18	18	
PL9000	2	1	1	1

Source: WISE electronic reporting

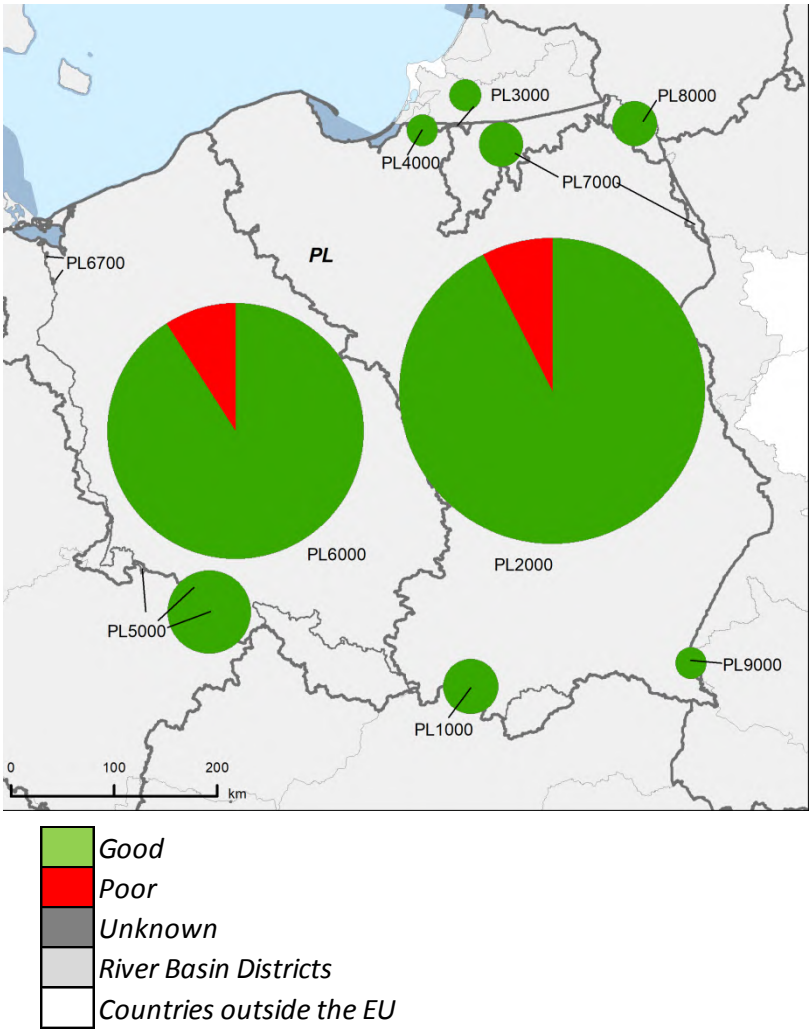
174 of 178 groundwater bodies were identified as Drinking Water Protected Areas, allocated in all RBDs where groundwater bodies were present[63].

[63] Poland subsequently clarified that 168 of 172 groundwater bodies were identified as Drinking Water Protected Areas.

5.1.2 Assessment and classification of quantitative status for groundwater

Map 5.1 displays the most recently assessed quantitative status of groundwater bodies. It shows that 165 of 178 groundwater bodies (93%) are of good quantitative status and 13 (7%) are failing good status (Figure 5.1)[64]. In terms of area this means that about 4% were failing good quantitative status. All groundwater bodies had and still have a clear status.

Map 5.1 Map of the most recently assessed quantitative status of groundwater bodies

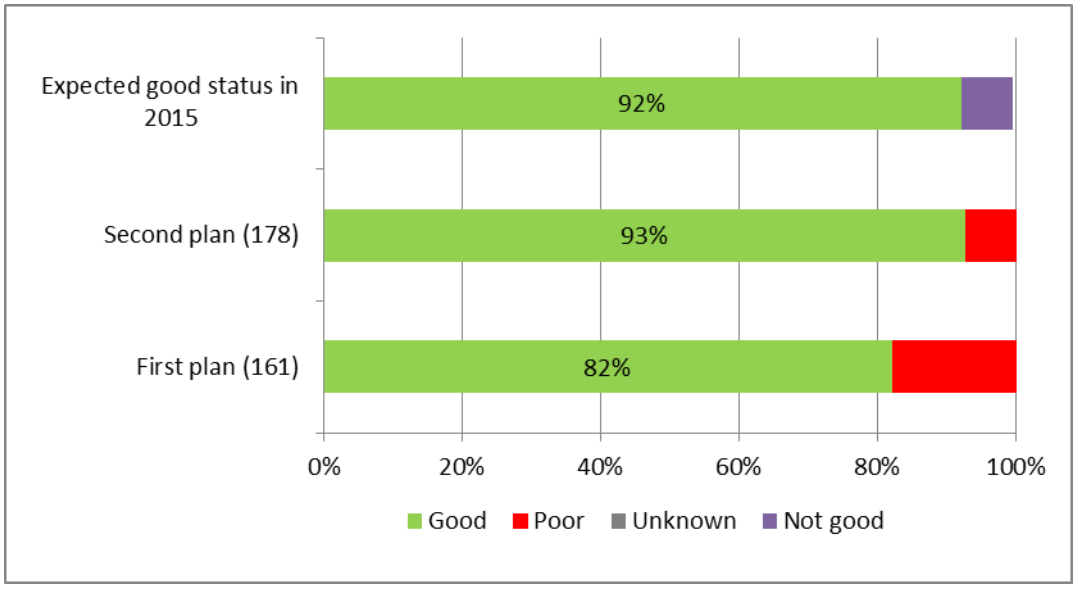


Note: Standard colours based on WFD Annex V, Article 2.2.4.

Source: WISE, Eurostat (country borders)

[64] Poland subsequently clarified that 159 of 172 (92%) groundwater bodies were of good quantitative status. Consequently, 13 (8%) were failing to achieve good status.

Figure 5.1 Quantitative status of groundwater bodies in Poland for the second RBMPs, for the first RBMPs and expected in 2015. The number in parenthesis is the number of groundwater bodies for both cycles of RBMPs. Note the period of the assessment of status for the second RBMPs was 2010 to 2012. The year of the assessment of status for the first RBMPs is not known

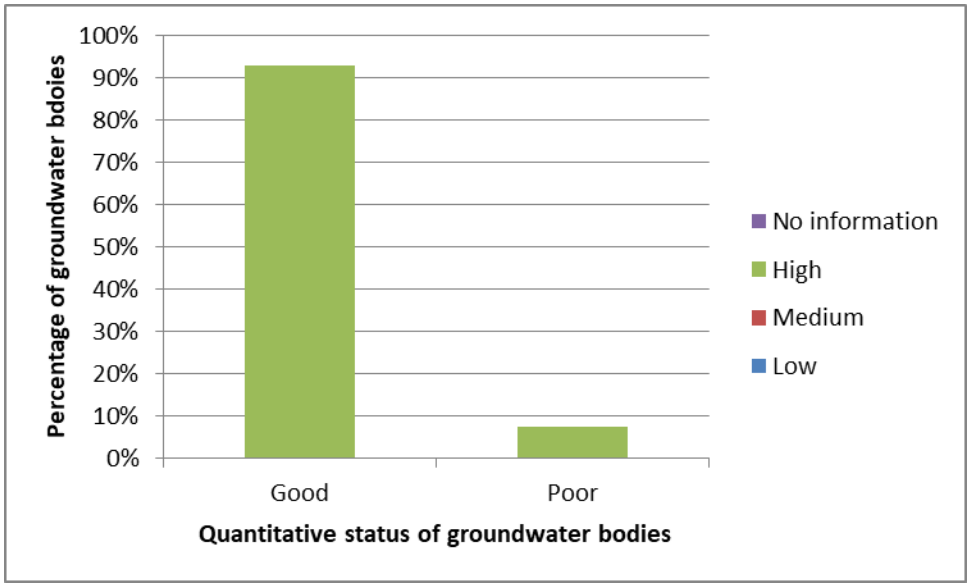


Source: WISE electronic reporting

Figure 5.2 shows that confidence in status classification for all groundwater bodies was at a high level but the RBMPs revealed some discrepancies. For 50 of the 172 groundwater bodies there was no data available. The confidence levels were given as sufficient and low. 12 of 122 were found to be indicative of a poor quantitative status (13 were reported, 7 in the Vistula RBD and 6 in the Oder RBD), but only for 5 with sufficient confidence, while for the remaining 7 the assessment was based on the recognition with low confidence. In 110 groundwater bodies indications for good quantitative status were found, including sufficient confidence level in 76 groundwater bodies. The results from the Vistula RBMP assessment are therefore not consistent with the data reported (Figure 5.2), where confidence is high for all groundwater bodies.[65].

[65] Poland subsequently clarified that the level of confidence in the status assessment was considered sufficient in all 13 groundwater bodies at poor status. For 5 of 159 groundwater bodies at good status, the confidence of the status assessment was defined as low. This concerned three groundwater bodies in the Odra RBD and two groundwater bodies in the Elbe RBD.

Figure 5.2 Confidence in the classification of quantitative status of groundwater bodies in Poland based on the most recent assessment of status



Source: WISE electronic reporting

The total number of groundwater bodies failing good quantitative status decreased significantly from 29 of 161 (18%) groundwater bodies in the first RBMP to 13 of 178 (7%) in the second RBMPs (from 13% to 4% of the total groundwater body area). The RBMP revealed a discrepancy in the WISE electronic reports regarding the Pregolya river basin district where there was no groundwater body of poor status, but it was reported that one groundwater body in the Pregolya river basin district was failing good status due to saline intrusion[66].

In all river basin districts water balance was assessed by a comparison of annual average groundwater abstraction against the 'available groundwater resource' for every groundwater body.

The reasons for the failure of good quantitative status of groundwater bodies are shown in Figure 5.3. Nine groundwater bodies failed good status due to failing the water balance test, which means that the long-term annual average rate of groundwater abstraction is exceeding the available groundwater resource. Five groundwater bodies failed due to damage to groundwater dependent terrestrial ecosystems and five groundwater bodies failed due to saline intrusion. The expected date of achievement of good quantitative status in Poland is shown in Figure 5.4.

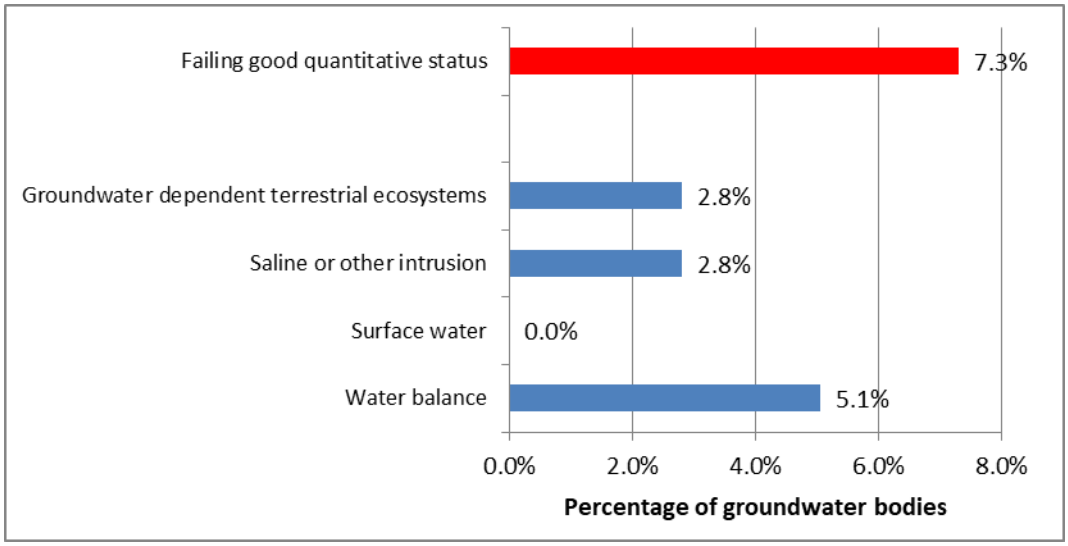
[66] Poland subsequently clarified that there is an error in the report and reasons for failing good status should not have been indicated for this groundwater body in the Pregolya RBD. In the Pregolya RBD all groundwater bodies are at good quantitative status.

In all 10 river basin districts the criterion of 'available groundwater resource' was fully applied in accordance with WFD Article 2(27).

The environmental objectives were partially considered in status assessment. With the exception of the Ucker river basin district, surface water objectives and the diminution of surface water status were not considered[67]. Water balance, groundwater dependent terrestrial ecosystems and saline intrusion were considered in all RBDs.

In total, 13 groundwater bodies (7%) were at risk of failing good quantitative status (Figure 5.5) and they are located in the Vistula RBD and the Oder RBD. Ten groundwater bodies were at risk of failing good quantitative status due to failing the water balance test and five due to saline intrusions.

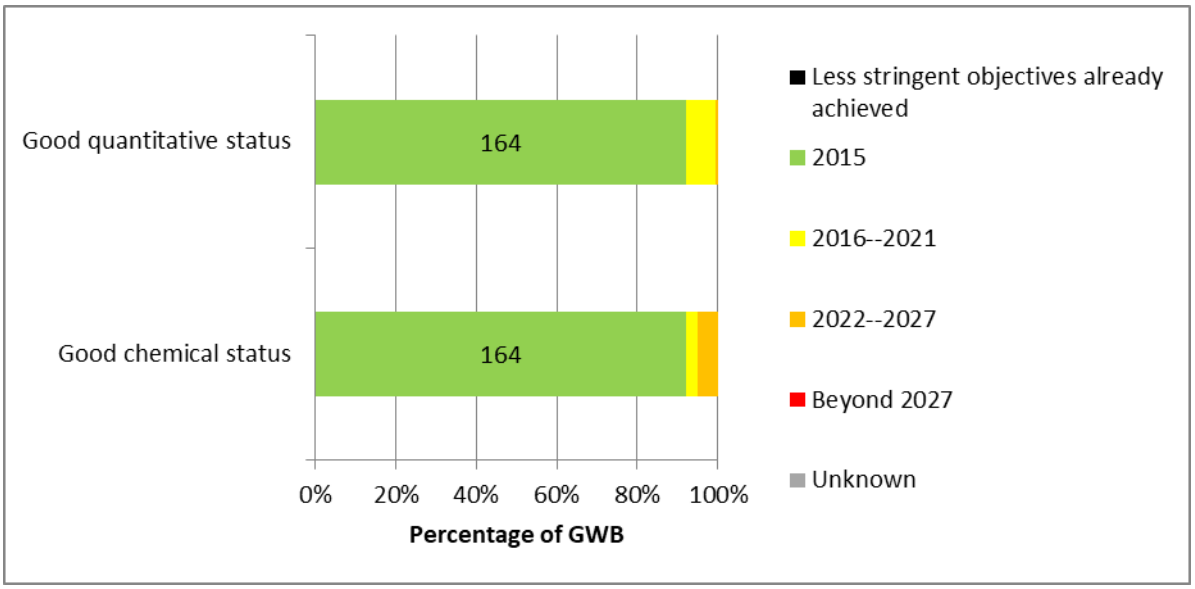
Figure 5.3 Reasons for the failure of good quantitative status of groundwater in Poland based on the most recent assessment of status



Source: WISE electronic reporting

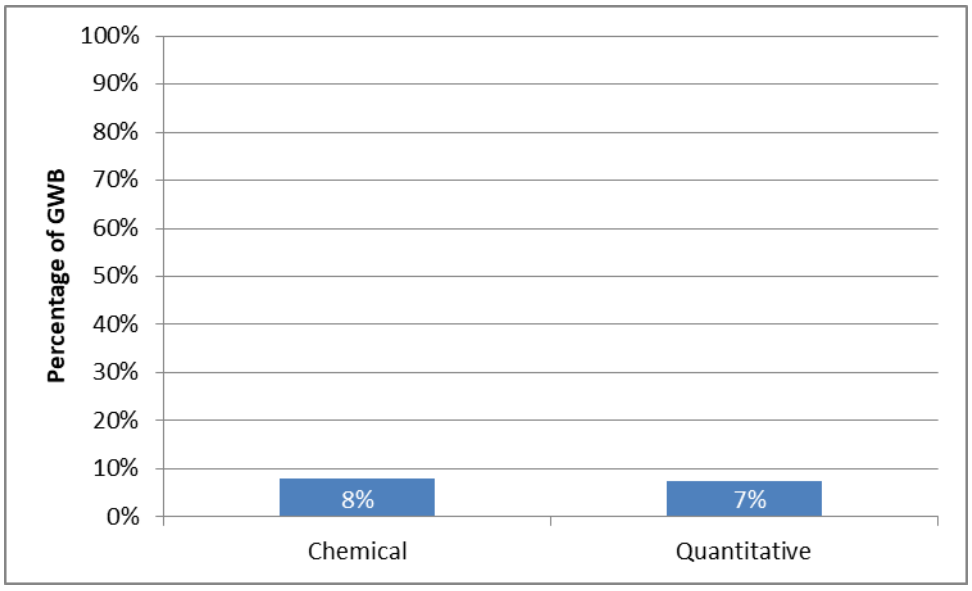
[67] Poland subsequently clarified that in the Ucker RBD no surface water bodies had been identified, as already reported in the 1st RBMPs, hence there is no association between surface and groundwater in this river basin district.

Figure 5.4 ***Expected date of achievement of good quantitative and good chemical status of groundwater bodies in Poland. 178 groundwater bodies were delineated for the second RBMPs***



Source: WISE electronic reporting

Figure 5.5 ***Percentage of groundwater bodies in Poland at risk of failing good chemical status and good quantitative status for the second RBMPs***



Source: WISE electronic reporting

5.1.3 Consideration of groundwater associated surface waters and/or groundwater dependent ecosystems

Groundwater associated surface waters were reported for 172 of 178 groundwater bodies[68]. In 13 groundwater bodies (in the Vistula and Oder RBDs) there was a related risk but groundwater associated surface waters were only considered in status assessment in the Ucker RBD[69].

Groundwater dependent terrestrial ecosystems were reported for 165 of 178 groundwater bodies[70]. In 13 groundwater bodies (in the Vistula RBD and the Oder RBD) there was a related risk. Groundwater dependent terrestrial ecosystems were considered in status assessment in all RBDs and also the needs of these ecosystems were considered in status assessment in all RBDs.

5.2 Main changes in implementation and compliance since first RBMPs

All groundwater bodies have had changes since the first RBMP.

The RBMP for the Vistula RBD contains a very short summary of changes. It mentions that the water monitoring programme has been fully adapted to the requirements of EU law, and on the basis of its results, the current assessment of water status has been carried out. Water monitoring carried out in the second RBMPs was much more comprehensive, but there was no specific conclusion or mention of quantitative monitoring in groundwater bodies.

The groundwater bodies have all been re-delineated. The RBMP of the Vistula river basin district explains that for the first RBMP 161 groundwater bodies were delineated and based on the needs of the second RBMPs, a new division into 172 groundwater bodies was developed. This change was needed due to the definition (adopted according to Polish Geological Institute - National Research Institute) of the conceptual model of the hydrogeological system. According to this definition, the conceptual model describes the structure of the system and indicates the dependencies existing within it (impact - process) and occurring between individual components of the system and the interaction of the system with the environment. In this approach, the conceptual model is built from data as: 1) geological structure; 2) lithological information, distribution and dissemination as well as hydrogeological parameters

[68] Poland subsequently clarified that 168 of 172 groundwater bodies had groundwater associated surface waters.

[69] As previously indicated, Poland subsequently clarified that in the Ucker RBD no surface water bodies had been identified, so there is no association between surface and groundwater in this river basin district. Poland also clarified that the consideration of surface waters was not possible due to a lack of the necessary data.

[70] Poland subsequently clarified that 160 of 172 groundwater bodies had groundwater dependant terrestrial ecosystems.

of aquifers; 3) environmental elements - anthropogenic pressures; 4) factors affecting the course of individual processes within the system. The new delineation methodology comprises a general rule to limit the number of aquifers included in the model (by combining) up to a maximum of three levels. This is in line with the groundwater body monitoring system adopted in Poland, and the following levels or complexes of aquifers are observed in the monitoring: 1) the first aquifer with a free-standing groundwater level, the most exposed to pressure from the surface area; 2) usable aquifers with a confined groundwater level, constituting the main source of water supply for human consumption; 3) deep water level, exposed to salt water intrusion.

The monitoring situation has slightly improved. The percentage of monitored groundwater bodies increased from 90% to 92% and also the number of monitoring sites slightly increased. The groundwater body in the Jarft RBD was subject to monitoring. Monitoring in the second RBMPs was carried out in accordance with the quality requirements given in the 2011 Monitoring Regulation, but it is not clear if and how the quantitative monitoring requirements changed between the two cycles. Yet, the results could have had an impact on the status assessment.

The status situation improved substantially. Since the first RBMP the percentage of the total groundwater area in poor status declined from 7% to 4%. Comparison between the numbers of groundwater bodies is difficult as all groundwater bodies have been re-delineated. The RBMP states that the methodology for the status assessment is from 2008. It is later stated that the methodology adopted in 2012 for the assessment of groundwater body status incorporated the nine classification tests to assess the quantitative and chemical status, and finally the status of groundwater bodies.

5.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation: "*Ensure that monitoring and subsequent assessments of the status of water bodies are carried out in compliance with the requirements prescribed by the WFD. In particular, Poland should develop a coherent and comprehensive monitoring network under Article 8 WFD which enables the correct classification of all water bodies, monitor water bodies in line with the requirements of Annex V to the WFD and with adequate frequencies, and set reference conditions for all quality elements for all water bodies.*"

"Further work is required to make the monitoring, assessment and classification of surface water and groundwater status fully compliant with the requirements of the WFD, Environmental Quality Standards and Groundwater Directives should be fully intercalibrated at the European Union level."

Assessment: The recommendations were partially fulfilled. The number of monitoring sites slightly increased from 828 to 836 and the percentage of monitored groundwater bodies increased from 90% to 92%. There is one groundwater body in the Jarft RBD that was subject to monitoring for the first time.

- Recommendation: "*Provide information on drinking water protected areas associated with groundwater bodies and on the number of drinking water protected areas - including whether they are in good status or not."*

  Assessment: based on the reported information, this recommendation is considered is fulfilled.

Topic 6 Monitoring, assessment and classification of chemical status of groundwater bodies

6.1 Assessment of implementation and compliance with WFD requirements in second RBMPs

6.1.1 Monitoring of chemical status in groundwater

The total number of groundwater bodies in Poland is 178[71]. In total 18 (10%) groundwater bodies which are mainly located in the smaller RBDs were not subject to surveillance monitoring. The review of the Vistula RBMP revealed that no reference to grouping of groundwater bodies for monitoring and assessment of chemical status was found[72].

The WISE electronic reports indicate that there is no operational monitoring any more, although 14 groundwater bodies (8%) were reported to be at risk (in the Vistula RBD and the Oder RBD)[73]. In the first RBMPs 369 operational monitoring sites in 55 groundwater bodies were reported. The Vistula RBMP indicates that operational monitoring was carried out for those groundwater bodies for which threshold values were exceeded but this was not reflected in the reporting of monitoring points dedicated to operational monitoring.

According to the data reported in WISE, the number of groundwater bodies increased by 11% from 161 in the first RBMP to 178 in the second RBMPs but after additional explanation provided by Poland the increase turned out to be approximately 7%. The total groundwater body area remained nearly the same (slight decrease in total area covered). In fact, no groundwater body remained unchanged and all groundwater bodies had been re-delineated.

Not all groundwater bodies were covered by chemical monitoring. There was no chemical monitoring in the Swieza or Ucker RBDs[74]. The number of groundwater bodies with surveillance monitoring increased from 148 (86%) in six RBDs in the first RBMP to 160 (90%) in three RBDs in the second RBMPs. The number of monitoring sites is listed in Table 14 (see Chapter 5) and shows a significant increase from 789 in the first RBMP to 1172 in the

[71] Poland clarified that the number of groundwater bodies is in fact 172. Poland stated the number 178 was reported wrongly and comes from calculation subunits as groundwater-bodies.

[72] Poland clarified that unless there was evidence that the water bodies without monitoring had anthropogenic pressures then the chemical status was classified as good and generally had low confidence.

[73] Poland subsequently clarified that operational monitoring has been continued in the second of river basin management plans and covers 39 GWBs threatened by failure to achieve environmental objectives and is conducted annually outside the year in which surveillance monitoring is carried out.

[74] Poland subsequently clarified that due to the small area of the Świeża river basin district, the inclusion of the groundwater monitoring station in its area was planned at a later stage of monitoring works. The assessment of the basin was carried out as part of the status assessment GWB no. 20 (PLGW700020). In the area of the Ucker river basin district, there is a fragment of one groundwater, PLGW60003 that is located on the territory of two river basin districts: the vast majority (97.66%) of the groundwater body's area is within the Odra river basin district, and 2.34% within the Ucker river basin district. Due to the small area of the Ucker river basin district, consideration of the groundwater monitoring station in its area was planned in subsequent stages of monitoring works. The chemical status assessment of this groundwater body was carried out on the basis of monitoring stations located in the Odra river basin districts.

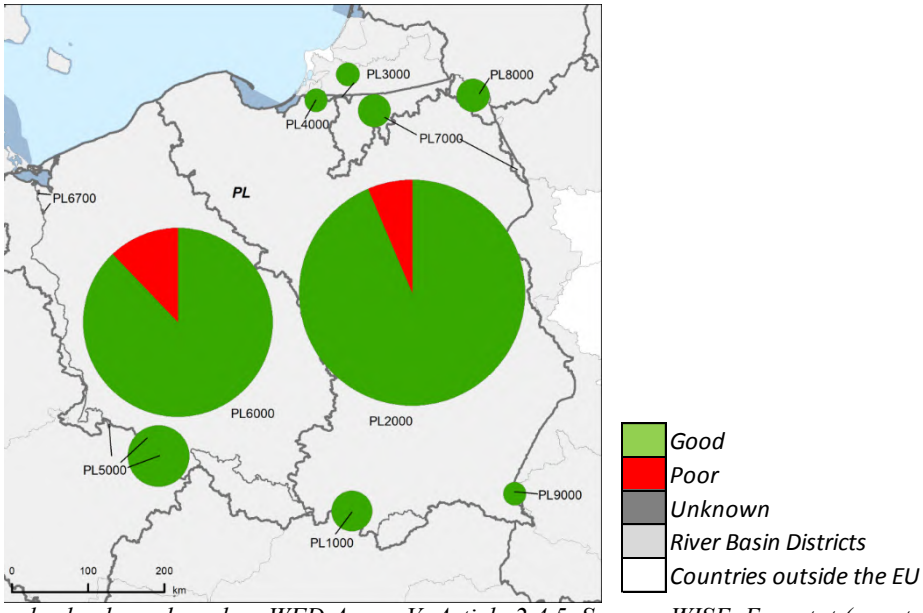
second RBMPs. The number of operational monitoring sites declined significantly from the first RBMP, from 369 to 0[75].

In the Vistula RBD and the Oder RBD, all substances causing risk, except for ammonium (the Vistula RBD and the Oder RBD) and total nitrogen (the Vistula RBD), were subject to surveillance monitoring. No groundwater bodies in other RBDs were considered to be at risk. Except for ammonium, all remaining WFD core parameters nitrate, electrical conductivity, oxygen and pH were monitored.[75]

6.1.2 Assessment and classification of chemical status in groundwater

Map 6.1 and Figure 6.1 display the chemical status of groundwater bodies for the most recently assessed status. It shows that 164 of 178[76] groundwater bodies (92%) were of good chemical status, and the remaining 14 groundwater bodies (8%) failed good status. In terms of area this means that about 8% failed good chemical status. Figure 6.2 shows that the confidence in status classification was high[77]. All groundwater bodies had a clear status in both the first and in the second RBMPs.

Map 6.1 Map of chemical status of groundwater bodies in Poland based on the most recently assessed status of the groundwater water bodies



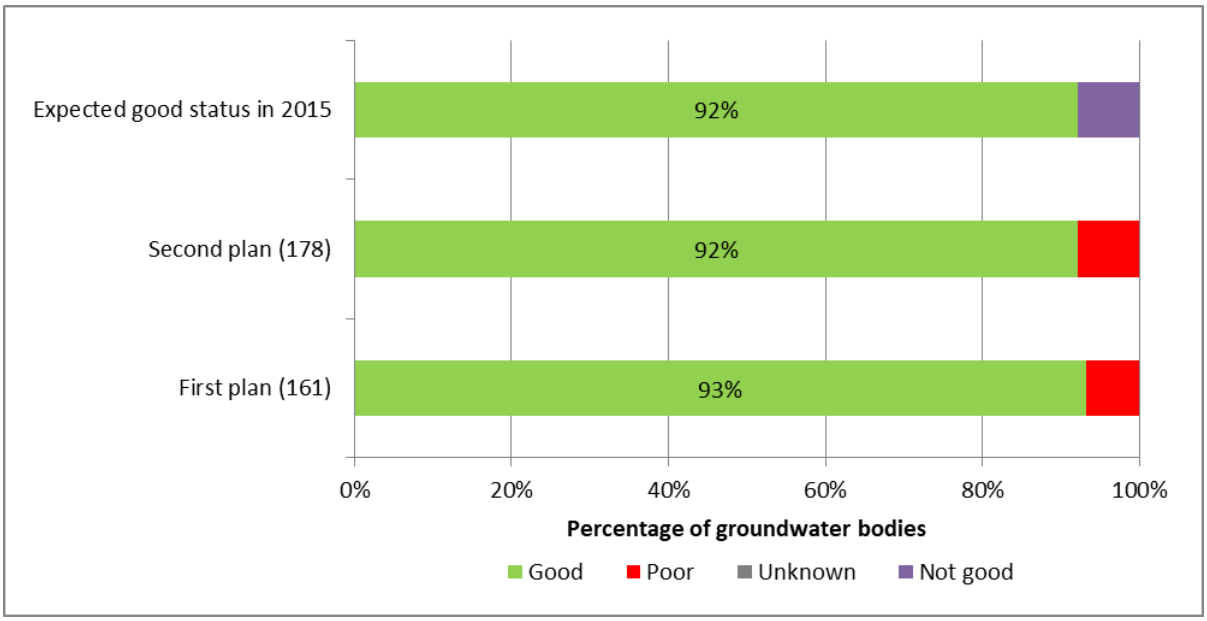
Note: Standard colours based on WFD Annex V, Article 2.4.5. Source: WISE, Eurostat (country borders)

[75] Poland subsequently clarified, that in 2012 ammonium was part of the status assessment report and therefore monitored.

[76] Poland clarified that 158 out of 172 groundwater bodies are in good chemical status.

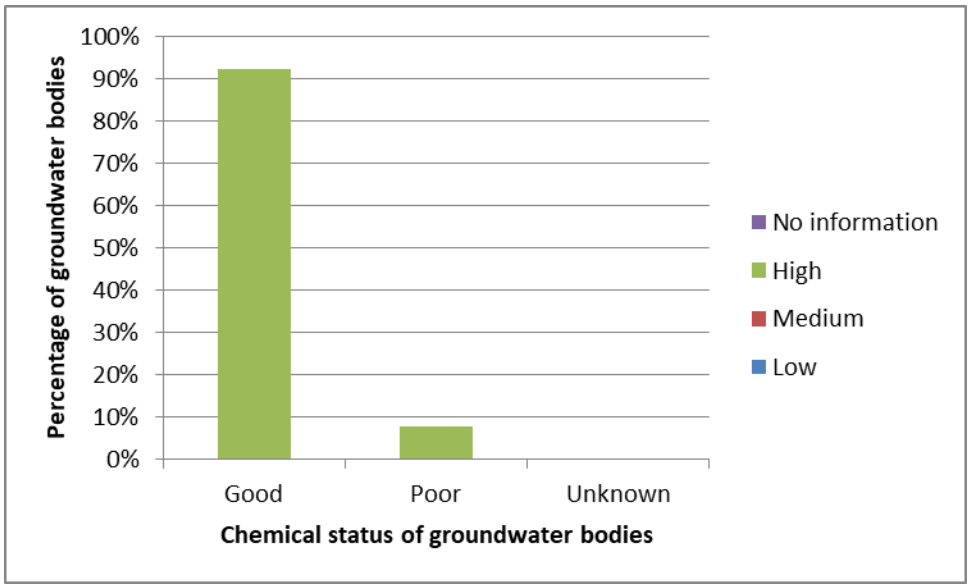
[77] Poland subsequently clarified that the confidence of the chemical status assessment has been determined to be sufficient for 148 GWB and low for 24 GWB. All groundwater bodies with low confidence of the assessment were characterized by good chemical status. In the case of five groundwater bodies, in which no surveillance monitoring was carried out due to the lack of monitoring points, the chemical status was assessed good and with low confidence of the assessment.

Figure 6.1 ***Chemical status of groundwater bodies in Poland for the second RBMPs, for the first RBMPs and expected in 2015. The number in the parenthesis is the number of groundwater bodies for both cycles of RBMPs. Note the period of the assessment of status for the second RBMPs was 2010 to 2012. The year of the assessment of status for the first RBMPs is not known***



Source: WISE electronic reporting

Figure 6.2 ***Confidence in the classification of chemical status of groundwater bodies in Poland based on the most recent assessment of status***

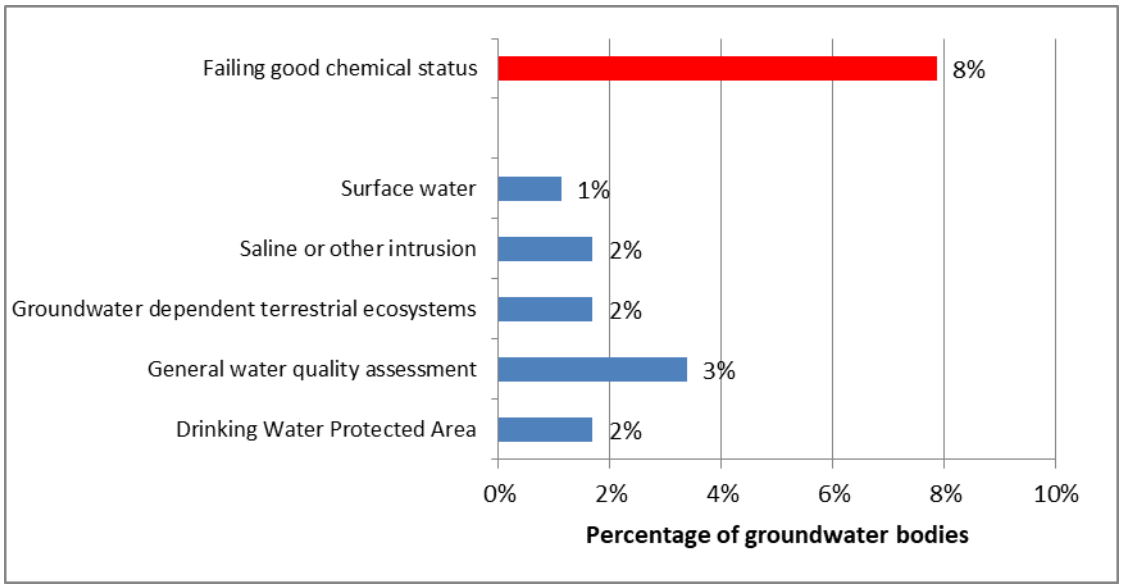


Source: WISE electronic reporting

The total number of groundwater bodies failing good chemical status has increased since the first RBMP from 11 (7%) to 14 (8%) groundwater bodies (from 3.7% to 7.8% of the total groundwater body area). The expected date of achievement of good chemical status in Poland is shown in Figure ***6.1***.

The reasons for the failure of good chemical status of groundwater bodies are shown in Figure 6.2 The drinking water test, the tests concerning the groundwater associated surface water and groundwater dependent terrestrial ecosystems and the test concerning saline or other intrusion have been carried out. The general water quality assessment is the main reason, causing six groundwater bodies to be in poor status.

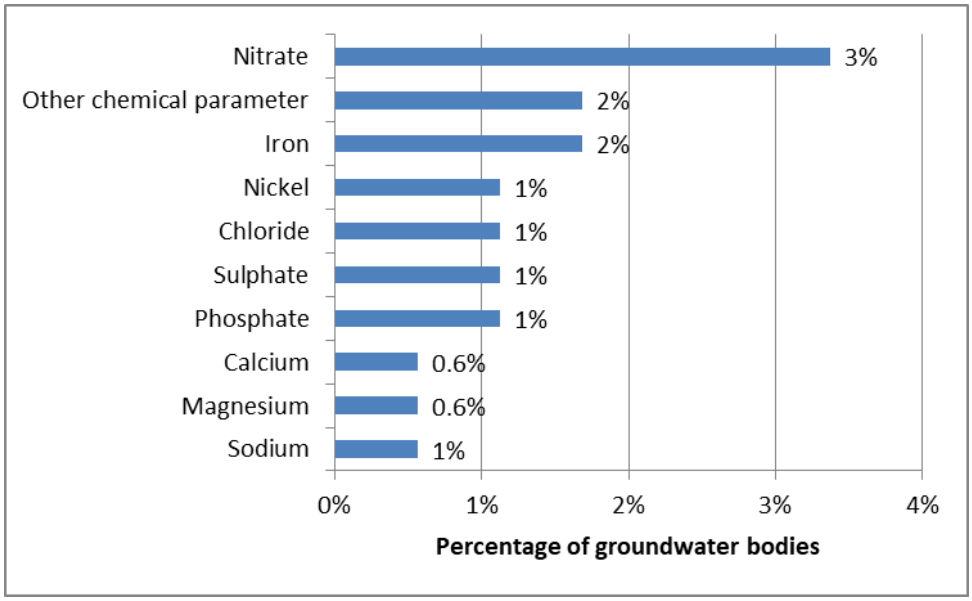
Figure 6.3 Reasons for failing good chemical status in Poland for the most recent assessment of status



Source: WISE electronic reports

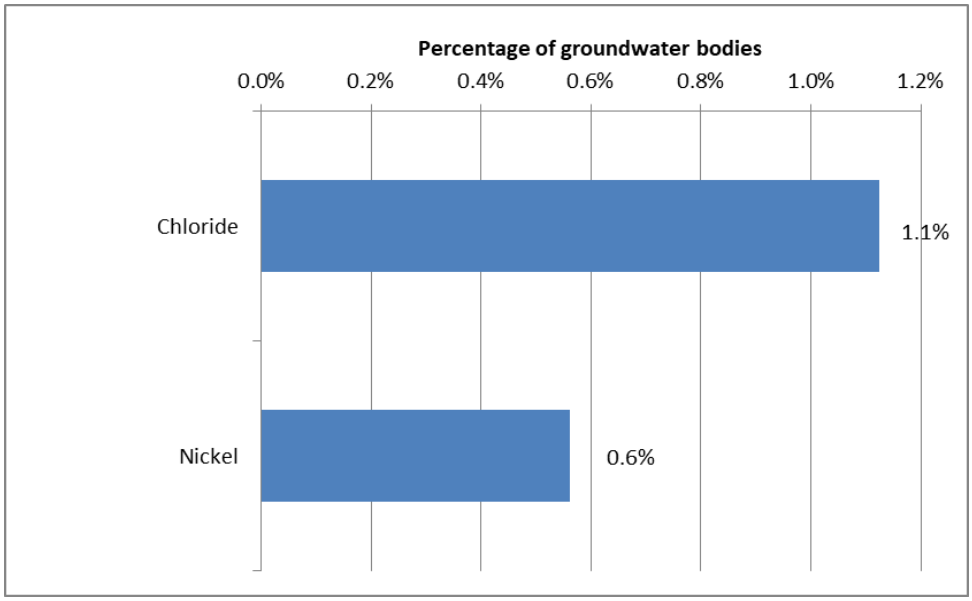
Figure 6.4 shows the top ten pollutants causing failure of status and Figure 6.5 shows the two pollutants causing a sustained upward trend.

Figure 6.4 Top 10 groundwater pollutants causing failure of good chemical status in Poland



Source: WISE electronic reporting

Figure 6.5 Pollutants with upward trends in groundwater bodies in Poland



Source: WISE electronic reporting

The calculation of the extent of exceedance of a groundwater quality standard or a groundwater threshold value was based on the groundwater body area.

Groundwater threshold values were established for all pollutants or indicators of pollution causing a risk of failure of good chemical status. There was no explicit indication that all

Groundwater Directive[78] Annex II substances had been considered. Natural background levels were considered in the establishment of threshold values in all RBDs except the Vistula which mentions that they were considered in a 'different way'. There was no further explanation of this 'different way'.

Trend assessments were reported for all RBDs but a methodology for identifying significant upward trends in any pollutants concentration had not been applied. A methodology for trend reversal assessment is not available.[79]

6.1.3 Consideration of groundwater associated surface waters and/ or groundwater dependent ecosystems

In 172 of 178 groundwater bodies, groundwater associated surface waters were reported and in 14 groundwater bodies a related risk was indicated. Diminution of the status of groundwater associated surface waters was considered in status assessment for all RBDs.

Groundwater dependent terrestrial ecosystems were reported for 165 of 178[80] groundwater bodies and in 14 groundwater bodies a related risk was indicated. Groundwater dependent terrestrial ecosystems were considered in status assessment.

Groundwater associated aquatic ecosystems and groundwater dependent terrestrial ecosystems were considered in the establishment of groundwater threshold values in both RBDs where groundwater bodies were at risk.

6.2 Main changes in implementation and compliance since first RBMPs

The number of groundwater bodies increased by approximately 7% but the total groundwater body area remained nearly the same (slight decrease in total area covered). In fact, all groundwater body changed and all groundwater bodies had been re-delineated. This change was needed due to the definition (adopted according to Polish Geological Institute - National Research Institute) of the conceptual model of the hydrogeological system (see Section 5.2 for further details).

[78] Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02006L0118-20140711

[79] Poland subsequently clarified, that the methodology for identifying significant upward trend is described in the report on the chemical and quantitative status of groundwater bodies in 2012, which was submitted as text report. A methodology for trend reversal assessment was not developed at this stage as the length of the available time series is not sufficient to perform assessments in 2012.

[80] Poland clarified that there are 158 (out of 172) groundwater dependent terrestrial ecosystems.

The surveillance monitoring network improved slightly in Poland, in terms of number of groundwater bodies covered (from 92% to 93% coverage) and in terms of the number of monitoring sites. However, there was no surveillance monitoring in seven RBDs (with only very few groundwater bodies). For operational monitoring the situation deteriorated significantly as there was no more monitoring even though 14 groundwater bodies were at risk, located in the Vistula and Oder RBDs. Poland clarified however that in fact operational monitoring is continued in the second RBMP covering 39 groundwater bodies at risk.

For Vistula RBD for example, a short summary of changes was provided. It mentioned that the water monitoring programme has been fully adapted to the requirements of European legislation. On this basis, the current assessment of water status has been carried out. No further information was given with regard to the monitoring, assessment and classification of the chemical status of groundwater bodies.

Poland however clarified that a summary is to be found in all RBMPs about all changes introduced or the updates done after the adoption of the first RBMP together with monitoring results.

The status situation has deteriorated as described above. The groundwater body area failing good status increased from 3.7% to 7.8% of the total groundwater body area, which could be the result of delineation.

6.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation: *Ensure that monitoring and subsequent assessments of the status of water bodies are carried out in compliance with the requirements prescribed by the WFD. In particular, Poland should develop a coherent and comprehensive monitoring network under Article 8 WFD which enables the correct classification of all water bodies, monitor water bodies in line with the requirements of Annex V to the WFD and with adequate frequencies, and set reference conditions for all quality elements for all water bodies.*

- Recommendation*: Further work is required to make the monitoring, assessment and classification of surface water and groundwater status fully compliant with the requirements of the WFD, EQS and Groundwater Directives. should be fully intercalibrated at the EU level.*

Assessment: The monitoring situation improved for surveillance monitoring in terms of number of groundwater bodies covered and in terms of the number of monitoring sites. Conversely, there was no surveillance monitoring in approximately 10% of the groundwater bodies (i.e. 18 groundwater bodies) in seven RBDs (with only very few groundwater bodies). Initial assessment showed that for operational monitoring the situation deteriorated significantly as there was no more monitoring despite some groundwater bodies being at risk (Vistula and Oder RBDs). Poland however clarified that operational monitoring is continued in the second RBMPs covering 39 groundwater bodies at risk.

The recommendation is partly fulfilled.

- Recommendation: *Put in place in the second RBMPs cycle concrete actions to reduce the number of unknowns and to increase the percentage of WB in good chemical status.*

  The recommendation concerning reduction of the unknowns is not relevant as all groundwater bodies had and still have a clear status classification, in the first and in the second RBMPs.

  The recommendation concerning the increase of the percentage of groundwater bodies in good chemical status was not fulfilled. The number of groundwater bodies failing good status increased (from 7% to 8% groundwater bodies) and the groundwater body area failing good status increased from 3.7% to 7.8% of the total groundwater body area. However this could be as a result of redelineation of water bodies. There is no evidence however that this recommendation has been fulfilled.

- Recommendation: *On groundwater, it is important to have a clear methodology on how exceedances of threshold values are handled in the assessment of groundwater chemical status. Furthermore, a methodology for trend analysis should be in place, even if it was not possible yet to carry out such an analysis during the first RBMP, in order to be sure that this will be done in the second RBMP, and to link groundwater protection measures with the relevant pressures.*

  The recommendation concerning a clear methodology on how exceedances of threshold values are handled in the assessment of groundwater chemical status was fulfilled as all RBDs reported that the calculation of the extent of exceedance of a groundwater quality standard or a groundwater threshold value was based on the groundwater body area.

Initial assessment showed that the recommendation concerning a methodology for trend analysis was not fulfilled. It was reported that trend assessments were performed in all RBDs, but it was in parallel reported that a methodology was not available. In addition to that, a methodology for trend reversal assessment was also not available.

Poland subsequently clarified that the methodology for identifying significant upward trend is described in the report on the chemical and quantitative status of groundwater bodies in 2012, which was submitted as a report.

Therefore, the recommendation is partly fulfilled.

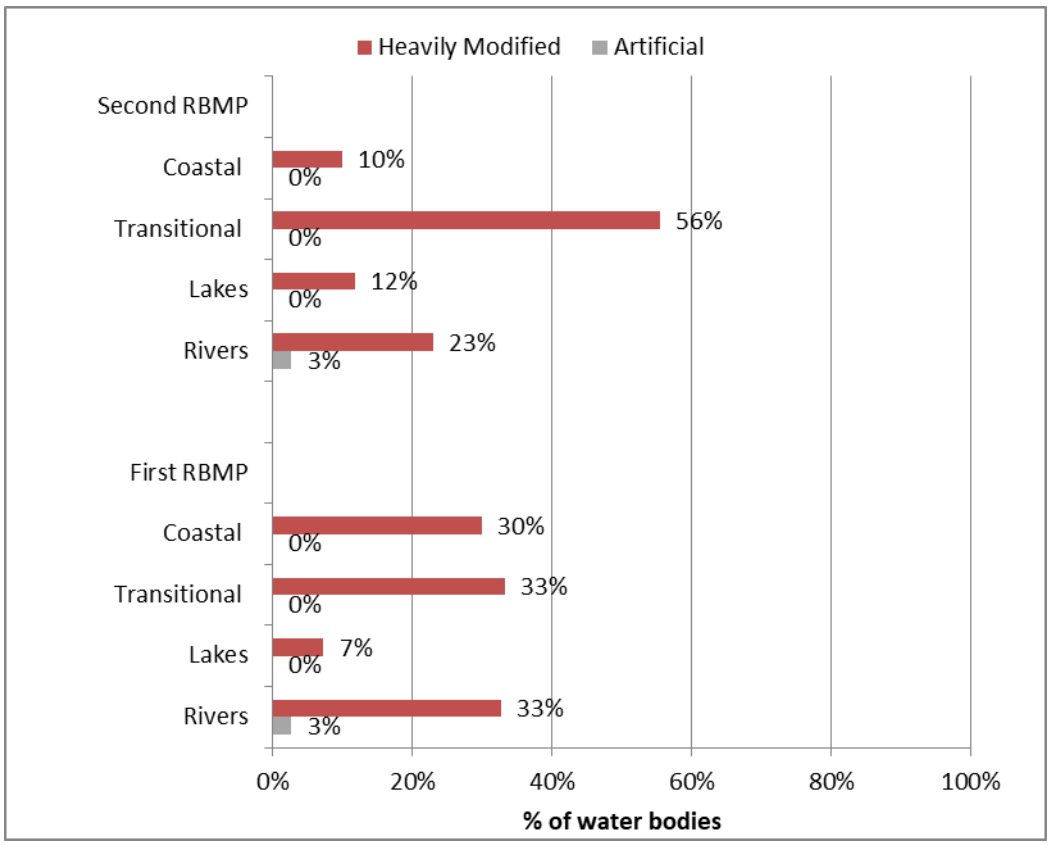
Topic 7 Designation of Heavily Modified and Artificial Water Bodies and definition of Good Ecological Potential

7.1 Assessment of implementation and compliance with WFD requirements in second RBMPs for designation

7.1.1 Designation of Heavily Modified and Artificial Water Bodies

Heavily modified water bodies or artificial water bodies were designated in five out of ten RBDs, similar to the first RBMPs (Figure 7.1). In two RBDs (the Vistula RBD and the Oder RBD), there were 38 river heavily modified water bodies which are now designated as reservoirs, having previously been designated as rivers.

Figure 7.1 Proportion of total water bodies in each category in Poland that has been designated as heavily modified or artificial



Source: WISE electronic reports

The water uses for which river heavily modified water bodies were designated as heavily modified were mainly agricultural irrigation, urban development, storage for

fisheries/aquaculture/fish farms, flood protection, land drainage for agriculture, hydropower, tourism and recreation, transport and the wider environment. In the RBD Oder and the RBD Vistula, for 23.4% and 9.1% respectively of river heavily modified water bodies, the uses are reported as unknown. For the two river heavily modified water bodies in the RBD Danube, the uses for which they are designated were reported as unknown. The water uses for which lake water bodies were designated as heavily modified were mainly urban development, tourism-recreation and other uses which were not specified according to the uses listed in WISE. One coastal heavily modified water body in the Vistula RBD was designated due to navigation/ports and transitional heavily modified water bodies were designated due to flood protection, navigation/ports and other uses.

The main physical alterations of river heavily modified water bodies were channelisation/straightening/bed stabilisation/bank reinforcement and weirs/dams/reservoirs. Lake heavily modified water bodies were affected by channelisation/straightening/bed stabilisation/bank reinforcement and other alterations (not specified in WISE). Also for coastal and transitional heavily modified water bodies, the physical alterations are not specified in WISE (reported as "other").

The methodologies for heavily modified water bodies designation include details on the criteria for the identification of substantial changes in character as well as general guidance (on national level) on the assessment of other means to achieve the benefits of the modifications and significant adverse effects of measures on the use and the wider environment.

7.1.2 Definition of good ecological potential for Heavily Modified and Artificial Water Bodies

Good ecological potential was reported as having been defined with reference made to the approach used as detailed in the Common Implementation Strategy Guidance (approach based on biological quality elements as illustrated in Common Implementation Strategy Guidance Document No 4[81]).

In practice, in Poland, good ecological potential has been defined at different levels, depending on the category of the water body:

- Rivers: good ecological potential has been defined for groups of heavily modified water bodies/artificial water bodies of the same purpose/physical modification;

[81] https://circabc.europa.eu/sd/a/f9b057f4-4a91-46a3-b69a-e23b4cada8ef/Guidance%20No%204%20-%20heavily%20modified%20water%20bodies%20-%20HMWB%20(WG%202.2).pdf

- Lakes: good ecological potential has been defined at national level;
- Transitional and coastal waters: good ecological potential has been defined at the water body level.

Good ecological potential has also been reported as defined in terms of biology. The biological quality elements for which biological values were derived to define maximum ecological potential and good ecological potential are phytoplankton, macrophytes, phytobenthos, benthic invertebrates, and fish. In two RBDs (the Vistula and the Oder), values for biological quality elements to define maximum ecological potential and good ecological potential were derived in addition for macroalgae and angiosperms. According to information in the second RBMPs, the assessment of ecological potential was based on monitoring data from previous years. The classification of heavily modified water bodies/artificial water bodies in terms of biological elements followed the 2011 classification regulation for ecological status, chemical status and ecological potential. This regulation does not however provide values for biological quality elements but more general definitions of ecological potential.

According to the reporting, a comparison between good ecological potential and good ecological status was made.

For rivers, methods for assessing fish and benthic invertebrates were reported as sensitive to altered habitats due to morphological changes. For coastal waters, only methods for assessing benthic invertebrates were reported as sensitive to hydromorphology. For lakes and transitional waters, the methods reported for assessing biological quality elements are not sensitive to hydromorphological changes. For coastal waters, two methods for assessing benthic invertebrates were reported as sensitive to altered habitats due to morphological changes.

Fish ladders were reported as the only mitigation measure identified to define good ecological potential. However, no description was found on the ecological changes that the mitigation measures were designed to achieve.

7.2 Main changes in implementation and compliance since first RBMPs

Major changes in designated river heavily modified water bodies were noted, especially in the Vistula RBD where their number decreased from 904 to 491 from the first to second RBMPs.

For lake heavily modified water bodies, some changes were noted. In the Vistula RBD and the Pregolya RBD, the number of lake heavily modified water bodies decreased slightly, while in

the Oder RBD the number increased (from 34 to 102 lake water bodies although the increase in area is not as high from 201 to 297 km²).

In the Vistula RBD, no transitional heavily modified water bodies were designated in the first RBMPs, while two heavily modified water bodies were designated in the second RBMPs. In the Oder RBD, two coastal heavily modified water bodies from the first cycle were de-designated in the second cycle.

Heavily modified water bodies/artificial water bodies were designated in Poland for the first time in 2007. In the first RBMPs, the methodologies used for the designation included the assessment of hydromorpholgical status and refinement of threshold values to finalise the initial identification of heavily modified water bodies/artificial water bodies. For the second cycle, the verification of the identification of heavily modified water bodies/artificial water bodies was carried out in 2012-2013, and involved the update of information on hydromorphology. The methodology for identifying river heavily modified water bodies/artificial water bodies is still valid, as established in the first RBMPs. Although it is stated that the information on hydromorphology has been updated, no further explanation was provided explaining the changes in numbers of designated river heavily modified water bodies since the first RBMPs.

A methodology for the designation of lake heavily modified water bodies/artificial water bodies was developed for the second RBMPs, while in the first RBMPs there was no methodology available and the identification was based on expert judgement. For the designation of transitional and coastal heavily modified water bodies/artificial water bodies, a methodology document of 2011 was reported, but it is not clear if the same methodology was also used in the first RBMPs or whether this methodology was developed for the second RBMPs. Poland has informed the Commission that the methodology document of 2011 was prepared for the second cycle. In the first cycle, the methodological approach was developed by regional water management authorities in Gdańsk and Szczecin (covering the whole coastline in Poland). In the second cycle, these approaches were revised and updated on the national level.

It was reported that the approach used for the definition of good ecological potential followed the Common Implementation Strategy Guidance approach. This was not entirely clear from the reporting in the first RBMPs. The methodological document for good ecological potential definition in river water bodies has not changed since the first RBMPs and is dated 2007. The methodological documents for good ecological potential definition in lakes and coastal/transitional water bodies are more recent, dated 2011.

7.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation (report 2012): *Designate artificial and heavily modified water bodies and justify their designation; develop a system for classifying them and establish a coherent and comprehensive monitoring network to enable their classification; duly justify exemptions at the water-body level.*

- Recommendation (report 2012): *The designation of HMWBs should comply with all the requirements of Article 4(3). The assessment of "significant adverse effects" on their use or the environment and the lack of "significantly better environmental options" should be specifically mentioned in the RBMPs. This is needed to ensure the transparency of the designation process.*

  Assessment: The methodology for designating river heavily modified water bodies has not changed since the first RBMPs. Although it was stated that the information on hydromorphology was updated, no further explanation was provided on the changes in numbers of designated river heavily modified water bodies since the first RBMPs RBMPs. For lakes and also for transitional and coastal water bodies, new methodologies have been developed for the designation of heavily modified water bodies for the second RBMPs.

  The methodologies for heavily modified water bodies designation include details on the criteria for the identification of substantial changes in character as well as general guidance (on national level) on the assessment of other means to achieve the benefits of the modifications and significant adverse effects of measures on the use and the wider environment. However, information was not reported on the details of the outcome of the designation tests of significant adverse effects on the use and better environmental options (other means) for individual water bodies.

  To fulfil this recommendation in terms of classification, WFD compliant monitoring and assessment methods for fish in rivers, lakes and transitional water bodies should be in place; for macrophytes in rivers; and angiosperms and macroalgae in transitional and coastal waters. These elements would need to be monitored in water bodies affected by hydromorphological pressures. Biological quality element assessment methods were reported for fish in rivers, lakes and transitional water bodies as well as for

macrophytes in rivers and lakes. However, assessment methods for angiosperms and macroalgae were only reported for coastal but not for transitional waters. Concerning monitoring, it appears from information given in the RBMP that the assessment of ecological potential was based on monitoring data from previous years. Concerning the justification of exemptions, please refer to the chapter on exemptions in this report.

Overall, based on the information found, this recommendation was partially fulfilled.

- Recommendation (report 2012): *The method for the determination of good ecological potential in heavily modified and artificial water bodies should be transparent and clearly reported. There seems to be no understanding of how the methodology should be applied.*

  Assessment: It was clearly reported that good ecological potential was defined according to the Common Implementation Strategy Guidance approach (based on biological quality elements as illustrated in Common Implementation Strategy Guidance No 4). The methodological document for good ecological potential definition in river water bodies has not changed since the first RBMPs and is dated 2007. The methodological documents for good ecological potential definition in lakes and coastal/transitional water bodies are more recent, dated 2011, indicating new methodological developments for these categories.

  Good ecological potential was also reported as defined in terms of biology following the 2011 regulation on the classification of ecological status, ecological potential and chemical status of surface water bodies. This regulation though does not provide values for biological quality elements but more general definitions of ecological potential. Mitigation measures were reported for defining good ecological potential (though only fish ladders) but no description was found on the ecological changes that the mitigation measures are designed to achieve.

  Overall, this recommendation was partially fulfilled.

Topic 8 Environmental objectives and exemptions

8.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

8.1.1 Environmental objectives

The environmental objectives are defined in Article 4 of the WFD. The aim is long-term sustainable water management based on a high level of protection of the aquatic environment. Article 4(1) defines the WFD general objective to be achieved in all surface and groundwater bodies, i.e. good status by 2015. Within that general objective, specific environmental objectives are defined for heavily modified water bodies (good ecological potential and good chemical status by 2015[82]), groundwaters (good chemical and quantitative status by 2015) and for Protected Areas (achievement of the objectives of the associated Directive by 2015 unless otherwise specified).

Environmental objectives are reported for surface and groundwater bodies.

Member States are also required to specify additional environmental objectives and standards in Protected Areas where these are required to ensure the requirements of the associated Directive are met. An assessment of such additional objectives for Poland is provided in Chapter 15 of this report.

Assessments of the current status of surface and groundwater bodies in Poland are provided elsewhere in this report: for ecological status/potential of surface waters (Chapter 3); chemical status of surface waters (Chapter 4); quantitative status of groundwater bodies (Chapter 5); chemical status of groundwater bodies (Chapter 6); status of surface and groundwater bodies associated with Protected Areas (Chapter 15).

For the second RBMPs, Member States are required to report the date when they expect each surface and groundwater body to meet its environmental objective. This information is summarised for Poland elsewhere in this report: for ecological status/potential of surface waters (Chapter 3); chemical status of surface waters (Chapter 4); quantitative status of groundwater bodies (Chapter 5); chemical status of groundwater bodies (Chapter 6).

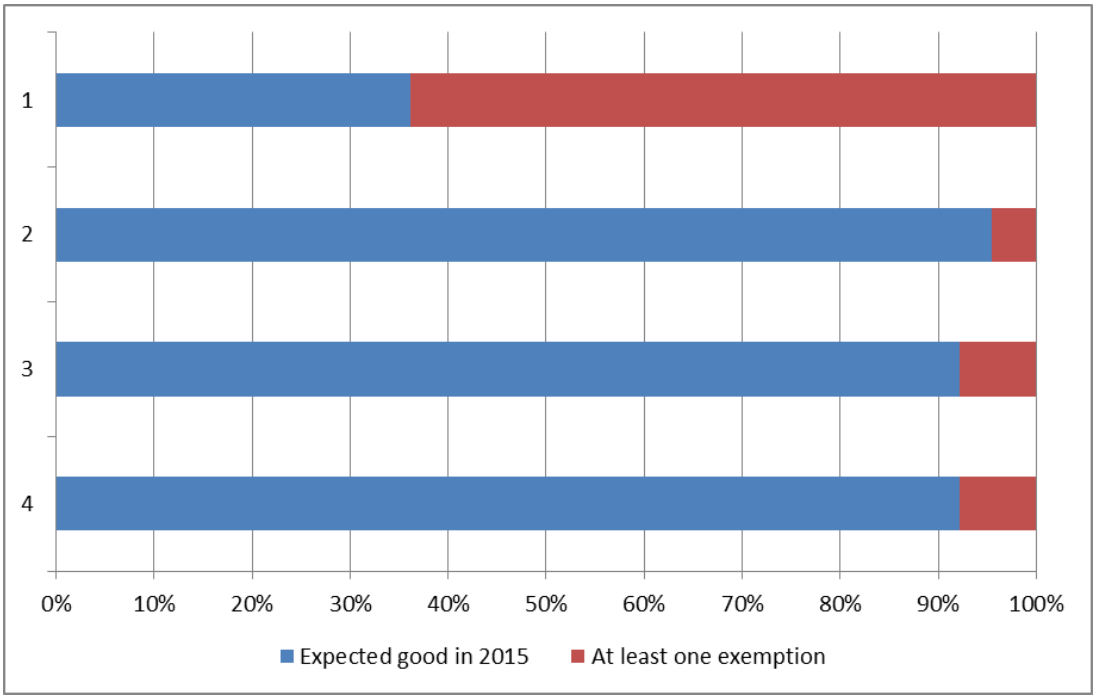
[82] For priority substances newly introduced by Directive 2013/39/EU, good status should be reached by 2027, and for the 2008 priority substances, for which the Environmental Quality Standards were revised by Directive 2013/39/EU, good status should be reached in 2021.

8.1.2 Exemptions

Where environmental objectives are not yet achieved exemptions can be applied in case the respective conditions are met and the required justifications are explained in the RBMP.

Figure 8.1 summarises the percentage of water bodies expected to be at least in good status in 2015 and the use of at least one exemption in Poland for the four main sets of environmental objectives. Exemptions are most widely applied in relation to ecological status/potential objectives.

Figure 8.1 ***Water bodies in Poland expected to be in at least good status in 2015 and use of exemptions. 1 = Surface water body ecological status/potential; 2 = Surface water body chemical status; 3 = Groundwater body quantitative status; 4 = Groundwater body chemical status***



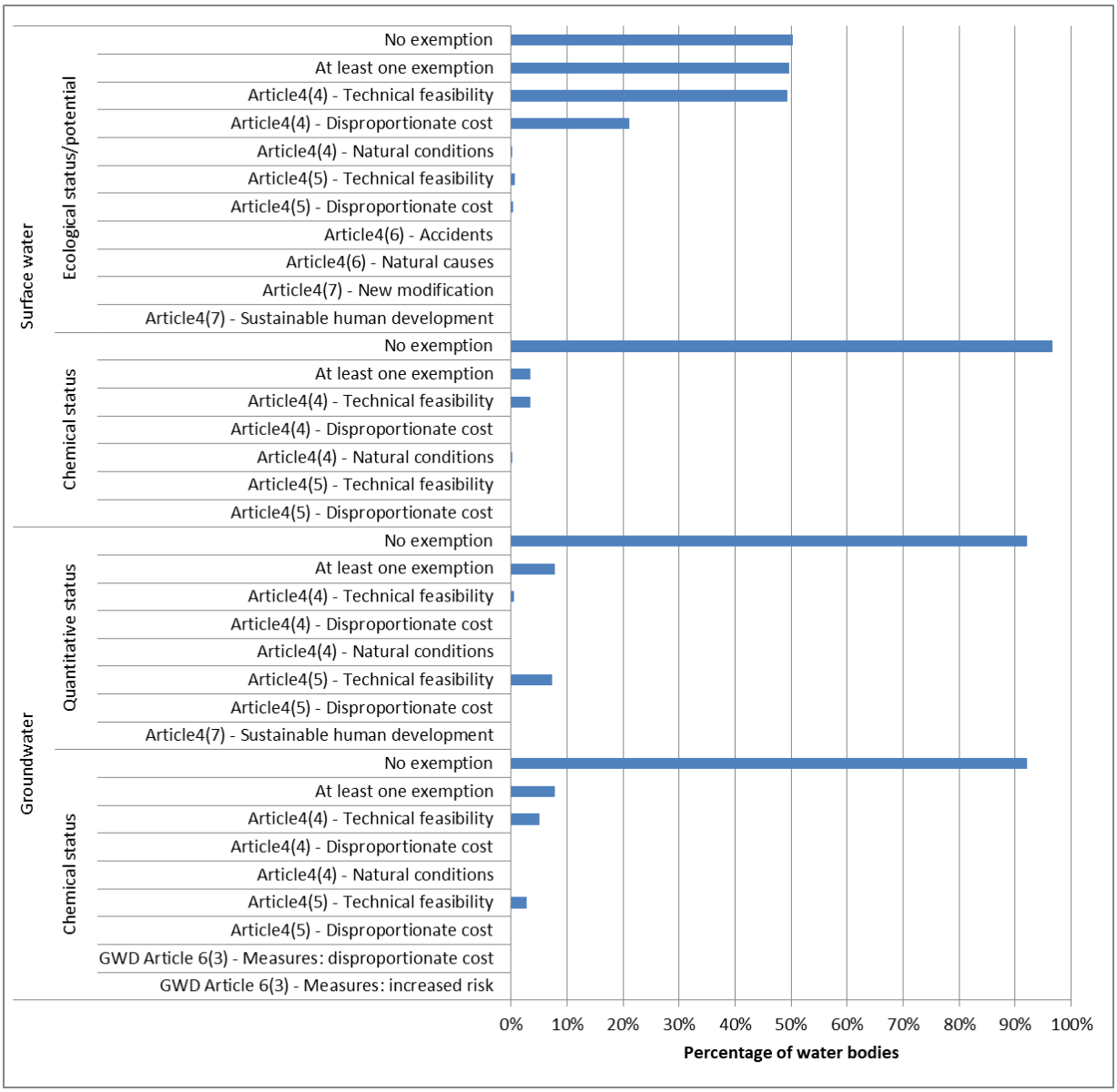
Source: WISE electronic reports

Article 4 of the WFD allows under certain conditions for different exemptions to the objectives: an extension of deadlines beyond 2015, less stringent objectives, a temporary deterioration, or deterioration/non-achievement of good status/potential due to new modifications, provided a set of conditions is fulfilled. The exemptions under WFD Article 4 include the provisions in Article 4(4) - extension of deadline, Article 4(5) - lower objectives, Article 4(6) - temporary deterioration, and Article 4(7) - new modifications/new sustainable human development activities. Article 4(4) exemptions may be justified by: disproportionate

cost, technical feasibility or natural conditions, and Article 4(5) by disproportionate cost or technical feasibility.

Figure 8.2 summarises the percentage of water bodies subject to each type of exemption (and reason) in relation to the four types of environmental objective in Poland.

Figure 8.2 Type of exemptions applied to surface water and groundwater bodies for the second RBMPs in Poland. Note: Ecological status and groundwater quantitative status exemptions were reported at the water body level. Chemical exemptions for groundwater were reported at the level of each pollutant causing failure of good chemical status, and for surface waters for each Priority Substances that is causing failure of good chemical status



Source: WISE electronic reports

Application of Article 4(4)

Article 4(4) was not applied in surface waters in the first RBMPs in the Danube RBD, Jarft RBD, Elbe RBD or Dniester RBDs. This has changed in the second cycle and Article 4(4) was applied in all RBDs[83]. Good ecological status is only achieved in all water bodies in the Dniester RBD. Exemptions reported in terms of achievement of good chemical status in surface waters were applied in all RBDs except for the Danube and Swieza RBDs.

The reasons for exemptions to surface water bodies' objectives included natural conditions, disproportionate costs and technical feasibility.

In the first cycle, Article 4(4) exemptions on chemical status for groundwater were applied in the Elbe RBD. In the second cycle, exemptions to the achievement of good chemical status and quantitative status by 2015 were applied in the Oder and Vistula RBD. The reason reported for exemptions to groundwater objectives was technical feasibility.

Justifications for technical feasibility were given in relation to Article 4(4) at water body level. Information on when environmental objectives are expected to be met was also given. A more in-depth justification of the technical feasibility is also provided. However, PLRW200002111569 was assessed in more detail and as justification for the exemption information was provided that no pressure was identified in this water body that could cause the exceedance of the quality element.

Disproportionate costs were only used for surface waters in the Vistula and Oder RBD. Costs of basic measures listed in Article 11(3) (a) of the WFD have been explicitly excluded from the assessment of disproportionate cost in surface water bodies. The justification provided in the plans however was not fully clear and also mixed elements from justifications of technical feasibility and natural conditions. There was also no differentiation between justifications related to Articles 4(4) and 4(5).

The use of natural conditions as a justification was not fully justified as details are lacking. Application of Article 4(4) was reported in WISE and mentioned in relation to lakes in the RBMP, but only general text is provided without details.

For surface waters the drivers behind Article 4(4) were:

[83] Poland subsequently clarified that the analysis was more thorough as data available for waterbodies characterisation was updated and refined. Moreover, some changes in the approach on setting exemptions for example in the SWBs with no direct monitoring have taken place.

- agriculture (Vistula, Oder, Pregolya and Nemunas RBDs);
- industry (Vistula, Oder and Pregolya RBDs);
- tourism and recreation (Vistula, Oder, Pregolya and Nemunas RBDs); and
- urban development (Danube, Vistula, Oder, Pregolya and Nemunas RBDs).

The impacts causing exemptions in surface waters were:

- acidification (Vistula, Oder and Pregolya RBDs);
- chemical pollution (Vistula, Jarft, Elbe, Oder, Pregolya, Nemunas and Dniester RBDs);
- altered habitats due to morphological changes (Vistula, Elbe, Oder, Pregolya and Nemunas RBDs);
- nutrient pollution (Danube, Vistula, Swieza, Jarft, Oder, Pregolya, and Nemunas RBDs),
- organic pollution (Vistula, Swieza and Pregolya RBDs).

For groundwater the drivers behind Article 4(4) were:

- Agriculture Urban development and industry (Vistula, Oder)
- Transport (Oder)

The impacts causing exemptions to groundwater were:

- damage to groundwater-dependent terrestrial ecosystems for chemical / quantitative reasons (Vistula RBD);
- alterations in flow directions resulting in saltwater intrusion (Vistula RBD),
- Microbiological pollution (Vistula and Oder RBDs),
- Diminution of quality of associated surface waters for chemical / quantitative reasons (Vistula and Oder RBDs),
- Saline pollution/intrusion (Oder RBD).

The drivers for exemptions related to Article 4(4) in groundwater were agriculture, industry, transport and urban development in the Vistula and Oder RBDs. In other RBDs, Article 4(4) was not applied to groundwater.

The pressures to surface waters caused by the drivers mentioned above were point and diffuse pollution (Danube, Vistula, Oder, Pregolya and Nemunas RBDs). For the Swieza and Jarft RBDs only diffuse pollution was reported and for the Elbe RBD the pressures were reported as unknown. No information on pressures was reported for the Dniester RBD[84].

For groundwater alteration of water level or volume, diffuse and point pollution were reported for the Vistula and Oder RBDs.

Pressures responsible for Priority Substances failing to achieve good chemical status and for which exemptions have been applied are summarised in Table 8.1 and pressures responsible for pollutants failing to achieve good chemical status in groundwater and for which exemptions have been applied are summarised in Table 8.2.

Table 8.1 Pressures responsible for Priority Substances in Poland failing to achieve good chemical status and for which exemptions have been applied

Significant pressure on surface water bodies	Failing Priority Substances	Article 4(4) - Technical feasibility exemptions
	Number	Number
1.1 - Point - Urban waste water	5	9
1.9 - Point - Other	7	12
2.7 - Diffuse - Atmospheric deposition	1	109
8 - Anthropogenic pressure - Unknown	18	177

Source: WISE electronic reports

Table 8.2 Pressure reported being responsible for pollutants in Poland failing to achieve good chemical status in groundwater and for which exemptions have been applied

Significant pressure on groundwater	Number of failing pollutants	Number of exemptions	
		Article 4(4) - Technical feasibility	Article 4(5) - Technical feasibility
1.6 - Point - Waste disposal sites	6	6	
1.7 - Point - Mine waters	5	4	3
2.2 - Diffuse - Agricultural	6	8	2
2.8 - Diffuse - Mining	5	4	5
4.3.4 - Hydrological alteration - Public water supply	1		1
7 - Anthropogenic pressure - Other	9	9	3

Source: WISE electronic reports

[84] Poland subsequently clarified that there was only one significant pressure identified in the Dniester RBD which is diffuse atmospheric deposition' in the water body coded PLRW9000127691. The other two WBs are in bad status (upon the expert judgment based on monitoring results from 2010-2012) and there is no data from 2013 chemical monitoring. In such a case no significant pressure was reported.

Application of Article 4(5)

Article 4(5) was only used in the Vistula RBD in surface waters and groundwater in the first RBMPs. This has not changed, but in the second RBMPs, Article 4(5) was also applied in the Pregolya RBD (surface waters) and the Oder RBD (surface waters and groundwater).

The reasons for exemptions under Article 4(5) to surface waters are justified on water body level by technical feasibility and disproportionate costs.

The drivers behind Article 4(5) exemptions in surface waters were:

- agriculture (Vistula, Oder and Pregolya RBDs);
- urban development (Vistula RBD, PL6000);
- Tourism and recreation (Vistula, Oder and Pregolya RBDs); and
- Urban development (Vistula RBD).

The drivers behind Article 4(5) exemptions in groundwater were:

- agriculture (Vistula and Oder RBDs);
- urban development (Vistula and Oder RBDs);
- industry (the Oder RBD);
- energy (the Vistula RBD, the Oder RBD); and
- transport (the Vistula RBD).

Application of Article 4(6)

No exemptions according to Article 4(6) were applied.

Application of Article 4(7)

Article 4(7) was applied in the first RBMPs and is also applied in the second RBMPs. The justification for using Article 4(7) in the Vistula RBMP refers to master plans under which Article 4(7) was considered/assessed. The RBMP gives a summary of the master plans for the Vistula RBD and states that among all the investments analysed, it was reported that Article 4(7) was assessed for 252 potential investments. 155 investments were reported to meet all the conditions allowing for derogation from the set environmental objectives. Investments

which entered into the masterplan for the Vistula RBD are planned until 2021. The Annexes to the Vistula, Oder and Pregolya RBMPs present the final list of investments with justifications for meeting the requirements set out in the Article 4(7) WFD[85].

Application of Article 6(3) of the Groundwater Directive

No exemptions according to Article 6(3) of the Groundwater Directive[86] were applied.

8.2 Main changes in implementation and compliance since the first RBMPs

The RBMPs contain a short summary of changes and references to the articles in the Polish Water Law 2011 that has now been superseded by the Water Law 2017. The RBMP stated that the most important change to the Water Law Act is the definition of environmental objectives and exemptions and the provisions of articles to fully transpose Article 4(5) of the WFD (Article 114a of Poland's Water Law) and Article 4(7) of WFD (Article 38j of Poland's Water Law). The provisions of Article 38 and Article 114a of the Water Law Act define environmental objectives for water bodies and Protected Areas and set the rules for the application of deviations from their implementation, which was stated to be a full transposition of the WFD Articles.

Article 4(4) was not applied in surface waters in the first RBMPs in the Danube, Jarft, Elbe or Dniester RBDs. This changed in the second RBMPs where Article 4(4) was applied in all RBDs. Article 4(5) was only used in the Vistula RBD in surface waters and groundwater in the first RBMPs. This did not change in the second RBMPs, but Article 4(5) was also applied in the Pregolya (surface waters) and Oder RBDs (surface waters and groundwater). For groundwater exemptions under Article 4(4) and Article 4(5) on chemical status were applied in the Vistula and Elbe RBDs in the first RBMPs. In the second cycle exemptions to the

[85] Poland further informed that the review of RBMPs had been in place since May 2014. One of the tasks was a detailed in-depth analysis of planned investments against requirements of the WFD and its Article 4(7). During those analyses the list of investments which could negatively affect the ability to achieve environmental objectives and for which derogation 4(7) could be applied was updated (also in the frame of public consultation) and verified. Those analysis included impact assessment related to the quality elements used for water body status assessment (biological, physico-chemical and hydromorphological) and also on every stage of project implementation. The Masterplans have been included in the second RBMPs by inclusion of chosen investments from the list No 2 of Masterplans (i.e. those investments that may cause failure to achieve good status of WBs or deterioration of status), meeting (after additional thorough verification) the requirements of the Article 4(7). Further investments related to flood protection have also been assed in-depth. Cases where not all the requirements of the Article 4(7) have been met were finally not included in the second RBMPs even being in the territory of the PFRA and analysed in the FRMPs.

[86] Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02006L0118-20140711

achievement of good chemical status by 2015 have been applied in the Vistula and Oder RBDs.

8.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM reports requested action on the following:

- Recommendation: *Only little improvement of the water status is expected by 2015 and the objectives for subsequent plans are not always clear. Objectives should be clearly indicated and transparent in order to be able to reach good status of waters in a reasonable timeframe.*

  Assessment: Environmental objectives for chemical and ecological status of surface water and chemical and quantitative status of groundwater were reported in all RBDs and deadlines when objectives will be met are set. Overall the RBDs under which exemptions are applied have been increased. In terms of improvements in the characterisation process, monitoring networks, status assessments and reducing uncertainty, various levels of progress have been made as reported in the preceding chapters. This recommendation has been partially fulfilled.

- Recommendation: *Exemptions from the achievement of good ecological status by 2015 have been widely applied in Poland, and mostly under Article 4(4). While the WFD does provide for exemptions, specific criteria must be fulfilled for their use to be justified. The application of exemptions needs to be more transparent and the reasons for the exemptions should be clearly justified in the plans.*

  Assessment: The recommendation has partly been fulfilled. As mentioned in the recommendation above, it is stated clearly at the water body level when objectives will be achieved. The justifications for the exemptions are applied on water body level but are not clearly described.

- Recommendation: *It is unclear whether there are other new physical modifications planned in RBMPs apart from those reported in the RBMPs. If this is the case, the use of exemptions under Article 4(7) should be based on a thorough assessment of all the steps as requested by the WFD, in particular an assessment of whether the project is of overriding public interest and whether the benefits to society outweigh the environmental degradation, and regarding the absence of alternatives that would be a better environmental option. Furthermore, these projects may only be carried out when*

all possible measures are taken to mitigate the adverse impact on the status of the water. All conditions for the application of Article 4(7) in individual projects must be included and justified in the RBMPs as early in the project planning as possible

Assessment: Poland has assessed the application of projects that could cause an exemption under Article 4(7). A significant number of projects was reported to fulfil all the requirements as outlined in Article 4(7). Judging the fulfilment of this recommendation requires further assessment.

- Recommendation: *Designate artificial and HMWBs and justify their designation; develop a system for classifying them and establish a coherent and comprehensive monitoring network to enable their classification; duly justify exemptions at the water-body level.*

  Assessment: For the assessment of the recommendation as regards to HMWBs and Good ecological potential see chapter 7. As regards exemptions the justifications for the exemptions were provided at water body level but were not clearly described. Therefore this has been partially fulfilled.

- Recommendation: *Improve methodology and transparency in the application of exemptions for the second RBMP. This should rely on strategic planning including adequate assessment of better environmental options, clear defined criteria for the application of "technical unfeasibility", "disproportionate costs" and "natural conditions"*

  Recommendation: *The high number of exemptions applied in these first RBMPs is a cause for concern.*

  Assessment: These recommendations have partly been implemented. As mentioned in the recommendation above, it is stated clearly at the water body level when objectives will be achieved. The justifications for the exemptions are provided at water body level but are not clearly described. Therefore this has been partially fulfilled.

- Recommendation: *Any new or maintenance work on the drainage of agricultural lands should be assessed against Article 4(7), and only compliant projects should be executed.*

Assessment: See assessment above[87].

- Recommendation: *Provide additional objectives for special protection in the RBMPs for protected areas and report information on the status of drinking water protected areas associated with groundwater bodies. There is a lack of conservation action plans for Natura 2000 areas.*

  Assessment: No information was found. See Chapter 15 for the assessment on protected areas.

[87] Poland informed that when planning, constructing water drainage facilities and maintaining waters, the need to achieve environmental objectives set out in the WFD is taken into account. In Poland, water maintenance plans have been developed to collect all the planned maintenance works, taking into account the needs of flood protection and the need to achieve environmental objectives. The water maintenance plans have been subjected to the procedure of strategic environmental assessment together with public consultations. The maintenance works indicated in the water maintenance plans do not have, in principle, a negative impact on the water status. Projects that have a negative impact on the water status have been analysed in terms of the WFD requirements. The final list of projects fulfilling the requirements of Article 4(7) is in the RBMPs.

Topic 9 Programme of measures

The aim of this chapter is to provide an overview of the PoM reported by Member States; more specific information on measures relating to specific pressures (for example arising from agriculture) is provided in subsequent chapters.

The Key Types of Measure (KTM) referred to in this section are groups of measures identified by Member States in the PoM, which target the same pressure or purpose. The individual measures included in the PoM (being part of the RBMP) are grouped into Key Types of Measure for the purpose of reporting. The same individual measure can be part of more than one Key Types of Measure because it may be multi-purpose, but also because the Key Types of Measure are not completely independent silos. Key Types of Measure have been introduced to simplify the reporting of measures and to reduce the very large number of Supplementary Measures reported by some Member States (WFD Reporting Guidance 2016).

A Key Types of Measure may be one national measure but it would typically comprise more than one national measure. The 25 predefined Key Types of Measure are listed in the WFD Reporting Guidance 2016.

The Key Types of Measure should be fully implemented and made operational within the RBMP planning period to address specific pressures or chemical substances and achieve the environmental objectives.

9.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

9.1.1 General issues

Poland has made significant progress in the implementation of the WFD in respect of the PoM, although there are still some areas where the implementation could be further strengthened.

An indication of whether or not measures have been made operational is when they were reported as being planned to tackle significant pressures (KTM level). Significant pressures are also reported at the water body level. It would be expected that there would be measures planned to tackle all significant pressures. The reported significant pressures are well covered with operational KTMs in place to reduce the pressures in both surface waters and groundwater

for the two main RBDs (Oder and Vistula) and for the remaining eight RBDs, for surface water only (no significant pressures were reported for groundwater).

Poland has mapped 1 020 national basic measures against 15 of the 25 pre-defined KTMs. A further 390 national basic measures have been mapped against nine nationally developed KTMs. four of the national basic measures that have been mapped against the nationally defined KTM "measure to optimize water consumption' apply in only two RBDs; the other 1 406 national basic measures apply in all 10 RBDs. 22% of the national basic measures have been mapped against KTM 21 - 'Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure'. Poland has also mapped 122 national supplementary measures against nine of the predefined KTMs and a further 17 national supplementary measures against four nationally defined KTMs. 30% of the national supplementary measures have been mapped against KTM 20 – 'Measures to prevent or control the adverse impacts of fishing and other exploitation/removal of animal and plants', 22% have been mapped against KTM14 –"Research, improvement of knowledge base reducing uncertainty' and 17% against KTM6 –"Improving hydromorphological conditions of water bodies other than longitudinal continuity'. None of the basic measures were reported to address Article 11(3)(f): Controls, including a requirement for prior authorisation of artificial recharge or augmentation of groundwater bodies[88], but all of the other Article 11(3) requirements appear to have been addressed by basic national measures. An inventory of national measures has been reported with links to where further information can be found.

Generally, fewer types of KTM were reported to be operational to address significant pressures, than were reported to have national measures mapped against them. This implies that some of the national measures that were reported are not operational. The exception to this is the Ucker RBD, where all mapped KTMs are used to tackle significant pressures. For example: in the Danube RBD the number of KTMs reported to be tackling significant pressures for the Danube is two, as opposed to 24 KTMs that have had national measures mapped against them; for the Vistula and Oder RBDs the 13 KTMs were reported to be tackling significant pressures, whilst 28 have had national measures mapped against them[89].

In eight RBDs water bodies affected by significant pressures are expected to achieve good status or potential by 2027 while in the Vistula and Oder, up to 10% of groundwater bodies and surface water bodies are not expected to achieve good status due to various significant

[88] Poland clarified that there was one national measure to address Article 11(3)(f).

[89] Poland clarified that there are 24 KTMs assigned to the Danube RBD (23 basic measures and 4 supplementary ones). For the Vistula and Oder RBDs there were 28 KTMs assigned to each of those two RBDs (24 basic measures and 13 supplementary ones). According to the reporting schema more than one measure could have been assigned to one KTM.

pressures. In addition, in the Oder RBD between 10-20% of groundwater bodies are not expected to achieve good status due to alteration of water level or volume and mining.

The substances causing failure of WFD objectives in groundwater together with the KTMs being used in the second RBMPs to address these failures were reported for the Vistula and Oder RBDs only. All River Basin Specific Pollutants identified as causing a failure of good ecological status or potential substances in groundwater have at least one associated KTM, usually more. No information for the River Basin Specific Pollutants causing failure of good status in surface water bodies was reported in any of the RBDs, although KTMs to address River Basin Specific Pollutants were reported for the Vistula and Oder RBDs. The Annex 0 provided by Poland states "In accordance with reporting criteria, for surface water bodies failing to achieve good ecological status due to the exceedance of specific pollutant substances (group 3.6), the substances causing status reduction should be indicated. The water status assessment in the 2010-2012 year period does not contain information on the substances causing status reduction for water bodies failing to achieve good ecological status, assessed with the grouping method (grouping only concerns overall assessments not particular substances)'.

Information on the Priority Substances causing water bodies to fail to be of good status was provided for seven of the RBDs (Vistula, Jarft, Elbe, Oder, Pregolya, Nemunas and Dniester). However, KTMs to address these substances were reported for the Vistula, Jarft, Elbe and Oder RBDs only.

Information on indicators of the gaps to good status to be addressed by the KTMs was generally well reported. Poland reported indicators of the gaps to good status for significant pressures on groundwater and surface water for 2015 and 2021 and 2027 for the Vistula and Oder RBDs. The gaps to good status were reported for surface waters only for the Danube, Swieza, Jarft, Elbe, Pregoya, Nemunas and Dniester RBDs. Generally the gap to good status decreases from 2015 to 2027 with good status mostly expected to be achieved by 2021 with some exceptions. For the Danube, Swieza, Jarft and Elbe RBDs good status is expected to be achieved for all significant pressures by 2021. For the Nemunas and Dniester RBDs, good status is expected to be achieved by 2027. For the Vistula, Oder and Pregoya RBDs good status is not expected to be achieved for all significant pressures by 2027. For example, all groundwater bodies affected by point sources from waste disposal sites in the Vistula RBD are expected to achieve good status by 2021, but for those affected by diffuse agricultural pollution will not be expected to be achieved by 2027. In the Vistula RBD, good status will not be expected to be achieved by 2027, but the gap to good status is expected to reduce for four significant pressures in groundwater (Diffuse – Agricultural; Hydrological alteration - Public

water supply; Groundwater - Alteration of water level or volume; and Nitrate) and for six significant pressures to surface waters (Point – Aquaculture; Diffuse – Agricultural; Diffuse - Discharges not connected to sewerage network; Diffuse – Mining; Hydromorphological alteration – Other; and Anthropogenic pressure – Other). No progress is expected at all from 2015 in addressing significant pressures from mining on surface waters in the Vistula RBD, and from Hydrological alteration - Public water supply, nickel and its compounds, ammonium and nitrogen in groundwater in the Oder RBD.

Cost-effectiveness analysis is an appraisal technique that provides a ranking of alternative measures on the basis of their costs and effectiveness, where the most cost-effective has the highest ranking. Cost effectiveness analysis was not undertaken for the first PoM but for the second PoM it was reported that a quantitative cost-effectiveness analysis has been carried out in all 10 RBDs for supporting the selection of measures proposed under the 2015-2021 PoM. This was followed-up as part of this assessment but no direct information could be found as to how the cost effectiveness analysis contributed to the prioritisation of the measures. From the information provided it appears that there has been some prioritisation of measures for the second PoM but it is not clear how this has been carried out[90].

A critical factor in the success of the implementation of the PoM is the availability of funding to support the investments required. For the first PoM (2009-2015), Poland reports to have invested a total (reported at national level only) of €10 780 million on Article 11(3)(a) requirements (measures required to implement Community legislation for the protection of water) and €37.39 million on Articles 11(3)(b-l), 11(4) and 11(5) requirements (all other measures). A total investment of €10.958 million was reported for all measures. These figures are inconsistent with each other. For the second PoM (2015-2021) capital investments required for Article 11(3)(a) requirements (measures required to implement Community legislation for the protection of water) are given for six of the RBDs (Danube, Vistula, Elbe, Oder, Pregolya and Nemunas), zero for the remaining four RBDs (one of these, the Ucker RBD is not relevant as there are no SWBs and no significant pressure on share of GWB – see above and explained in Annex 0). No annual operational and maintenance costs were reported for Article 11(3)(a). Capital investment and annual costs for Articles 11(3)(b-l), 11(4) and 11(5) requirements are also presented, except for two RBDs at zero including Ucker which is not relevant, but a modest amount of annual costs are expected in both of these. The reporting of the European Union funding received was not particularly clear for the first PoM. From the information reported it is assumed that a total of €8 663 million of European Union funds was received for

[90] Poland clarified that the selection was based on efficiency of measures and feasibility of implementation, with details provided in the background document on update of the PoM (update of the 'Program wodno-środowiskowykraju')

eight of the 10 RBDs, and €0.03 million for the remaining two RBDs. For the second PoM expected European Union funding figures are given separately for all 10 RBDs.

Poland reported that clear financial commitments have been secured for PoM in all 10 RBDs in Poland and for all relevant sectors. Transport, energy, aquaculture and recreation were reported to be not relevant in any of the 10 RBDs in Poland, but it should be noted that up to 10% of surface water bodies in the Vistula and Oder RBDs are not expected to achieve good status/potential by 2027 due to pressures from the aquaculture sector.

It was reported that there was no joint consultation carried out on the RBMPs and Marine Strategy in Poland. However the preparation of the RBMP and PoM has been reported to be co-ordinated with the implementation of the Marine Strategy Framework Directive.[91]

The RBMPs and Floods Directive[92] Flood Risk Management Plans were not integrated into a single RBMP in Poland, but closely co-ordinated, i.e. joint consultation was carried out on the RBMPs and Flood Risk Management Plans, and the objectives and requirements of the Floods Directive were considered in the second RBMPs and PoM in all 10 RBDs. Poland indicated that specific win-win measures in terms of achieving the objectives of the WFD and Floods Directive, drought management and use of Natural Water Retention Measures have been included in the PoM in all 10 RBDs. The design of new and existing structural measures, such as flood defences, storage dams and tidal barriers, have been adapted to take into account WFD environmental objectives and clear financial commitments have been secured for the implementation of the PoM in the flood protection sector in all 10 RBDs. Article 9(4) has been applied to impoundments for flood protection in Poland in all RBDs[93].

9.1.2 Measures related to other significant pressures

Other significant pressures in Poland were reported as "˜anthropogenic – other' or "unknown' or "historic pollution'. Information has been reported for surface water bodies only, except for the Oder and Vistula RBDs where information is also provided for groundwater bodies. The indicators of the gap to good status for each other significant pressures and the indicators of progress expected from the corresponding KTMs were reported for 2015, 2021 and 2027 with

[91] Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0056

[92] Directive 2007/60/EC on the assessment and management of flood risks entered into force on 26 November 2007http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32007L0060

[93] Poland clarified that "the environmental analysis of projects and activities carried out for the needs of the FRMP is directly reflected in the process of the RBMPs update. In addition, the planned non-technical measures (for example, renaturalisation of riverbanks) complement measures planned in the RBMPs in terms of achieving the objectives of the WFD"

improvements in status expected from 2015 to 2027 with most water bodies expected to achieve good status by 2021, and the remainder by 2027.

9.1.3 Mapping of national measures to Key Types of Measure

It was expected that Member States would be able to report their PoM by associating their national measures with predefined KTMs. KTM are expected to deliver the bulk of the improvements through reduction in pressures required to achieve WFD Environmental Objectives. A Key Type of Measure may be one national measure but it would typically comprise more than one national measure. Member States are required to report on the national measures associated with the KTMs, and whether the national measures are basic (Article 11(3)(a) or Article 11(3)(b-l)) or supplementary (Article 11(4)).

Table 9.1 summarises the number of national measures that have been mapped to the relevant KTMs in Poland. Also shown is the number of RBDs for which the KTM has been reported. ***Table 9.2*** then summarises the type of basic measures associated with the national measures mapped against the KTM.

Table 9.1 Mapping of the types of national measures to Key Types of Measure in Poland

Key Type of Measure	National basic measures	National supplementary measures	Number of RBDs where reported
KTM1 - Construction or upgrades of wastewater treatment plants	36		10
KTM10 - Water pricing policy measures for the implementation of the recovery of cost of water services from industry	10		10
KTM13 - Drinking water protection measures (e.g. establishment of safeguard zones, buffer zones etc.)	61		10
KTM14 - Research, improvement of knowledge base reducing uncertainty	82	31	10
KTM15 - Measures for the phasing-out of emissions, discharges and losses of Priority Hazardous Substances or for the reduction of emissions, discharges and losses of Priority Substances	30	5	10
KTM19 - Measures to prevent or control the adverse impacts of recreation including angling	104		10
KTM2 - Reduce nutrient pollution from agriculture	170	5	10
KTM20 - Measures to prevent or control the adverse impacts of fishing and other exploitation/removal of animal and plants		42	10
KTM21 - Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure	307	3	10

Key Type of Measure	National basic measures	National supplementary measures	Number of RBDs where reported
KTM25 - Measures to counteract acidification	10		10
KTM3 - Reduce pesticides pollution from agriculture.	80		10
KTM4 - Remediation of contaminated sites (historical pollution including sediments, groundwater, soil)		3	2
KTM5 - Improving longitudinal continuity (e.g. establishing fish passes, demolishing old dams)	20	6	10
KTM6 - Improving hydromorphological conditions of water bodies other than longitudinal continuity	26	23	10
KTM7 - Improvements in flow regime and/or establishment of ecological flows	50		10
KTM8 - Water efficiency, technical measures for irrigation, industry, energy and households	24	4	10
KTM9 - Water pricing policy measures for the implementation of the recovery of cost of water services from households	10		10
KTM99 - Other key type measure reported under PoM - Administrative	36	6	10
KTM99 - Other key type measure reported under PoM - Conservation of Natura 2000	160		10
KTM99 - Other key type measure reported under PoM - Education measure	40		10
KTM99 - Other key type measure reported under PoM - International coordination	10		10
KTM99 - Other key type measure reported under PoM - measure in river water bodies limiting significant pressure on lake water body		3	3
KTM99 - Other key type measure reported under PoM - Measure on national level limiting significant pressure on surface water body		3	3
KTM99 - Other key type measure reported under PoM - Measure to optimize water consumption	4		2
KTM99 - Other key type measure reported under PoM - Measures to specify conditions of water use	10	5	10
KTM99 - Other key type measure reported under PoM - Obtaining permit	30		10
KTM99 - Other key type measure reported under PoM - Prevention of major accidents	90		10
KTM99 - Other key type measure reported under PoM - Spatial planning	10		10
Total number of Mapped Measures	**1410**	**139**	**10**

Source: Member States reports to WISE

Table 9.2 Type of basic measure mapped to Key Type of Measures in Poland

Key Type of Measure	Basic Measure Type															
	Accidental pollution	Controls water abstraction	Cost recovery water services	Efficient water use	Habitats or Birds	Hydromorphology	IPPC IED	Nitrates	Other	Point source discharges	Pollutants diffuse	Pollutants direct groundwater	Protection water abstraction	Recharge augmentation groundwaters	Surface Priority Substances	Urban Waste Water
KTM1 - Construction or upgrades of wastewater treatment plants										13						23
KTM10 - Water pricing policy measures for the implementation of the recovery of cost of water services from industry			10													
KTM13 - Drinking water protection measures (e.g. establishment of safeguard zones, buffer zones etc.)													61			
KTM14 - Research, improvement of knowledge base reducing uncertainty				2		20			60							
KTM15 - Measures for the phasing-out of emissions, discharges and losses of Priority Hazardous Substances or for the reduction of emissions, discharges and losses of Priority Substances															30	
KTM19 - Measures to prevent or control the adverse impacts of recreation including angling	1								103							
KTM2 - Reduce nutrient pollution from agriculture								120			50					
KTM21 - Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure	20				5				45	79	94	10				54
KTM25 - Measures to counteract acidification								10								
KTM3 - Reduce pesticides pollution from agriculture.											80					
KTM5 - Improving longitudinal continuity (e.g. establishing fish passes, demolishing old dams)						20										
KTM6 - Improving hydromorphological conditions of water bodies other than longitudinal continuity						26										
KTM7 - Improvements in flow regime and/or establishment of ecological flows		50														
KTM8 - Water efficiency, technical measures for irrigation, industry, energy and households		4		20												
KTM9 - Water pricing policy measures for the implementation of the recovery of cost of water services from households			10													
KTM99 - Other key type measure reported under PoM	90	12		62	15	10	10		175		6			10		

Source: Member States reports to WISE

Key

'Accidental pollution' = Article 11(3)(l): Any measures required to prevent significant losses of pollutants from technical installations and to prevent and/or reduce the impact of accidental pollution incidents.
'Controls water abstraction' = Article 11(3)(e): Controls over the abstraction of fresh surface water and groundwater and impoundment of fresh surface waters including a register or registers of water abstractions and a requirement for prior authorisation of abstraction and impoundment.
'Cost recovery water services' = Article 11(3)(b): Measures for the recovery of cost of water services (Article 9).
'Efficient water use' = Article 11(3)(c): Measures to promote efficient and sustainable water use.
'Habitats or Birds' = Habitats Directive (92/43/EEC) or Birds Directive (2009/147/EC)
'Hydromorphology' = Article 11(3)(i): Measures to control any other significant adverse impact on the status of water, and in particular hydromorphological impacts.
'IPPC IED' = Integrated Pollution Prevention Control Directive (96/61/EC) and the Industrial Emissions Directive (2010/75/EU).
'Nitrates' = Nitrates Directive (91/676/EEC).
'Other' = Other Directives mentioned in Part A of Annex VI of the WFD.
'Point source discharges' = Article 11(3)(g): Requirement for prior regulation of point source discharges liable to cause pollution.
'Pollutants diffuse' = Article 11(3)(h): Measures to prevent or control the input of pollutants from diffuse sources liable to cause pollution.
'Pollutants direct groundwater' = Article 11(3)(j): Prohibition of direct discharge of pollutants into groundwater.
'Protection water abstraction' = Article 11(3)(d): Measures for the protection of water abstracted for drinking water (Article 7) including those to reduce the level of purification required for the production of drinking water.
'Recharge augmentation groundwaters' = Article 11(3)(f): Controls, including a requirement for prior authorisation of artificial recharge or augmentation of groundwater bodies.
'Surface Priority Substances' = Article 11(3)(k): Measures to eliminate pollution of surface waters by Priority Substances and to reduce pollution from other substances that would otherwise prevent the achievement of the objectives laid down in Article 4.
'Urban Waste Water' = Urban Waste Water Treatment Directive (91/271/EEC).

9.1.4 Pressures for which gaps to be filled to achieve WFD objectives and the Key Types of Measure planned to achieve objectives

Member States are required to report the gaps that need to be filled to achieve WFD environmental objectives in terms of all significant pressures on surface waters and groundwaters, in terms of Priority Substances causing failure of good chemical status and in terms of River Basin Specific Pollutants causing failure of good ecological status/potential. Member States were asked to report predefined indicators of the gaps to be filled or other indicators where relevant. Values for the gap indicators were required for 2015 and 2021, and were optional for 2027.

The information reported in WISE on the gaps to fulfil to achieve good ecological status include detailed data on the significant pressures on surface and groundwaters that may cause failure on the environmental objectives. For chemical status, the Member States reported the specific chemical substances causing failure.

This information is reported at the sub-unit level. Sub-units are smaller geographic areas within particular RBDs identified by Member States. Not all Member States have defined and reported sub-units.

Member States were required to report which KTMs are to be made operational to reduce the gaps to levels compatible with the achievement of WFD environmental objectives. A number of indicators were predefined for each KTM. Values of the indicators for the second and subsequent planning cycles were also to be reported to give an indication of the expected progress and achievements: the values for 2027 could be optionally reported. This means that the value of the indicator will be reduced with time as measures are implemented. A value of zero is comparable with 100 % good ecological status or potential or good chemical status.

This information was reported at sub-unit level, or at RBDs level if sub-units have not been reported by the Member State.

9.2 Main changes in implementation and compliance since the first RBMPs

In general, the amount and quality of readily available information improved between the two reporting cycles because of the revised reporting requirements. Often there was no equivalent information for the first RBMPs and it was difficult, therefore, to make direct comparisons

between the second RBMPs on what has changed significantly. However, information on links between pressures and measures were provided in the second cycle where this was not available in the first RBMPs. It was not clear for the first PoM how measures had been selected, but for the second RBMPs it was reported that a quantitative cost effectiveness analysis was carried out for supporting the selection of measures. However, it was not clear how this, or other analyses, were combined for the prioritisation of measures. Information was reported for the second RBMPs on the scale and progress with implementation of measures with the majority of measures leading to the achievement of WFD objectives by 2027. Poland did not provide an explicit summary of the changes made between cycles for this topic[94].

9.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- *Recommendation: Where there are currently high uncertainties in the characterisation of the RBDs, identification of pressures, and assessment of status, these need to be addressed in the current RBMPs, to ensure that adequate measures can be put in place before the next RBMPs.*

  Assessment: Information on the significant pressures and how they are linked to KTMs was reported to WISE – this information was not available for the first RBMPs. The issues of uncertainty in the characterisation and assessment of status have been assessed under Topics 2, 3 and 4. As far as it can be ascertained for this topic, this recommendation has been fulfilled.

- *Recommendation: Quantitatively apportion the contribution each pressure is making to the failure of WFD objectives at the RBD, sub-basin and water body level so that cost-effective measures can be developed and implemented.*

  Assessment: Poland reported the results of an analysis of the gap to good status in nine of the 10 RBDs (the Ucker RBD is not relevant). Indicators were reported for significant pressures for 2015, 2021 and 2027, with most water bodies expecting to have achieved good status by 2027. Poland has identified those significant

[94] Poland clarified that it had "summarised the evaluation of implementation of the PoM included in the first RBMPs. It is presented in the background document on the Review and update of PoM ('Program wodno-środowiskowykraju')". This shows that the final selection of measures from the point of view of achieving environmental objectives and costs was possible after analysing the effectiveness and feasibility of the indicated sets of measures, and then its optimisation and conducting the cost-effectiveness analysis.

pressures where progress cannot be made, or where, although significant progress will be made, full compliance is not expected to be achieved by 2027. Poland has reported that a quantitative cost effectiveness analysis has been carried out, but it is not clear from the information available how this has been used to prioritise measures, nor how other analyses have contributed to the prioritisation. Poland clarified that it "has summarised the evaluation of implementation of the PoM included in the first RBMPs. It is presented in the background document on the Review and update of PoM ('Program wodno-środowiskowykraju')." This shows that the final selection of measures from the point of view of achieving environmental objectives and costs was possible after analysing the effectiveness and feasibility of the indicated sets of measures, and then its optimisation and conducting the cost-effectiveness analysis. With this clarification it can be determined that this recommendation has been fully fulfilled.

- *Recommendation: Make clearer the basis for the selection of the measures and whether a cost-effectiveness analysis of measures (Article 5 and Annex III WFD) has been carried out. There is often a lack of information on identification of pressures and their sources, on how measures were selected and on links between pressures/uses and measures.*

  Assessment: Poland reported that a quantitative cost-effectiveness analysis was carried out in all 10 RBDs for supporting the selection of measures proposed under the 2015-2021 PoM. There is information on links between pressures and measures but not on identification of pressures and their sources and how measures were selected. No clear information could be found in the RBMP or background documents on how cost effectiveness analyses, or other analyses carried out had been used for the prioritisation of measures. Poland clarified that the selection was based on efficiency of measures and feasibility of implementation, with details provided in the background document on update of the PoM (update of the 'Program wodno-środowiskowykraju'. The final selection of basic and supplementary measures was done upon assessment of their efficiency and possibility to be implemented. Additionally cost-effectiveness analysis has been undertaken for proposed measures of both kinds. This recommendation has been partially fulfilled, because although the method of prioritisation is now clearer, the linkage of pressures and sources is still not clear.

- *Recommendation: Provide in the second RBMPs information about monitoring of progress on the implementation of the current Programme of Measures, and the assessment of its effectiveness.*

  Assessment: Progress has been made. Information on indicators of gaps to good status and the expected implementation of KTMs were well reported. Generally the status of water bodies was expected to improve from 2015 to 2027 with most expected to have achieved good status by 2021 or 2027 with some exceptions. This recommendation has been fulfilled.

- *Recommendation: Meaningful information regarding the scope, the timing and the funding of the measures should be included in the Programme of Measures so that the approach to achieve the objectives is clear and the ambition in the Programme of Measures is transparent. All the relevant information on basic and supplementary measures should be included in the summary of the Programme of Measures to ensure transparency of the planned actions for the achievement of the environmental objectives set out in the WFD.*

  Assessment: Information regarding timing and funding of basic and supplementary measures were generally provided, although there was some variation between RBDs. It was reported that clear financial commitments have been secured for the PoM in all 10 RBDs in Poland. This includes all sectors: agriculture, industry, urban, hydropower and flood protection. Transport, energy, aquaculture and recreation were reported to be not relevant, although it should be noted that aquaculture has been identified as causing a failure of good status in surface water bodies in some RBDs. Indicators of the progress expected in the implementation of the KTMs have been provided. This recommendation has been fulfilled.

- *Recommendation: Provide more information concerning the identification of pressures, selection of measures and a commitment to indicating the links between the pressures and measures in the second RBMPs.*

  Assessment: Information is provided on the links between the pressures and measures in the second RBMPs although no information is provided on how these measures were selected (such as: the actual criteria or thresholds used to define significance; the basis of methods for assessing pressures; how pressures arising from flow and morphological alterations were quantified, and; the approach for selection of measures). This recommendation has been partially fulfilled.

- Recommendation: *More information should be provided regarding the Programme of Measures. In particular there is a need for a clear link between pressures and measures, a clear identification of the costs of measures, who is responsible for their implementation and on how their effectiveness will be monitored. More effort should be put into identifying and linking the whole RBMPs of the planning process, in particular regarding the monitoring network.*

  Assessment: A quantitative cost-effectiveness analysis was carried out and measures were identified for specific water bodies. There was a link between pressures and measures. No information was provided on impacts in relation to apportionment of pressures between sources and sectors and whether measures are focused on sectors contributing the most pressures or for which measures were considered to be most effective. Also no information was provided on any voluntary measures. Information on who is responsible for implementation of measures and on their financing has been provided. No information was provided for the part of this recommendation relating to the monitoring network. For this topic, this recommendation has been partially fulfilled.

- *Recommendation: The adopted measures in the Programme of Measures are not based on the status assessment of water bodies. This is the result of the absence of fully developed status assessment methods and classification systems in Poland at the time of publication of the RBMPs.*

  Assessment: The number of water bodies failing to be of good status was reported against significant pressures, and the KTMs that are operational to address those pressures were also reported. Clear indicators of the level of progress to be achieved in both the gap to good status, and the level of implementation of the measures are in place and were reported. An assessment of the assessment methods and classification systems is addressed by topics 2, 3 and 4. As far as this topic is concerned, this recommendation has been fulfilled.

- *Recommendation: Carry out the quantitative assessment to assess the gap for all, not just some measures (e.g. the National Implementation Programme). The extent of measures should be clear from the Programme of Measures and how/by when the status of water bodies will be good.*

  Assessment: The number of water bodies failing to be of good status was reported against significant pressures, and the KTMs that are operational to address those

pressures were also reported. Clear indicators of the level of progress to be achieved in both the gap to good status, and the level of implementation of the measures are in place and were reported, together with the dates by which good status is expected to be achieved. Those significant pressures that cannot be fully addressed by 2027 were clearly identified, together with the number of water bodies expected to be affected. This recommendation has been fulfilled.

- Recommendation: *It is not clear whether Poland is planning to include the cost-effectiveness analysis in this RBMP update or how it plans to assess whether pressures were tackled effectively.*

  Assessment: Poland reported that a quantitative cost-effectiveness analysis has been carried out in all 10 RBDs for supporting the selection of measures proposed under the 2015-2021 PoM. However, no details were provided of how this had been used in the selection of measures[7]. This recommendation has therefore been partially fulfilled.

Topic 10 Measures related to abstractions and water scarcity

10.1 Assessment of implementation and compliance with WFD requirements in second RBMPs

10.1.1 Water exploitation and trends

Water abstraction pressures were not reported to be relevant for Poland. To put this into context, as stated in Chapter 5, in total 13 groundwater bodies (7%) were at risk of failing good quantitative status and they were located in the Vistula RBD and the Oder RBD. Of these, 10 groundwater bodies were at risk of failing good quantitative status due to failing the water balance test. Therefore, whilst abstraction pressures may not be considered relevant, there is some evidence to suggest that there are a fairly small number of circumstances where the long-term annual average rate of abstraction exceeds the available groundwater resource which may result in a decrease of groundwater levels. The Water Exploitation Index + has not been calculated, and no water quantity data were reported to support the European State of the Environment Report in relation to Water Quantity. The RBMPs do not include a water resource allocation and management plan.

10.1.2 Main uses for water consumption

Regarding water consumption, no information on abstractions from sectors was provided as this was either not relevant or not available.

10.1.3 Measures related to abstractions and water scarcity

Regarding basic measures (Article 11(3)(e)), there is a concession, authorisation and/or permitting regime to control surface and groundwater and a register of surface and groundwater use (but not for water impoundment); and small abstractions are exempted from these controls.

Measures on Article 11(3)(c) for sustainable and efficient water use have been implemented in the previous RBMPs, and no new measures and/or significant changes are reported to be planned for the 2016-2021 period.

Measures for the prior authorisation of artificial recharge or augmentation of groundwater bodies (Article 11(3)(f)) were implemented in the first RBMPs, and no new measures and/or significant changes are reported to be planned for the 2016-2021 period.

Complementary measures under KTMs were reported for addressing abstraction pressures, and include KTM 8 - 'Water efficiency, technical measures for irrigation, industry, energy and households'.

Water reuse was also foreseen as a measure.

10.2 Main changes in implementation and compliance since first RBMPs

No changes have been identified regarding water scarcity and abstraction pressures.

10.3 Progress with Commission recommendations

There were no Commission recommendations based on the first RBMPs and first PoM for this topic.

Topic 11 Measures related to pollution from agriculture

11.1 Assessment of implementation and compliance with WFD requirements in second RBMPs

In the first RBMPs, agriculture was indicated as a significant pressure on the water resource in all 10 RBDs. In the second RBMPs, agriculture was only reported as a significant pressure in the Vistula RBD (groundwater and surface waters), the Swieza RBD (surface waters), the Oder RBD (surface waters and groundwater), the Pregolya RBD (surface waters), and the Nemunas RBD (surface waters)[95].

The main pressures for groundwater were reported to be chemical, microbiological and nutrient pollution, as well as diminution of the quality of associated surface waters for chemical or quantitative reasons. In the Oder RBD saline intrusion was reported. For surface waters acidification was reported in the Vistula and Pregolya RBDs, chemical pollution and altered habitats in the Vistula, Oder and Pregolya RBDs, nutrient and organic pollution in the Vistula, Swieza, Oder, Pregolya and Nemunas RBDs, saline intrusion in the Vistula and Oder RBDs. KTMs related to agriculture were applied in all RBDs. KTM12 - Advisory services for agriculture, KTM13 - Drinking water protection measures (e.g. establishment of safeguard zones, buffer zones etc.), KTM17 - Measures to reduce sediment from soil erosion and surface run-off (basic and supplementary) KTM23 - Natural water retention measures and KTM3 - Reduce pesticides pollution from agriculture were applied in all RBDs. It was stated that these measures have already been implemented in the first RBMPs. A gap assessment was not carried out specifically for agricultural measures and it remains unclear how measures are contributing to close the gap.

Implementation of basic measures (the minimum requirement to be complied with) under Article 11(3)(h) for the control of diffuse pollution from agriculture at source have been applied in all RBDs. In the Vistula and Oder RBDs the rules were applied only in Nitrate Vulnerable Zones. In all other RBDs the same rules were applied across the whole RBD. General binding rules to control diffuse nitrate pollution from agriculture were applied in all RBDs.

[95] Poland subsequently clarified that there is no surface waterbody established in the Ucker RBD, hence there is no monitoring conducted, no pressure on surface water identified, no environmental objectives, and no derogations established, etc. However, a part of the groundwater body coded as PLGW6003 is located in the Ucker RBD.

It was also stated in the RBMP that the use of fertilisers is prohibited within Nitrate Vulnerable Zones on soils flooded with water, covered with snow, frozen to a depth of 30 centimetres or during rainfall; natural fertilizers in liquid and nitrogen form - on soils without vegetation where slopes exceed 10%; fertilizers in liquid form - during cultivation of plants intended for direct human consumption. Prohibition of using agro-aviation equipment under the indicated climatic conditions and at a distance of 500 metres from watercourses and water reservoirs was also identified. In addition, the prohibition of the use of fertilizers at a specific distance from lakes, water reservoirs with the indicated area, watercourses, ditches, canals, water protection zones and areas of the coastal strip is also reported to be in place.

There were other additional control measures reported that would contribute to prevention of nitrogen, phosphorus and pesticides entering drinking water sources such as:

- prohibition of the use of animal fertilizers in the period from first of December to the end of February;
- development of a set of principles of good agricultural practice (including changes taking place in the agricultural sector);
- development of a PoM for each designated area particularly vulnerable to pollution with nitrogen compounds from agricultural sources;
- determination of waters sensitive to pollution with nitrogen compounds from agricultural sources and especially vulnerable areas, from which the outflow of nitrogen to sensitive waters should be limited;
- provision of adequate storage facilities for natural liquid fertilizers limiting the amount of animal fertilizers used during the year - it cannot contain more than 170 kilogrammes nitrogen in the pure component per hectare of agricultural land;
- control of nitrate concentrations in waters sensitive to pollution with nitrogen compounds from agricultural sources; and
- assessment of water eutrophication.

Drinking water safeguard zones have been established for water bodies from which water is abstracted for human consumption[96].

[96] Poland subsequently clarified that according to Article 54 of the Act of 18 July 2001 - Water Law (valid at the date of preparation of the 2nd RBMP), the use of fertilizers and pesticides may be prohibited or limited on the

It was stated in the PoM document that specific measures have been identified for the water body in which these zones are located. No further details were given in supporting documents in relation to safeguard zones. It was stated (in the PoM document) that, as part of good agricultural practices, it is also recommended to undertake measures aimed at natural sorption and accumulation of nitrates and phosphates introduced into circulation through natural ecosystems. Buffer zones (in the form of rushes, willows or extensively used meadows) present between agricultural areas and water ecosystems contribute to the reduction of surface runoff, as well as significantly limiting or even eliminating the inflow of fertilizers to the groundwater. These measures are not directly regulated by law, but they are an important recommendation from the standpoint of the need to protect water resources. Buffer zones prevent the flow of nutrients as well as contributing to the preservation of biodiversity. Both the establishment and maintenance of buffer zones, as well as soil liming, are indicated in the national PoM and constitute important measures contributing to the achievement of environmental objectives.

Farmers and Farmers' Unions have been consulted under the public consultation process in all RBDs.

Financing of measures has been secured in all of the RBDs.

11.2 Main changes in implementation and compliance since first RBMPs

In the first RBMPs agriculture was identified as exerting a significant pressure on water resources in all RBDs[97]. In the second RBMPs it was only reported in the Vistula, Swieza, Oder, Pregolya and Nemunas RBDs. The surface covered by Nitrate Vulnerable Zones has been increased from the first to the second RBMPs, and since 2017 Poland applies a whole territory approach to implement the Nitrates Directive. Consequently, obligations and measures of the Nitrates Action Programme now apply to all farmers.

11.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

area of drinking water safeguard zones. These rules were determined by the ordinance of the director of the regional water management authority. Currently, the drinking water safeguard zones covering only the area of direct protection are established by the competent authority of the National Water Holding - Polish Waters, and the drinking water safeguard zones covering both the area of direct protection and the area of indirect protection are established by the voivode.

[97] Poland subsequently informed the European Commission that for each measure identified and planned in the RBMPs (PoM) a competent authority is responsible for its implementation. Estimated costs were assigned and reported. Potential source of funding are indicated in the plans, but it does not mean that financing is ensured.

- Recommendation: *Designate sufficient number of ZVNP (Nitrates Directive*[98] *Article 3) in the second RBMPs cycle and adopt measures to effectively combat nitrate pollution in these zones as required by the Nitrates Directive and Article 11(3)(a) of the WFD.*

  Assessment: The number of Nitrate Vulnerable Zones increased between the first and second RBMPs, and since 2017 the whole territory is designated as Nitrate Vulnerable Zone. The Nitrate Actions Programme now applies to all farmers, but its effectiveness has not been assessed. The first part of this recommendation related to ZVNP has been fulfilled, however further investigation on the new Action Programme would be needed to assess the effectiveness of its measures[99].

- Recommendation: *Adopt measures to improve nutrient balances oriented towards manure handling and recycling on farms, decrease nutrient discharges (fertiliser and pesticide applications), perform more controls and monitoring, etc. This should be followed by identification of financing sources designed to fund these measures.*

  Assessment: The RBMPs contained no information on measures to improve nutrient balances or manure handling and recycling on farms, or to decrease nutrient discharges (fertiliser and pesticide applications). Rural Development Programmes are mentioned as a funding source for measures in relation to nutrient pollution. The evidence suggests that this recommendation has not been fulfilled[100].

  Recommendation: *Address agriculture's impact with basic measures to ensure the achievement of the established objectives. If basic measures do not suffice to achieve the environmental objectives, the Government should establish supplementary measures (Article 11(4) and part B of Annex VI WFD).*

  Assessment: The recommendation was partly fulfilled. No specific gap assessment was carried out therefore it remains unclear how the measures taken for the second cycle are expected to contribute to the achievement of WFD objectives. The implementation of basic measures Article 11(3)(h) for the control of diffuse pollution from agriculture at

[98] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:31991L0676

[99] Poland subsequently clarified that the Article of 20 July 2017 on Water Law introduces additional measures to reduce the pollution of waters with nitrates from agricultural sources, as well as the rules for controlling the application of the PoM and the penalty for breaching objectives of the Nitrates Action Programme.

[100] Poland subsequently clarified that the Act of 10 July 2007 on fertilizers and fertilization imposes an obligation to prepare a fertilization plan. In addition, the obligation to carry out the nitrogen balance is introduced in the action programs for the NVZs. A new national Nitrates Action Programme will come into force in July 2018, including the obligation to prepare a nitrogen fertilization plan.

source takes place in all RBDs. However, in RBDs with agricultural pressures from nutrients supplementary measures are applied as well.

- Recommendation: *Agriculture is indicated as exerting a significant pressure on the water resource in all RBDs. This should be translated into a clear strategy that defines the basic/mandatory measures that all farmers should adhere to and the additional supplementary measures that can be financed. This should be developed with the farming community to ensure technical feasibility and acceptance. There needs to be a very clear baseline so that farmers know the rules and the authorities in charge of the Common Agricultural Policy funds can adequately set up Rural Development Programmes and cross compliance water requirements.*

  Assessment: There is little or no information available in the RBMPs to indicate that such a strategy has been developed or is under development[101].

[101] Poland has indicated that its 2nd RBMPs include a reference to a strategy for the sustainable development of rural areas, agriculture and fisheries for 2012-2020 and that among its objectives are the protection water quality, the rational use of water resources for agriculture and fisheries, and increasing water retention.

Topic 12 Measures related to pollution from sectors other than agriculture

12.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

In the context of this topic, pollution is considered in terms of nutrients, organic matter, sediment, saline discharges and chemicals (priority substances, river basin specific pollutants, groundwater pollutants and other physico-chemical parameters) arising from all sectors and sources apart from agriculture.

Key types of measures (KTM) are groups of measures identified by Member States in their Programmes of Measures which target the same pressure or purpose. A KTM could be limited to one national measure but it would typically comprise more than one national measure. The same individual measure can also be part of more than one KTM because it may be multipurpose, but also because the KTMs are not completely independent of one another.

The following KTMs relevant to non-agricultural sources of pollution causing failure of WFD objectives were reported for Polish RBDs:

- KTM 1 – "Construction or upgrades of wastewater treatment plants"
- KTM 4 – "Remediation of contaminated sites (historical pollution including sediments, groundwater, soil)"
- KTM 8 – "Water efficiency, technical measures for irrigation, industry, energy and households"
- KTM 14 – "Research, improvement of knowledge base reducing uncertainty"
- KTM 15 – "Measures for the phasing-out of emissions, discharges and losses of Priority Hazardous Substances or for the reduction of emissions, discharges and losses of Priority Substances"
- KTM 21 – "Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure".
- KTM 99 – "Other key type measure reported under PoM"

KTMs relevant to non-agricultural sources of pressures causing failure of WFD objectives have not been reported to WISE for the Elbe or Ucker RBDs[102].

The WFD specifies that the PoM shall include, as a minimum, "basic measures" and, where necessary to achieve objectives, "supplementary measures" when basic measures are not enough to address specific significant pressures (see the Chapter 9 in this report). Quantitative information on basic and supplementary measures used to tackle pollution from non-agricultural sources (number of measures per KTM) was provided for eight out of 10 Polish RBDs, i.e. not for the Elbe or Ucker RBDs[103].

Quantitative information on types of basic measures to tackle pollution from non-agricultural sources was provided for 11 measure types.

Poland provided more targeted information on basic measures required under Article 11(3)(c to k). Use of an authorisation and/or permitting regime to control waste water point source discharges (Basic measures Article 11(3)(g)) was reported for all RBDs for both surface and groundwater. Registers of waste water discharges (Basic measures Article 11(3)(g)) were available in all RBDs for surface and groundwater. Small waste water discharges were exempted from controls in all RBDs. There is prohibition of all direct discharges to groundwater in all RBDs.

Measures were reported to be in place to eliminate/reduce pollution from Priority Substances and other substances in all RBDs.

12.2 Main changes in implementation and compliance since the first RBMPs

No information was found in the first RBMP on substance-specific measures. In the second RBMPs KTMs were reported for significant pressures from specific Priority Substances and from River Basin Specific Pollutants causing non-compliance for the Vistula RBD, the Jarft RBD, the Elbe RBD, the Oder RBD, the Pregolya RBD, the Nemunas RBD and the Dniester RBD. KTM 15 has been mapped against national measures and is also reported to be tackling

[102] Poland subsequently clarified that there is no surface water body in the Ucker RBD and that only basic national measures have been planned for the Ucker RBD because of its specificity. It was also clarified that 27 KTMs are indicated for the Elbe RBD in the report, of which 25 are linked to non-agricultural pressures.

[103] Poland subsequently clarified that basic and supplementary measures for the Elbe RBD have been indicated in the report.

significant pressures in all RBDs. Poland has reported that there are measures in place to eliminate/reduce pollution from Priority Substances and other substances in all RBDs[104].

The implementation of KTM1 and KTM21 measures specifically for benzo(b)fluor-anthene, dieldrin, endrin, and aldrin, was reported.

Supporting documentation states that the aim of the Programmes of Measures in Poland is to cease or gradually eliminate the discharge of Priority Substances into the environment. In the Vistula RBMP significant pressures caused by emissions were identified, and based on monitoring data the exceedance of the following Priority Substances in the Vistula RBD was reported: benzo(g, h, i)perylene and indeno(1,2,3-cd)pyrene. The presence of compounds from the polycyclic aromatic hydrocarbons group in waters is associated with atmospheric deposition of pollutants, and their most probable sources are combustion processes in the municipal sector (for example, municipal heating using improper quality of fuel or waste).

Appendix 2 to the Vistula RBMP (the largest RBD) contains information on all the Priority Substances identified in the Vistula RBD. Section 3.1 of the RBMP states that for rivers, the most frequently observed Priority Substances exceedances were for the sum of benzo(g.h.i)perylene and indeno(1,2,3-cd)pyrene, tributyltin compounds and cadmium and its compounds. Similarly, the situation was presented in lakes and water reservoirs, where it was also most frequently reported that the sum of benzo(g.h.i) perylene and indeno(1,2,3-cd) pyrene as well as cadmium and its compounds was exceeded. On the other hand, in the case of transitional and coastal waters, the most frequent exceedances were for nonylphenols, octylphenols, pentachlorobenzene, endosulfan and cyclodiene pesticides as well as hexachlorobutadiene.

The following measures were reported in the Vistula RBMP regarding Priority Substances:

- Measures to eliminate surface water pollution by substances specified in the list of Priority Substances and to gradually reduce pollution by other substances that would otherwise prevent the achievement of environmental objectives;

- The obligation to obtain a water permit for sewage discharges;

[104] Poland subsequently clarified that Priority Substances were identified for seven RBDs: the Vistula RBD, the Elbe RBD, the Oder RBD, the Pregolya RBD, the Nemunas RBD, the Dniester RBD and the Danube RBD. In the other three RBDs no Priority Substances were identified in 2010-2011 and no installations discharging such substances were recognised. Poland also clarified that KTM 15 was mapped against national measures and reported to be tackling significant pressures in all 10 RBDs.

- The obligation to ensure that the limit values for pollutants in wastewater discharged into waters and into the ground are not exceeded;

- Prohibition on the production and use of aldrin, dieldrin, endrin, endosulfan, heptachlor, hexachlorobenzene, hexabromocyclododecane and DDT.

The RBMP included a summary of measures for Priority Substances. The basic measures included the implementation of the review of water permits for discharge of sewage, including substances for which exceedances were found. In addition, measures were planned to conduct an in-depth analysis of the pressures for those water bodies for which it was impossible to identify the reasons for the exceedances based on currently available data. It is stated in the RBMPs that a special group of measures that limit the impact of Priority Substances was the verification of the environmental protection programmes for municipalities in terms of introduction of substances from the polycyclic aromatic hydrocarbons group into the atmosphere. There was no more detail in the RBMP or PoM document on what these special measures are. The verification of the environmental protection programme for municipalities is also mentioned in the explanation of the use of exemptions in Section 5, e.g. verification of the environmental protection programme for the municipality, aimed at detailed recognition and, as a result, limiting this pressure (e.g. low emission pressure for river water body PLRW200062545213), so that it is possible to achieve indicators consistent with the values of good status. It appears that the above mentioned measures are mandatory.

River Basin Specific Pollutants were only reported for the Vistula and Oder and each River Basin Specific Pollutant reported has at least one KTM reported to tackle it, most have two KTMs and some three KTMs reported to tackle this pressure (KTM1 - "Construction or upgrades of wastewater treatment plants", KTM2 - "Reduce nutrient pollution from agriculture", KTM8 - "Water efficiency, technical measures for irrigation, industry, energy and households", KTM14 - "Research, improvement of knowledge base reducing uncertainty", KTM21 - "Research, improvement of knowledge base reducing uncertainty").

The following measures were reported in the RBMP:

- The obligation to obtain a water permit for sewage discharges;

- The obligation to ensure that the limit values for pollutants in wastewater discharged into waters and into the ground are not exceeded;

- Prohibition on the production and use of chlordane, chlordecone, mirex, toxaphene, and hexabromobiphenyl.

Any other measures to prevent significant losses of pollutants from technical installations and to prevent or reduce the impact of accidental pollution, for example from floods, including direct detection and early warning systems for such cases, are listed as: prohibition of locating in areas of special flood hazard new projects that may significantly affect the environment, sewage accumulation, animal manure, chemicals, as well as other materials that may contaminate water, carry out recovery or disposal of waste, including in particular their storage. There is also a summary of measures taken to prevent or decrease the influence of pollution incidents.

There are no measures specifically planned for pollutants causing failure of good chemical status of groundwater; only general measures have been included e.g. the implementation and application of groundwater quality standards and threshold values of pollutant concentrations, implementing measures to prevent or limit the introduction of pollutants into groundwater and prohibition of discharging sewage directly into groundwater. Monitoring of groundwater bodies for chemical status is also listed.

12.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation: *Provide complete information on the level of compliance, and timing to reach compliance, by agglomerations, including information on funding, in accordance with Directive 91/271/EEC (article 15 and following).*

  Assessment: Poland reported that KTM1 - Construction or upgrades of wastewater treatment plants and KTM21 - Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure was in place for eight out of 10 RBDs.

  It was stated in the RBMPs that the Council of Ministers approved the fifth update of the National Municipal Wastewater Treatment Programme, which contains investment plans for the agglomeration in the field of sewerage systems and sewage treatment plants until 2021. No further details are given in the RBMP. The PoM supporting document provides a more detailed summary of investments, such as modernisation of sewer networks, new wastewater treatment plants, modernisation of waste water treatment plants (settlement stage), development and expansion of waste water treatment plants. The document gives summary information about which projects are completed, not completed, in progress or where there is a lack of data. Measures under

the National Municipal Wastewater Treatment Programme are on-going. Some details are given at the regional level in the PoM supporting document. Municipalities are responsible for the implementation in measures in their regions from the implementation of the National Municipal Wastewater Treatment Programme. They include the construction, extension or modernization of municipal wastewater treatment plants as well as the construction and modernization of collective sewer systems. In addition, municipalities carry out activities related to investments in the field of sewage treatment plants in non-commercial areas. Municipalities have also indicated the obligation to conduct control of proceedings in the field of collection of sewage by private users and entrepreneurs and treatment of sewage by private users at a frequency of at least every three years. The obligation to perform this task arises from Article 3 par. 3 of the Act of 13 September 1996 on maintaining cleanliness and order in communities. Poland informed that it prepared and reported in 2017 to the Commission the Masterplan for implementation of the Urban Wastewater Directive[105] (91/271/EEC). The Masterplan was drafted upon the 2017 National Municipal Wastewater Treatment Programme (the fifth update of the Programme, 'AKPOŚK 2017') and contains complete information on compliance between agglomerations and the Directive and deadlines and costs of investments to meet requirements of the Urban Wastewater Directive and improve status of the environment.

The recommendation has been largely fulfilled.

- Recommendation: *control of chemical pollution: A clear strategy to tackle chemical pollution should be in place. This should be based on a detailed pressure and impact assessment which clearly identifies the causes of failure for water bodies. Basic and supplementary measures should be identified to address pollution from chemical substances, these should be targeted to specific water bodies that are failing to achieve good status, or are at risk of deterioration. A cost-effectiveness analysis of the PoM should be carried out and reported.*

  The RBMPs identify Priority Substances (for the Vistula, Elbe, Oder, Pregolya, Nemunas and Dniester RBDs) and River Basin Specific Pollutants (for the Vistula and Oder RBDs) causing non achievement of good status in Poland. In the second RBMPs, KTMs were reported for significant pressures from individual Priority Substances and River Basin Specific Pollutants causing non-compliance for the Vistula, Jarft, Elbe, Oder, Pregolya, Nemunas and Dniester RBDs. KTM 15 has been mapped against

[105] Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0271

national measures and also reported to be tackling significant pressures in all RBDs. Poland has reported that measures are in place to eliminate/reduce pollution from Priority Substances and other substances in all RBDs.

In accordance with Article 113 paragraph 3 point 1a of the Water Law 2017, the lists of emissions and concentration levels drawn up by the directors of water regions when preparing planning documentation shall take into account: 1) Priority Substances specified in the regulations issued on the basis of Article. 38l par. 2 of the act - Water Law, and, 2) other substances than those indicated in point 1, causing pollution - for which environmental quality standards have been determined. The purpose of preparation of such lists is to identify the substances in question, to indicate the sources of their emissions to the environment and to identify the areas in which their occurrence is the greatest and where they may contribute to the threat of failure to achieve environmental objectives. The list of emissions prepared for the Vistula RBD contains, among other things, information on concentrations and loads of Priority Substances discharged into waters or land by plants located in the river basin. This was done at regional level based on the data from 2010 and 2011. The collected data allowed a ranking to be carried out, in descending order according to the total volume of discharges in the basin, separately for each year. According to it, in the analysed period, most of the loads of nickel and its compounds as well as lead and its compounds were discharged in the area of the Vistula RBD. No further details are given as regards how the chemical pollution is tackled.

A quantitative cost-effectiveness analysis has been carried out in all 10 RBDs to support the selection of measures proposed under the 2015-2021 PoM, and it has been reported to WISE.

Progress has been made and this recommendation has been partially fulfilled.

Topic 13 Measures related to hydromorphology

13.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

Significant hydromorphological pressures were identified in three out of the 10 RBDs (the Vistula, Oder and Nemunas RBDs). For significant physical alterations and for dams, barriers and locks, the relevant sector or water use was indicated as unknown or obsolete. The significant hydrological and hydromorphological alterations were not assigned to any of the specified sectors according to WISE either (instead the sector was reported as "other").

KTM 6 – "Improving hydromorphological conditions of water bodies other than longitudinal continuity" was reported as operational to address hydrological and hydromorphological alterations in these three RBDs. KTM 5 – "Improving longitudinal continuity" was applied in the Vistula and Oder RBDs to address continuity obstacles and physical alterations.

The types of specific hydromorphological measures planned include fish ladders, removal of structures, restoration of modified bank structure, as well as a number of basic measures such as the obligation to obtain water permits for damming, water retention, use of water for energy purposes, for water regulation as well as some investigative measures (e.g. establishment of a national database on hydromorphological changes).

Overall management objectives and quantitative objectives in terms of restoring river continuity were reported to have been set in all RBDs. At the same time, however, only in the Vistula and Oder RBDs were measures relevant to restoring river continuity reported under KTM5.

In terms of basic measures, it was reported that there is an authorisation and/or permitting regime in place to control physical modifications in all 10 RBDs, which covers changes to the riparian area of water bodies according to WFD Article 11(3)(i). It was also reported that there is a register of physical modifications of water bodies.

Win-win measures in terms of achieving the objectives of the WFD and Floods Directive[106], drought management and use of Natural Water Retention Measures were reported to be included in the PoM of all RBDs. However, KTM23 – "Natural Water Retention Measures" is not reported to tackle any significant pressures, although the PoM describes some activities

[106] Directive 2007/60/EC on the assessment and management of flood risks entered into force on 26 November 2007 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32007L0060

relevant to natural and small retention. Poland subsequently informed that measures related to increasing natural retention are an integral part of the Flood Risk Management Plans.

The design of new and existing structural measures, such as flood defences, storage dams and tidal barriers, was reported to have been adapted to take into account WFD objectives in all RBDs. The supporting documents to the PoM indicated that measures were planned to improve the functioning of retention reservoirs as well as measures related to the adaptation of existing drainage systems to perform retention functions while maintaining a watercourse for fish migration. In addition, in case of obstacles to fish migration, supplementary measures are included to ensure river continuity (e.g. construction of fish passes).

Ecological flows were derived and implemented partly, i.e. for some relevant water bodies, in eight RBDs (all except the Elbe RBD and the Ucker RBD) but the work is still on-going. In the Elbe RBD, ecological flows were not derived for the relevant water bodies but there are plans to do so during the second RBMPs. No information was found in the RBMPs about specific regulations which address the establishment of ecological flows or reference to initiatives for setting new standards to define ecological flows. Poland subsequently informed that the work on new standards is on-going. The methodological background should be finished within 2018 and legislation changes are expected in the next few years.

In terms of the level of ambition for tackling significant hydromorphological pressures, according to the information available in the WISE reporting (for the three RBDs where such pressures were reported), it is expected that the number of water bodies affected by dams, barriers, locks will be reduced from 144 to 127 by 2021 and no water bodies will fail to achieve objectives due to this pressure by 2027. Also it is expected that the number of water bodies affected by other hydromorphological alterations will be to a certain extent reduced by 2021 and, by 2027 and only a few water bodies will still fail objectives due to these pressures.

13.2 Main changes in implementation and compliance since the first RBMPs

The links between specific pressures and measures have improved due to the improved reporting on pressures and related KTMs in WISE.

In the first RBMPs, no specific measures were reported to achieve an ecologically based flow regime. In the second RBMPs, it is evident that ecological flows have been partly derived and implemented at least in eight RBDs.

13.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation (report 2015): *Consider and put in place measures for addressing hydromorphological impacts from agriculture in line with requirement of Article 11(3) WFD.*

  Assessment: The PoM includes basic measures which refer to the obligation to obtain a water permit for damming and water retention but there is no specific discussion of the links to hydromorphological impacts from agriculture. There is also mention of measures on good practices supporting the achievement of good status in the field of natural water retention and water management in agricultural areas. Overall, based on the information found, it cannot be concluded whether specific progress on this recommendation regarding impacts from agriculture has been made.

- Recommendation: *Consider and prioritise the use of green infrastructure and/or natural water retention measures that provide a range of environmental (improvements in water quality, flood protection, habitat conservation etc.), social and economic benefits which can be in many cases more cost-effective than grey infrastructure.*

  Assessment: KTM 23 – "Natural Water Retention Measures" is not reported to tackle any significant pressures. At the same time, a programme of retention in forests was reported (this was also reported in the first RBMPs) aimed at retention and maintenance of streams and related infrastructure in good condition. In addition to technical measures related to the construction of (among others) small water reservoirs and weirs, activities also include measures aimed at active protection and shaping of wetlands. In the 2014-2020 financial period, it is planned to continue this project with specific reference to forestry adaptation to climate change, low retention and counteracting water erosion in lowland and mountainous areas. Poland also informed that measures related to increasing natural retention are an integral part of the Flood Risk Management Plans. Therefore this recommendation is considered as partially fulfilled.

Topic 14 Economic analysis and water pricing policies

14.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

There are contradictions between the reporting in WISE and the RBMPs regarding the definition of water services. Within WISE, three water services were reported; drinking water abstraction/treatment/distribution, irrigation water abstraction/treatment/distribution and sewage collection/wastewater treatment. In addition, the use of Article 9(4) was reported for flood protection, irrigation, navigation, self-abstraction (private water supplies), as well as for the additional water services of cooling water abstraction and water transfers between river basins, which are not indicated as such. According to the RBMPs, the definition of water services includes municipal water management, which refers to water supply and collection and treatment of municipal waste water, industry, agriculture and forestry. Self-abstraction and hydropower are not included.

Financial cost recovery rates are provided for the three water services actually reported on WISE, i.e. for water supply and sewage (100%) and irrigation (20-26%) however only two services, for water supply and sewage, were reported in the RBMPs. The Polish Water Law (of 20th July 2017) Article 35 lists defines nine water services and Article 34 lists sixteen particular water uses. It was reported that the relevant users contribute to the cost recovery of the water services, but it is not shown transparently which uses contribute to what degree and how. Also, the information on an 'adequate' contribution is not clear.

Whether the extraction of irrigation water is completely exempted from fees is also not clear.

Environmental and resource costs seem to be calculated and internalised for drinking water supply and wastewater collection and treatment, but only partially for irrigation and not for self-abstraction.

Volumetric charging was reported to be in use for drinking water abstraction and wastewater collection and treatment but only partially for irrigation (this could be due to the fact that the surface water abstraction is exempted from fees). It seems that there are exceptions for agriculture and mining but the extent of such exceptions cannot be deduced from the information available.

The economic analysis was reported to have been updated.

14.2 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation: *In terms of measures related to Article 9, a narrow approach to water services was applied. The cost-recovery should address a broad range of water services, including impoundments, abstraction, storage, treatment and distribution of surface waters, and collection, treatment and discharge of waste water, also when they are 'self-services', for instance self-abstraction for agriculture. The cost recovery should be transparently presented for all relevant user sectors. Environment and resource costs should be included in the costs recovered. Information should also be provided on the incentive function of water pricing for all water services, with the aim of ensuring the efficient use of water. Information on how the polluter pays principle has been taken into account should be provided in the RBMPs.*

- Assessment: In WISE, three water services were reported; drinking water abstraction / treatment / distribution, irrigation water abstraction / treatment / distribution and sewage collection/wastewater treatment. In addition, the use of Article 9(4) was reported for flood protection, irrigation, navigation, and self-abstraction, as well as for the additional water services of cooling water abstraction and water transfers between river basins, which are not indicated as such.

  According to the RBMPs, the definition of water services includes municipal water management, which refers to water supply and collection and treatment of municipal waste water, industry, agriculture and forestry. Self-abstraction and hydropower are not included.

  Financial cost recovery rates were provided for the three water services actually reported on WISE, i.e. for water supply and sewage (100%) and irrigation (20-26%). The summary rate for irrigation is not found in the Vistula or Oder RBMPs.

  The Polish Water Law (of 20th July 2017) Article 35 defines nine water services and Article 34 sixteen particular water uses. It was reported that the relevant users contribute to the cost recovery of the water services, but it was not shown transparently which uses contribute to what degree and how. Also, the information on an ‘adequate’ contribution is not clear.

No cost recovery rates for agricultural uses of water other than irrigation and fish farming were provided in RBMP. According to the reporting on WISE, cost recovery is partial in the case of irrigation, while the RBMPs state that surface water abstraction for irrigation (as well as for forestry, and for fish farming) is exempted from fees. The financial and economic rate of return for agriculture (irrigations) is provided in the document 'Developing a cost recovery analysis for water services, including development of forecasts in river basin districts' There was no clear statement that there are fees for water abstraction from groundwater bodies for agriculture[107].

According to the data reported in WISE, environmental and resource costs are indicated as calculated, internalised (for irrigation water only partially) and significant. They also appear to be calculated and internalised for drinking water supply and wastewater collection and treatment, but only partially for irrigation and not for self-abstraction.

A methodology for calculating environmental and resource costs has been provided; both are divided into internalised and non-internalised costs.

In the second RBMPs, there has been a development of the methodology in terms of resource costs in which active surveys were used; these allowed the identification of some deficits and the estimation of some resource costs. However there is still no mechanism in Poland that registers unmet water demand in the industrial and agricultural sector and there is a lack of systematic information about actual deficits of water resources.

Internalised environmental costs are included directly in environmental charges based on information from databases regarding fees collection (without exactly calculating them), while non-internalised environmental costs are assessed using data on so-called willingness to pay and also disposable income per person. This seems to be an update compared to the first RBMPs where environmental costs were calculated by the contingent valuation method, which only determined the average willingness to pay for improving water quality.

[107] Poland has informed subsequently that the fee for water abstraction is a component of the water supply service (regardless of whether water is used for the municipal sector or agriculture). Costs of management of a company supplying with water, costs of replacing pipes or costs of water treatment as such as well as the component of return rate for fees for water abstraction is not analysed separately. Fees are one of many components and when calculating the rate of return of the water supply service, these fees are included in the calculation. The mere fact that a given entity does not pay at all for the water supply does not mean that the rate of return is 0% - there are other components of the cost of water supply than the charges. Therefore, one can calculate (and such calculations have been carried out) the rate of return for irrigation in agriculture, even if the collection fees have not been calculated.

It was stated that the internalised environmental costs increased from PLN 229.4 million (2006) to PLN 252.8 million (2010), i.e. by 9%. In 2006, the amount of environmental costs for the whole of Poland was estimated at PLN 6693.8 million and for 2010 it was PLN 3364.5 million. It was not stated whether this means a very low cost recovery for environmental costs (it is below 10%).

Internalised resource costs are costs for which fees have been paid. Non-internalised resource costs are costs of lost benefits due to the unmet demand. In the first RBMPs a zero value was assigned in Poland for the resource costs as a result of the analysis, due to assumptions made and lack of data. It was stated in the document on the analysis of environmental and resource costs in accordance with art. 9 RDW 2000/60 / EC (2013) that in relation to the first RBMPs, there was an evolution of the methodology: permission screening has been replaced by active surveys, which allowed identification of some deficits and estimation of a fairly small stream of resource costs. However, methodological gaps remain.

Regarding the incentive function of water pricing policies, the information provided is limited. Volumetric charging was reported to be in use for drinking water abstraction and wastewater collection and treatment but only partially for irrigation (it can be due to the fact that the surface water abstraction is exempted from fees). It seems that there are exceptions for agriculture and mining, at least, but to which degree is not explained in detail.

The collection of water for agricultural irrigation and for the purpose of aquaculture requires water permits.

Overall, slight progress with the Commission's recommendations can be noted. However, significant gaps and contradictions remain. The recommendations are partially fulfilled.

Topic 15 Considerations specific to Protected Areas

15.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

Protected Areas associated with surface water bodies included those related to the Habitats, Birds, Nitrates, Urban Waste Water Treatment (nutrient sensitive areas), Bathing Water and Drinking water (Article 7) Directives and for groundwater bodies, the Nitrates, Urban Waste Water Treatment (nutrient sensitive areas), and Drinking Water Directives. Table 15.1 shows the number of protected areas of all types in each RBD of Poland, for surface water and groundwater bodies. Poland has adopted a whole territory designation approach to nitrate sensitive areas under the Urban Waste Water Treatment Directive.

Table 15.1 Number of protected areas of all types in each RBD of Poland, for surface and groundwater

Protected Area type	Number of protected area Associated with				
	Rivers	Lakes	Transitional	Coastal	Groundwater
Abstraction of water intended for human consumption under Article 7	200				168
Recreational waters, including areas designated as bathing waters under Directive 76/160/EEC[108]	71	37	6	9	
Protection of species where the maintenance or improvement of the status of water is an important factor in their protection, including relevant Natura 2000 sites designated under Directive 79/409/EEC (Birds)[109]	131	44	11	3	
Protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection, including relevant Natura 2000 sites designated under Directive 92/43/EEC (Habitats)	643	117	9	4	

[108] Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32006L0007

[109] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147

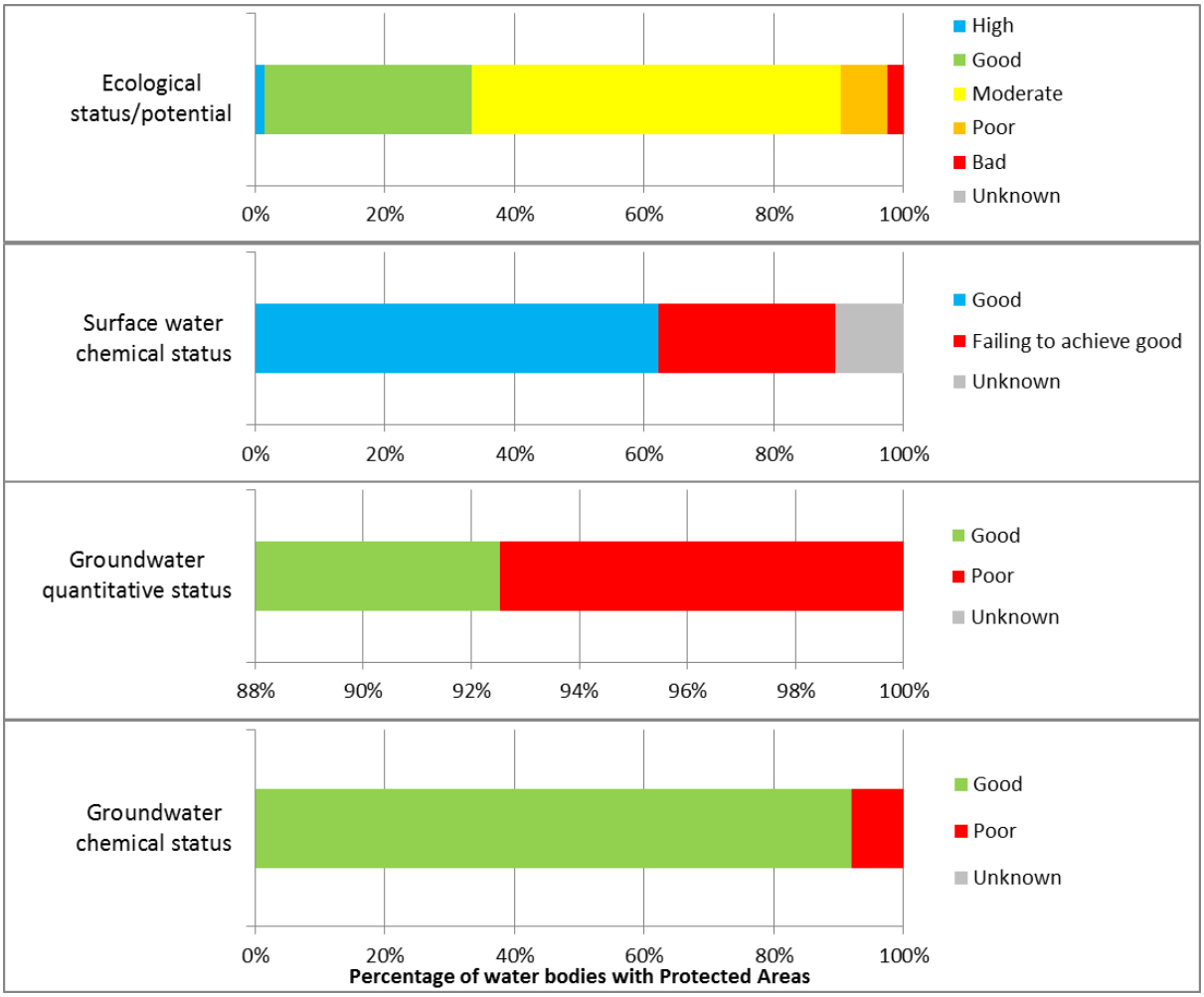
Protected Area type	Number of protected area Associated with				
	Rivers	Lakes	Transitional	Coastal	Groundwater
Nutrient-sensitive areas, including areas designated as vulnerable zones under Directive 91/676/EEC (Nitrates Directive[110])	Not applicable (whole territory approach)	Not applicable (whole territory approach)	Not applicable (whole territory approach)	Not applicable (whole territory approach)	Not applicable (whole territory approach)
Other	1264	111	19	2	

Source: Member State reports to WISE

Figure 15.1 shows the status of water bodies associated with Protected Areas. For groundwater bodies, 90% or more were reported to be in good chemical and quantitative status. For surface waters, the situation is different with more water bodies in moderate or poor chemical and/or ecological status/potential.

[110] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043

Figure 15.1 Status of water bodies associated with the Protected Areas report for Poland. Note: based on status/potential aggregated for all water bodies associated with all Protected Areas



Source: Member State reports to WISE

For all surface water nature (Habitats and Birds) Protected Areas, specific additional objectives have been set to protect all dependent habitats and species. For all nature areas, no information has been provided as to whether the objectives have been met, which implies that the monitoring programme may not provide the necessary data for assessing the status of the Protected Area. This is in contrast to the information relating to ecological status assessments, which have been made with high confidence. It is possible that the objectives have been set using a default approach.

For surface water Drinking Water Protected Areas, objectives have also been set, and nearly all have been met. No objectives have been reported for groundwater Drinking Water Protected Areas.

Table 15.2 shows that the Polish ecological monitoring programme for surface water Protected Areas is fairly comprehensive and includes monitoring sites in relation to the relevant Directives.

Table 15.2 Number of monitoring sites associated with Protected Areas in Poland

Protected Area type	Number of monitoring sites associated with Protected Areas in				
	Rivers	Lakes	Transitional	Coastal	Groundwater
Abstraction of water intended for human consumption under Article 7	121	1			
Nutrient-sensitive areas, including areas designated as vulnerable zones under Directive 91/676/EEC (Nitrates Directive)	167	7			
Areas designated as sensitive areas under Directive 91/271/EEC (Urban Wastewater Treatment Directive)	1460	159	9	10	
Protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection, including relevant Natura 2000 sites designated under Directive 92/43/EEC (Habitats)	791	253	7	8	
Recreational waters, including areas designated as bathing waters under Directive 76/160/EEC	47	52	7	9	

Source: Member State reports to WISE

No data was reported regarding specific monitoring (quantitative and qualitative) of groundwater dependent Protected Areas (mainly drinking water), despite the fact that the status for quantitative and chemical assessment has been carried out with high confidence, meaning it should be based on monitoring data (see Chapters 5 and 6)[111].

Specific plans for measures within Protected Areas are identified in the RBMPs, which state that the measures from these specific plans are coordinated with the RBMPs. It appears that the measures mentioned are mainly administrative in nature. Safeguard zones have also been

[111] Poland subsequently clarified that both groundwater Drinking Water Protected Areas and nature (Habitat and Birds) Protected Areas have been covered by monitoring and assessment. For groundwater Drinking Water Protected Areas an assessment was made as part of the test for quantitative status. Assessment of meeting the requirements for nature Protected Areas was made as part of the surface water assessment process.

established in all RBDs and it is noted that application of fertilizers is either banned or restricted within these zones.

Out of several thousand Protected Areas, exemptions have only been used for four Drinking Water Protected Areas (all based on technical feasibility).

A fairly large number of surface water Habitats and Birds areas have been identified, but no associated groundwater dependent nature areas have been identified which is unexpected. A considerable number of Article 7 areas (drinking water – both from surface and groundwater) have been identified.

15.2 Main changes in implementation and compliance since first RBMPs

The number of Bathing Water Protected Areas identified in the second cycle of River Basin Management Plans has fallen to around half the number reported in the first cycle.

The number of Habitats Protected Areas has more than doubled.

In the first cycle, a considerable number of groundwater Drinking Water Protected Areas were monitored (approximately 450 areas), but no such specific monitoring has been reported in these second River Basin Management Plans.

15.3 Progress with Commission recommendations

The Commission recommendations based on the first RBMPs and first PoM requested action on the following:

- Recommendation: *Provide additional objectives for especial protection in the RBMPs for Protected Areas and report information on the status of Drinking Water Protected Areas associated with groundwater bodies. There is a lack of conservation action plans for Natura 2000 areas.*

  Assessment: Specific objectives have been set for Article 7 areas (surface water) and for Birds and Habitats areas (also surface water). No objectives have been reported for groundwater drinking water areas. A status assessment has been reported for groundwater Article 7 areas. It is mentioned in the RBMPs that plans for Protected Areas have been made including:

- measures aimed at establishing protection areas for inland water reservoirs, including Main Groundwater Reservoirs, in particular measures to protect drinking water,
- taking responsibility for sanitary supervision of bathing water and assessing water quality,
- extending the assessment of water quality of intended for human consumption, for areas particularly exposed to pollution with nitrogen compounds from agricultural sources established by Polish Regulations.
- implementation of a PoM aimed to limit the export of nitrogen from agricultural sources,
- implementation of investment plans as part of the National Urban Wastewater Treatment Programme.

These measures appear to be mainly administrative.

The recommendation is partly fulfilled as additional objectives for groundwater drinking water areas appear to not have been set.

- Recommendation: *Provide information on Drinking Water Protected Areas associated with groundwater bodies and on the number of Drinking Water Protected Areas - including whether they are in good status or not.*

  Assessment: The information has been provided both for groundwater and surface water drinking water Protected Areas, but objectives have only been set for surface water areas. Despite this, a status assessment has been reported both for quantitative and qualitative status and for groundwater areas as well as surface waters.

  The recommendation has generally been fulfilled.

- Recommendation: *Clarify in the second RBMPs the objectives and planned measures for Protected Areas (Nitrate Vulnerable Zones, sensitive areas, Protected Areas under shellfish and fish water Directives, etc.).*

  Assessment: Additional objectives have been set only for surface water areas related to Birds and Habitat Directives. No objectives have been set for groundwater related

Protected Areas like nitrate vulnerable areas or groundwater dependent habitat and birds areas.

Planned measures for Protected Areas are mentioned in the RBMPs (as detailed above) but appear to be largely administrative.

The recommendation has been partially fulfilled.

Topic 16 Adaptation to drought and climate change

16.1 Assessment of implementation and compliance with WFD requirements in the second RBMPs

Climate change was considered in all RBDs and the guidance document on how to adapt to climate change (Common Implementation Strategy Guidance Document No. 24[112]) was used. In the first RBMPs no climate change evaluation of the PoM was carried out. Such an evaluation has been now carried out in the second RBMPs. Consideration of climate change has been included in the assessment process for evaluating the effectiveness of measures and assessing direct and indirect climatic pressures. No specific sub-plans for addressing climate change were reported for Poland. KTM 24 - 'Adaptation to climate change' is not reported as operational to address any of the significant pressures.

According to the 2012 Topic Report on Water Scarcity and Drought in RBMPs[113], droughts were relevant for Poland at a local river sub-basin level. No exemptions have been applied for the country following Article 4(6) due to prolonged droughts.

Even though there is no legal obligation to prepare Drought Management Plans, many Member States have prepared them in order to cope with droughts. Drought Management Plans have not been reported for Poland; this was also noted in the 2012 Topic Report[114].

16.2 Main changes in implementation and compliance since the first RBMPs

A climate change evaluation check was carried out in the second RBMPs. This was not the case in the first RBMPs.

16.3 Progress with Commission recommendations

There were no Commission recommendations based on the first RBMPs and first PoM for this topic.

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[112] https://circabc.europa.eu/sd/a/a88369ef-df4d-43b1-8c8c-306ac7c2d6e1/Guidance%20document%20n%2024%20-%20River%20Basin%20Management%20in%20a%20Changing%20Climate_FINAL.pdf

[113] http://ec.europa.eu/environment/water/quantity/pdf/Assessment%20WSD.pdf

[114] Poland subsequently clarified that in the 2012 Plans for action against effects of drought in water regions were prepared in Poland by regional water management boards in Szczecin and Wrocław. One year later the methodology for national plans (PPSS) was prepared so to have regional plans prepared according to unified approach. Other regional plans were drafted in 2014-2017 and those two of Szczecin and Wrocław were reviewed and updated. The National Water Management Authority opened works on PPSS in 2016. The document will be complementary to the RBMPs. As being not ready, PPSS was not reported in the RBMPs report.