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Second River Basin Management Plans - Member State: Belgium

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
QA/QC Directive	Quality Assurance / Quality Control Directive
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.

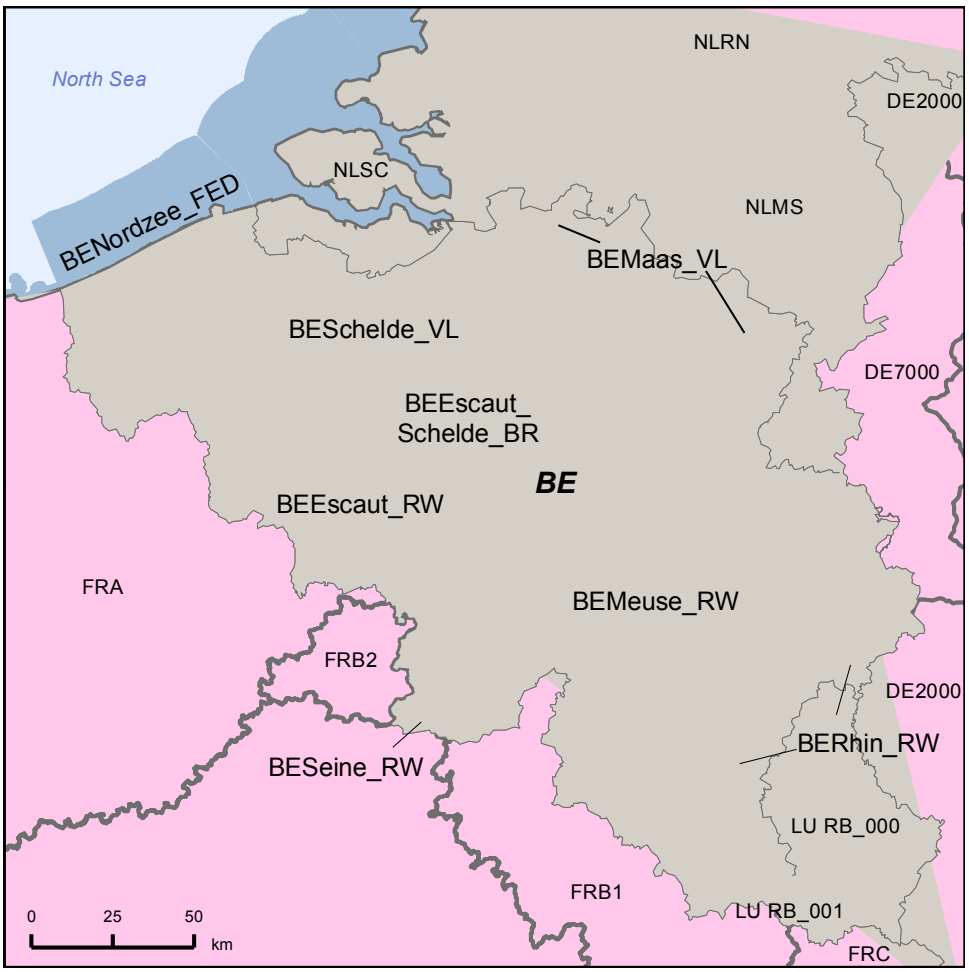
This Member State Assessment report was drafted on the basis of information that was reported by Member States through the Water Information System for Europe (WISE) electronic reporting.

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

Belgium (Map A) has a population of about 11 million and has a total area of 30 528 km^2. The country consists of three regions: the Brussels-Capital Region, the Flemish Region and the Walloon Region.

Map A Map of River Basin Districts (RBDs)



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

Belgium has four RBDs, of which the Meuse and Scheldt cover most of the Belgian territory. The Rhine and Seine RBDs cover a much smaller part of Belgium. Because of the division of responsibilities among the different regions of the federal state of Belgium there are several plans for the same RBD within Belgium.

The areas of the national RBDs including sharing countries is provided in Table A.

Table A Overview of Belgium's RBDs

RBD code	Region	Size (km²)	Countries sharing RBD
BESchelde_VL	Flanders	12 027	FR, NL
BEEscaut_Schelde_BR	Brussels Capital	162	FR, NL
BEEscaut_RW	Wallonia	3 773	FR, NL
BENoordzee_FED	Federal	128	FR, NL
BEMaas_VL	Flanders	1 601	DE, FR, LU, NL
BEMeuse_RW	Wallonia	12 278	DE, FR, LU, NL
BERhin_RW	Wallonia	770	AT, CH, DE, FR, LI, (LU),(IT), NL
BESeine_RW	Wallonia	80	FR

Source: RBMPs reported to WISE

The three large international RBDs on Belgian territory (Scheldt, Meuse and the Rhine) have international co-operation in place, including international agreements and international cooperation body. Belgium's percentage share of each international RBD is shown in Table B.

Table B Transboundary RBDs by category and percentage share in Belgium

Name international RBD	National RBD	RBD Name	Countries sharing RBD	Coordination category			
				1		4	
				km²	%	km²	%
Scheldt	BESchelde_VL	Scheldt	FR, NL	12 027	33		
	BEEscaut_Schelde_BR	Scheldt (Brussels)	FR, NL	162	0.4		
	BEEscaut_RW	L'Escaut	FR, NL	3 773	10.3		
	BENoordzee_FED	North Sea	FR, NL	128	0.4		
Meuse	BEMaas_VL	Maas	DE, FR, LU, NL	1 601	4.6		
	BEMeuse_RW	Meuse	DE, FR, LU, NL	12 278	35.5		
Rhine	BERhin_RW	Rhine	AT, CH, DE, FR, LI, (LU), (IT), NL	770	0.4		
Seine	BESeine_RW	Seine	FR			80	0.08

Source: WISE electronic reporting. Belgium provided additional countries that share a RBD – shown in brackets.

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

Status of second river basin management plan reporting

A total of eight RBMPs (Scheldt, Scheldt (Brussels), L'Escaut, North Sea, Maas, Meuse, Rhine and Seine) were published between 2 March 2016 and 8 March 2017. Documents are available from the European Environment Agency (EEA) EIONET Central Data Repository https://cdr.eionet.europa.eu/

Key strengths, improvements and weaknesses of the second River Basin Management Plan(s)

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

- **Governance and public consultation**

  - Advisory groups were used for the active involvement of stakeholders in Flanders, and ongoing stakeholder involvement is indicated for the Federal RBD for coastal waters.

  - For two RBDs of the Flanders Region and the RBD of the Brussels region, the RBMPs and Flood Risk Management Plans were combined in a single plan. In all three regions, joint consultation of RBMPs and Flood Risk Management Plans was undertaken.

  - Belgium did not adopt and publish all RBMPs in accordance with the timetable in the WFD.

  - Belgium has organised RBD management along regional lines based on the regional competences in Belgium, thus splitting river basins into separate RBDs for each region. While coordination occurs at several levels – including bilateral cooperation among regions, national coordination and coordination within international RBDs – it is not clear if this is sufficient to ensure that the environmental objectives established by the Directive are achieved efficiently.

- **Characterisation of the RBD**

  - No information about whether typologies used by Brussels region were validated against biological data could be found in the RBMPs[1]. 50 water bodies (~10%) were reported not to have applicable common intercalibration types including artificial, heavily modified and natural water bodies. It is unclear how the results of intercalibration are translated to these types and water bodies[2].

  - Further characterisation work for groundwater bodies has been undertaken since the first RBMPs, by describing the geological formation and whether or not they are layered. Groundwater body links to terrestrial ecosystems have been reported in all six

[1] Flanders subsequently clarified that the information exists in background documents. They are reported via the hyperlink http://www.integraalwaterbeleid.be/nl/stroomgebiedbeheerplannen/stroomgebiedbeheerplannen-2016-2021/documenten/achtergronddocumenten/AD_Beoordeling_Ecologische_Chemische_Toestand.pdf

[2] Belgium subsequently clarified that for Flanders, all water bodies within the same water category were assessed using the same biological assessment method, but with relevant type-specific modifications.

RBDs. Links to surface water bodies are only reported by four RBDs: the two RBDs in Flanders provided an explanation of why this information was not reported to WISE.

- Expert judgment is used by a number of RBDs in Belgium to assess the significance of pressures arising from water abstraction and water flow modifications on surface waters and pressures on groundwater from point sources, diffuse sources and water abstractions. This brings into question the reliability and comparability of the assessment of these pressures in Belgium. Significance of pressures on surface waters were reported as not linked to failure of objectives nor defined in terms of thresholds in the Wallonia RBDs. For groundwater, the pressures have only been linked to failure of objectives in three RBDs.

- Seven RBDs reported significant pressures to be addressed in the Programme of Measures (PoM) but the gaps to good status were not quantified. The situation is similar for chemical substances. Belgium explained in Annex 0 that the information is available but could not be reported in the required format. Inventories of emissions, discharges and losses have been established in all RBDs except the North Sea[3]. The inventories all include all 41 Priority Substances. Tier 1 of the methodology was implemented for some of the substances deemed relevant at RBD level, which is not in line with the CIS Guidance Document n°28, higher tiers were also implemented in some cases. The data quality ranged from medium to very uncertain, or was not reported.

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

- Overall, there has been an increase in operational monitoring sites and a reduction in surveillance monitoring sites. Only one lake was included in surveillance monitoring, while they were five in the first RBMPs.

- In the Maas RBD, there is no surveillance programme for lakes, even if lakes have been delineated. In the Schelde RBD there are no monitoring programmes for the only coastal water body delineated.

- All expected biological quality elements and general physicochemical quality elements were reported to be monitored in rivers and lakes.

[3] Belgium subsequently clarified that direct discharges to the North Sea are forbidden. This does not exclude, however, the possibility that substances are present due to diffuse sources or atmospheric deposition.

- In rivers, there has been an improvement in the monitoring of hydromorphological quality elements since the first RBMPs. However, hydromorphological quality elements were reported to have been monitored in lakes for the first RBMPs but not for the second. Belgium subsequently explained that the hydromorphological characteristics of lakes are only monitored in cases where they have changed in comparison to the previous RBMP, which was not the case between the first and second RBMPs for any lakes in Belgium.

- In the coastal water body in the North Sea RBD, hydromorphology was not monitored and only two general physicochemical quality elements were monitored.

- Environmental quality standards were established for approximately 104 River Basin Specific Pollutants in water, covering all eight RBDs (the total number is uncertain because of possible errors in the electronic reporting of some substances). The vast majority of the Environmental Quality Standards in water have been derived in accordance with the Technical Guidance Document No. 27 and the analytical methods used for most of the substances meet the minimum performance criteria laid down in Article 4.1 of the Quality Assurance / Quality Control Directive (QA/QC Directive) (2009/90/EC) for the strictest standard applied.

- Environmental Quality Standards were also derived for nine substances in sediment, but were not derived in accordance with Technical Guidance Document No. 27 though the analytical methods meet the requirements of Article 4.1 of the QA/QC Directive.

- River Basin Specific Pollutants were reported to be monitored in all surface water categories, while they had not been monitored in lakes for the first RBMPs.

- All 79 River Basin Specific Pollutants were included in surveillance monitoring and all were sampled in water at least at the minimum recommended frequency at all of the sites where they were monitored.

- All the required quality elements are monitored in most, but not all, river water bodies included in surveillance monitoring. However, this is not the case for any of the coastal, lake and transitional water bodies included in surveillance monitoring, although for transitional water bodies some of the required quality elements are monitored.

- The confidence in classification of ecological status/confidence is reported as high for almost all water bodies, which is a major improvement since the first RBMPs, where no information was given on confidence.

- Belgium is still quite far from achieving good status/potential in all surface water bodies and the timing for the achievement of objectives is unknown for 60% of the water bodies.

- The classification of ecological status is based predominantly based on monitoring data.

- Assessment methods are complete for most biological quality elements in all water categories and RBDs. All the biological quality elements with methods developed are used for classification in most water bodies in all water categories.

- Assessment methods are developed for all relevant hydromorphological quality elements in rivers and for morphological conditions in transitional waters, and were reported to be related to the sensitive biological quality elements.

- Methods for the assessment of the physico-chemical quality elements are developed for most of the relevant quality elements for the different water categories and are related to the sensitive biological quality elements. However, the nutrient standards are close to or higher than the nutrient saturation level for nutrient sensitive biological quality elements.

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

- The extent of monitoring for Priority Substances was high in Belgium: 82 % to 100 % of river water bodies in seven of the eight RBDs in Belgium were monitored for more than 10 Priority Substances in water. The remainder were monitored for between zero and four substances.

- All lake water bodies in the Maas RBD and 53 % in the Schelde RBD were monitored for four Priority Substances, with the remaining monitored for more than 10 Priority Substances.

- All water bodies (coastal and territorial) in the North Sea RBD were monitored for six to 10 Priority Substances. The coastal water body (Zwin) in the Schelde RBD was not monitored for any Priority Substances.

- 83 % of transitional water bodies were monitored for more than 10 Priority Substances, with the remainder monitored for four Priority Substances.

- For status assessment, a large proportion of surface water bodies were monitored for more than 10 Priority Substances in water in most RBDs. Fewer substances were monitored in the remaining RBDs. There is a lack of consistency in the frequency of monitoring of Priority Substances in water with examples of frequencies that meet the guideline requirements of the WFD and instances where they do not. Mercury, hexachlorobenzene and hexachlorobutadiene are monitored in biota in coastal, river and transitional water bodies in most RBDs for status assessment. Monitoring is undertaken in a limited number of water bodies. The frequency reported in all RBDs met the requirements of once every year in at least some sites.

- For trend assessment, Belgium has monitored all 14 of the Priority Substances required for the monitoring of long-term trend in sediment and/or biota in sediment in river water bodies in four RBDs and fewer in the remainder. The frequency of the monitoring meets the minimum guidelines in the Directive but the spatial extent of monitoring is limited.

- In all but one of the RBDs in Belgium, 41 Priority Substances have been included in inventories, though not all are discharged or monitored.

- All water categories, including territorial waters, are monitored and classified for chemical status in Belgium.

- Overall between the two cycles there was a large decrease in proportion of surface water bodies with good chemical status from 35 to 2 % and a significant increase in the proportion failing to achieve good status from 30 to 98 %. This pattern occurred across all RBDs, except those that had all their water bodies with poor status in both the first and second RBMPs (Schelde Brussels and North Sea RBDs). Importantly, the proportion with unknown status has reduced from 35 % to less than 1 %.

- Between 10 and 41 Priority substances are used in the classification of chemical status depending on the RBD. Grouping is applied for the classification of chemical status (though not in the North Sea RBD) but the basis for the approach is not well described in the RBMPs.

- Overall 43 % of surface water bodies in Belgium were classified for chemical status with high confidence and 57 % with medium confidence.

- Between 13 and 41 (depending on the RBD) of the environmental quality standards laid down in Part A of Annex I of the EQS Directive for assessment of the chemical status

of bodies of surface water were applied and used in the assessment of chemical status. However, in RBDs where not all the standards have been applied, Belgium reported that alternative and/or additional standards for particular Priority Substances had also not been applied. It is therefore unclear which standards have been used in the assessment of chemical status.

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

  - There has been an increase in coverage for quantitative monitoring in the second cycle; nearly all groundwater bodies are now covered by monitoring.

  - The number / area of groundwater bodies failing good quantitative status dropped significantly.

  - The confidence in quantitative status assessment is high for 50% of the groundwater bodies and medium for the remainder.

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

  - Chemical monitoring covers almost all groundwater bodies. The number of operational monitoring sites has increased significantly in the second cycle. Not all substances causing risk are subject to surveillance and operational monitoring in all RBDs.

  - Not all WFD core parameters are monitored in all RBDs.

  - The needs of groundwater dependent terrestrial ecosystems have not been considered in the establishment of groundwater threshold values.

  - Only in the Flanders region and Scheldt (Brussels) RBDs, where groundwater dependent terrestrial ecosystems exist, they have been considered in status assessment while for the other RBDs they were not.

  - In the three Walloon river basin districts, where groundwater associated surface waters exist, they have not been considered in status assessment.

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

- Sufficient information is provided on criteria for the identification of substantial change in character, the types of physical alterations and the water uses which are considered for the designation of heavily modified water bodies. However, no information could be found on criteria used for the assessment of significant adverse effect of restoration measures on the use and the wider environment or an explanation of how better environmental options have been assessed.

- Mitigation measures for achieving good ecological potential have been reported in WISE, but no description of the ecological changes that these measures are designed to achieve could be found in the RBMPs. Furthermore, no methodological document on the definition of good ecological potential is available yet for Wallonia.

- **Environmental objectives and exemptions**

- Environmental objectives for ecological and chemical status of surface water bodies and quantitative and chemical status of groundwater bodies have been reported, although a significant number of unknowns remain.

- Drivers, Pressures and pollutants leading to exemptions are reported. Also impacts leading to exemptions are reported.

- The level of information provided behind the justification of exemptions varies a) depending on the reason, and b) depending on the different regions. Therefore, the application of the justification of technical feasibility for Article 4(4) exemptions might be an issue of insufficient implementation of WFD requirements, as relevant information is lacking in some RBMPs and reported background documents.

- **Programme of Measures**

- Some progress has been made in carrying out cost-effectiveness analyses. No clear summary of progress has been provided and it is not possible to judge if any improvements have been achieved towards attaining WFD objectives. In particular it is not clear whether the PoM is sufficiently ambitious (in a large number of water bodies the objectives will not be achieved even by 2027).

- No clear financial commitment for the implementation of the PoM has been received from all relevant sectors in any of the RBDs.

- Most significant pressures are covered by KTMs, particularly in the RBD's in Flanders, where all are covered. A few significant pressures are not covered by operational KTMs, notably none for diffuse agricultural pollution in groundwater in the Rhine RBD, and abstractions/flow diversions and alterations of water level or volume in groundwater (L'Escaut - Walloon). In addition, no water retention measures seem to be operational although these were included in relation to the Floods Directive (FD)[4].

- Belgium has mapped a total of 155 measures and 112 supplementary measures against a total of 22 predefined KTMs, eight KTMs related to the Marine Strategy Framework Directive, and 10 regionally defined measures.

- KTMs to tackle RBSPs in surface water and groundwater have been reported for the Flanders Region (Schelde and Maas RBDs).There is no information on the number of surface water bodies causing failure of objectives due to River Basin Specific Pollutants, and no KTMs have been reported to tackle River Basin Specific Pollutants, in the Walloon and Brussels Regions.

- KTMs used to tackle Priority Substances have been reported for the Flanders Region (Scheldt and Maas RBDs). There is no information for Priority Substances in the Walloon Region (four RBDs).

- There is an almost complete absence of gap analyses[5], making it difficult to judge progress or expected progress in achieving WFD objectives (limited information for the North Sea RBD only).

- Joint consultation of RBMPs and FD Flood Risk Management Plans have been carried out (in all except the North Sea RBD), and the RBMPs and Flood Risk Management Plans have been integrated into a single plan for the Scheldt in the Brussels and Flanders regions, and for the Maas in the Flanders region only.

[4] 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

[5] Belgium has clarified that a gap analysis has been performed and reported in a background document for Flanders (Scheldt and Maas)
http://www.integraalwaterbeleid.be/nl/stroomgebiedbeheerplannen/stroomgebiedbeheerplannen-2016-2021/documenten/achtergronddocumenten/achtergronddocument-doelafstand-nutrienten-oppervlaktewater

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

  - Water abstraction pressure is relevant for a few RBDs in Belgium. The Water Exploitation Index is only reported for one region (Wallonia) with a value of 6.4 % (2011), and not for other regions. However, according to the information provided by Belgium, Flanders reported such data via State of the Environment.

  - The main uses for water consumption have not been reported to WISE.

  - Regarding measures under Article 11(3)(c), in two out of three RBDs which face water abstraction pressures, new measures or significant changes are foreseen in the second RBMPs.

  - Water reuse has been included as a measure in terms of managing water resources in three RBMPs.

  - Measures for the prior authorisation of artificial recharge or augmentation of groundwater bodies - Article 11(3)(f) - have been implemented in the previous cycle, and new measures or significant changes are planned.

  - The RBMPs do not include a water resource allocation and management plan.

  - RBDs, which face significant abstraction pressures and inconsistency with WFD-objectives (the Maas and the Scheldt RBD), exempt small abstractions from permits (although they are registered and thus controlled).

- **Measures related to pollution from agriculture**

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

  - A gap assessment for nutrients and pesticides has been undertaken in all of the RBDs.

  - For the North Sea RBD the area of agricultural land to be covered by measures to achieve environmental objectives was reported.

  - Basic measures are implemented in the Seine, Scheldt, Rhine, Meuse, Maas, and L'Escaut RBDs and supplementary measures to reduce nutrient pollution are applied in all RBDs.

- It is not clear from the RBMPs what part mandatory or voluntary measures will take in achieving the WFD objectives.
- Financing of measures is secured in Wallonia.

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

- A wide range of Key Type of Measures (KTMs) relevant to addressing chemical pressures have been identified in four of the Belgian RBDs (Escaut-Scheldt, North Sea, Maas and Schelde) – but not in the other four.
- A register of waste-water discharges exists in seven out of eight Belgian RBDs although it covers groundwater in only two of them. Authorisation and/or permitting regimes to control waste water point source discharges are in place in seven out of eight Belgian RBDs for surface and groundwater.
- The RBMP of the Schelde RBD contains specific measures to reduce the emissions of all identified River Basin Specific Pollutants, and to tackle pollutants causing poor groundwater status[6].
- Measures to address, the River Basin Specific Pollutants in the Scheldt (Brussels) and Wallonia RBDs are mentioned only in a general (not substance-specific) way in the RBMPs. Measures for groundwater pollutants are also not specified in detail.

- **Measures related to hydromorphology**

- The links between hydromorphological measures and pressures have been made more obvious in the second RBMPs. Operational KTMs were reported in all five RBDs with significant hydromorphological pressures. However, for the majority of water bodies reported to have significant hydromorphological pressures, the driver is unknown/obsolete or indicated as "other", that is, not specified as one of the key sectors indicated in the WISE reporting.
- Indicators on the gap to be filled for significant hydromorphological pressures by 2021 and 2027 are not reported. Even if the reporting of this gap was optional, the lack of such information does not allow any conclusions on the level of ambition in closing the gap. No indicator values were reported either for the KTMs.
- In the Scheldt (Brussels) RBD, ecological flows have been derived for some relevant water bodies but the work is still ongoing. This is seen as progress from the first cycle,

[6] Belgium clarified that this was the case also for the Maas RBD.

where it was announced that a study of base flow values would be done. For the other seven RBDs, ecological flows have not been derived for all water bodies at risk of failing environmental objectives due to abstractions, flow diversions or impoundments, but there are plans to do so during the second cycle.

- **Economic analysis and water pricing policies**

  - Water services are defined differently in the Belgian RBDs.
  - Not all RBMPs include information on environmental and resource costs.
  - With the exception of the North Sea RBD the economic analysis was reported as updated.

- **Considerations specific to Protected Areas (identification, monitoring, objectives and measures)**

  - There was a significant increase in the number of Protected Areas reported for Article 7 for Drinking Water (from 379 to 587), Habitats (from 263 to 499) and for Birds (from 218 to 386). For the remaining types, the numbers were similar.
  - Additional objectives for surface water Protected Areas have been established in some RBDs for Drinking Water and Protected Areas under the Habitats and Birds Directives, and the Ramsar Convention. However, for some habitats areas, the default objective of good status is considered sufficient, although it has not been assessed in detail.
  - The reported monitoring programmes was only reported in Wallonia, being less completed than in the first cycle, as the scale of monitoring of groundwater Article 7 Drinking Water areas is reduced by half with the remainder at a comparable scale in terms of the number of monitoring sites.
  - Exemptions to additional objectives for Protected Areas have been applied for the first time in the second cycle.

- **Adaptation to drought and climate change**

  - Climate change was considered in only a few river basin districts (Maas and Scheldt) and the Common Implementation Strategy guidance document on how to adapt to climate change was used in these.
  - KTM 24 – "Adaptation to climate change" is applied in Flanders and Wallonia; No specific sub-plans addressing climate change were reported for Belgium.

  Droughts were not reported to be relevant for the country.

Recommendations

- The preparation of the next cycle of RBMPs should be carried out in accordance with the WFD timetable, to ensure the timely adoption of the third RBMPs.
- Belgium should further ensure that consultation processes at various levels (regional, national, international) are coordinated.
- Belgium 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.
- Although Belgium has made progress in characterisation, further work is needed on the apportionment of significant pressures; in particular hydromorphological pressures and to better identify "unknown anthropogenic pressures".
- Belgium still needs to address, for all RBDs, the links between status, individual pressures and the PoM. Furthermore, the assessment of significance of pressures needs to be more based on numerical tools rather than expert judgement.
- Belgium should continue to expand its monitoring programmes in order to cover all relevant quality elements and, in particular, the biological quality elements.
- Belgium should make sure that the nutrient standards used are such that they do not cause a risk of failure in reaching good status for the nutrient sensitive biological quality elements.
- Monitoring for status assessment should be completed to reach sufficient confidence and spatial coverage for all the Priority Substances as well as the monitoring frequencies in all monitoring sites according to the Directive.
- Trend monitoring arrangements should be completed in all RBDs to ensure that all the relevant substances specified in Directive 2008/105/EC are monitored in a way that provide sufficient temporal resolution and spatial coverage.
- Improve status assessment of groundwater, and further uptake links with associated aquatic ecosystems and dependent terrestrial ecosystems. Ensure that all core parameters are monitored and continue improving operational monitoring for groundwater bodies at risk.
- For Flanders the criteria used for the assessment required under WFD Articles 4(3)(a) and 4(3)(b) need to be made transparent, i.e. the assessment of significant adverse

effects of restoration measures on uses or the wider environment and an explanation of how better environmental options to deliver the beneficial objectives served by the HMWB have been assessed. For Wallonia the methodology used for the definition of good ecological potential needs to be made available in order to improve the transparency of objective setting for Heavily Modified and Artificial Water Bodies.

- The overall significant and stagnant number of exemptions which are still applied in the second RBMP is an issue of concern and an important number of unknowns regarding the timeframe for the achievement of the objectives remains. Efforts need to be continued to implement the required measures in order to ensure the timely achievement of the WFD objectives. Improvements have been made in terms of the justification of exemptions compared to the first RBMPs, which should be further continued for the different justifications in all regions.
- Cost-effectiveness analyses should be conducted and details provided of prioritisation of measures based on the cost-effectiveness analyses[7].
- The RBMPs should clearly identify the gap to good status for individual pressures and water bodies, and the PoM should be designed and implemented to close that gap.
- Belgium should make clear financial commitments for the implementation of the PoMs.
- In the third RBMPs, state clearly to what extent in, terms of area covered and pollution risk mitigated, basic measures (minimum requirements to be complied with) or supplementary measures (designed to be implemented in addition to basic measures) will contribute to achieving the WFD objectives and identify sources of funding (e.g. CAP Pillar 1, RDP), as appropriate, to facilitate implementation of these measures.
- 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 Belgium to ensure the third RBMP is technically feasible and that all relevant policies and instruments (e.g. RDP, CAP Pillar 1, Nitrates Directive, etc.) contribute significantly to RBMPs.
- KTMs should be operational and cover all the significant pressures causing failure to objectives in all RBDs. In addition, all Priority Substances and River Specific Pollutants identified as causing failure should be associated with KTMs.

[7] Belgium subsequently clarified that details are available in the POM: "maatregelenprogramma chapter 1 Uitgangspunten en methodiek bij de prioritering en de selectie van maatregelen in het kader van de KRLW" and that the document has been uploaded in WISE.

- In order to ensure an ambitious approach to combatting chemical pollution, it is important that Belgium, in particular Wallonia, identify and implement KTMs specific to addressing pollution by the Priority Substances and River Basin Specific Pollutants, and that it take a more substance-specific approach to identifying measures to tackle groundwater pollutants.
- Belgium should extend the coverage of its register of waste water discharges to better cover discharges to groundwater.
- Belgium should make sure that the necessary hydromorphological measures to achieve good status are designed and included in the next cycle of RBMPs, including those targeting the good ecological potential for heavily modified water bodies, and should ensure the necessary funding to implement those measures.
- Belgium 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.
- Continue to apply cost recovery for water use activities having a significant impact on water bodies, including impoundments, abstraction, storage, treatment and distribution of surface waters, and collection, treatment and discharge of wastewater, also when they are 'self-services', for instance self-abstraction for agriculture, or justify any exemptions using Article 9(4). Transparently present how financial, environmental and resource costs have been calculated and how the adequate contribution of the different users is ensured (disaggregated into at least industry, households and agriculture), i.e. demonstrating how the polluter pays principle has been taken into account. Transparently present the water-pricing policy, including the use of adequate incentives for users to use water efficiently, and documenting volumes, prices, and costs associated with water services. Provide a transparent overview of estimated investments and investment needs.
- Belgium needs to continue its work on the additional needs that need to be set for all relevant Protected Areas and their additional associated objectives. It also needs to ensure that monitoring of surface and groundwater bodies covers all relevant Protected Areas.

Topic 1 Governance and public participation

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

1.1.1 Administrative arrangements – RBDs

Belgium has reported eight RBDs, which are structured by international RBD and by region:

- Four Belgian RBDs are part of the Escaut/Scheldt/Schelde international RBD: L'Escaut in the Walloon Region; the Escaut/Scheldt (Brussels) in the Brussels Region; the Schelde in the Flanders Region; and the North Sea coastal waters, managed by the Federal government.

- Two RBDs are part of the Meuse international RBD: the Maas in the Flanders Region and the Meuse in the Walloon Region.

- The Walloon Region has one RBD that is part of the Rhine international RBD, the Rhine RBD, with its RBMP, and one RBD that is part of the Seine, the Seine RBD.

1.1.2 Administrative arrangements – competent authorities

Belgium is a federal state which has delegated competence with regard to water policy to the regions.

Belgium reported four Competent Authorities:

- the Federal Public Service For Public Health, Food chain Safety and Environment (national level);

- the Government of Brussels Capital Region;

- the Coordination Committee for Integrated Water Policy in the Flanders Region; and,

- the Walloon Government.

Cooperation among regions includes national coordination within the Steering Group on Water in the Coordination Committee for International Environmental Policy (CCIEP). Formal coordination also takes place within international RBD commissions (that is, for the Scheldt and the Meuse).

Belgium subsequently clarified that, the CCIEP mainly deals with the coordination of Belgian comments, positions or delegations on policy matters as well as reporting to international organisations. They have also informed that the Steering Group on Water of the CCIEP operates according to the general mandates of the CCIEP and coordinates the implementation of the WFD and the FD.

In addition, bilateral consultations are held between the regions, both at the regional level between the competent administrations and at the local level, e.g. within the basin structures and the working groups on transboundary water consultations.

1.1.3 RBMPs –structure

The two RBMPs in the Flanders Region (for the Schelde and the Maas RBDs) have two types of sub-plans: for groundwater systems and for river sub-RBDs (see Figure 1.1 below). For the Flanders Schelde RBD, for example, there are 10 sub-RBD plans and five groundwater plans.

Figure 1.1 Issues, sectors, sub-basins or water categories in Belgium supplemented by more detailed sub-plans for the second cycle[8]

RBD	Agriculture	Chemical industry	Hydropower	Transport	Water Scarcity and droughts	Climate change	Coastal erosion	Rural planning	Urban planning	Nutrient enrichment	Chemical pollution	Other: groundwater and sub-basins
BEMAAS_VL												✓
BESCHELDE_VL												✓

Source: WISE electronic reporting

✓	Covered by sub-plans

1.1.4 Public consultation

For all of Belgium's RBMPs, draft documents were available for public consultation for the requisite six months. In the two RBDs of the Flanders Region and for the North Sea RBMP,

[8] Belgium subsequently informed that sub River Basin Management Plans exist in Flanders (Scheldt and Maas) for each sub-basin and for each groundwater system.

documents were available for download. For the four RBMPs produced in the Walloon Region, documents were available for download and paper copies were available in government buildings and distributed at exhibitions, and the documents were also mailed directly. In the Scheldt (Brussels) RBD, documents were available for download and paper copies were available in government buildings and distributed at exhibitions.

Stakeholders were actively involved in all eight Belgian RBMPs. Stakeholders groups that were actively involved were: agriculture/farmers, industry, Non-Governmental Organisations/nature protection and water supply and sanitation in the Walloon Region. These groups were involved in addition to local/regional authorities and ports/navigation in the Flanders Region; and fisheries/aquaculture, local/regional authorities and Non-Governmental Organisations /nature protection for the North Sea RBMP.

Stakeholders were involved in drafting in all four RBMPs prepared in the Walloon Region and in the RBMP of the Brussels Capital Region. Stakeholders were also involved via regular exhibitions for the four RBMPs in the Walloon Region. For the two RBMPs prepared in the Flanders Region, stakeholders were involved via advisory groups. Ongoing stakeholder involvement was indicated only for the North Sea RBMP for coastal waters: via the Coordination Committee for International Environmental Policy with regional authorities, via the International Scheldt Committee with other stakeholders and through synergy with ongoing Marine Strategy Framework Directive[9] implementation stakeholder involvement.

The impacts of consultation were: adjustment to specific measures, for all plans except the North Sea RBMP for coastal waters; commitment to further research in six RBMPs (those of the Flanders and Walloon Regions); commitment to action in the next RBMP cycle, for the two RBMPs in the Flanders Region; addition of new information (for the four RBMPs in the Walloon Region); and, for the Federal RBMP for Coastal Waters, corrections of text that did not have any influence on assessment or measures.

1.1.5 Integration with the FD and the Marine Strategy Framework Directive

The two RBMPs of the Flanders Region (Schelde and Maas) are integrated with the Flood Risk Management Plans into a single plan. This is also the case for the Scheldt (Brussels) RBMP and Flood Risk Management Plan.

[9] 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

Joint Consultation of the RBMPs and Flood Risk Management Plan was carried out for seven of Belgium's eight RBMPs (the exception being the North Sea RBMP, where the FD is not applied).

Joint consultation was not carried out with the Marine Strategy Framework Directive.

1.1.6 International coordination and cooperation

All of Belgium's RBDs are part of international RBDs. For three RBDs – Scheldt, Meuse and Rhine – a common international RBMP and a PoM are in place (designated as Category 1 cooperation). For these, links have been made with national RBMPs within the international RBMPs. Coordination with other Member States has taken place within the commissions for these international RBDs.

Belgium and its regions were involved in intensive cooperation activities in all three international RBDs, including on monitoring, identification of significant water management issues and the preparation of national and international RBMPs and PoMs. For the Scheldt international RBD, for example, an international RBMP was prepared; regarding the PoM, some measures were coordinated among Member States, both via the Scheldt Commission and its working groups and bilaterally (for further information see the reports on international coordination on the WFD).

In addition, Belgium has a range of bilateral agreements in place with neighbouring Member States: for example, the Flanders Region and the Netherlands have established the Flemish-Netherlands Bilateral Maas Commission for cooperation on water management in the Meuse International River Basin[10].

For the 4th RBD, the Seine, coordination is at the level of Category 4 (no formalised cooperation). For none of the RBMPs, however, did Belgium report to WISE that there was international coordination on public participation.

See Chapter 9 for information about international coordination on measures.

1.2 Progress with Commission recommendations

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

[10] http://www.vnbm.eu/

- *The RBMPs for the region of Wallonia should be urgently adopted. The public consultation in Wallonia will finish on 18 January 2013, and the plan should be adopted as soon as possible after this process is finalised.*

- *Given the lack of adoption of the plans in the Wallonia and recent adoption in Brussels capital, it is difficult to ensure that there is an effective coordination in the implementation of the WFD, including the setting of objectives and exemptions, and the definition of the necessary measures. The coordination between the different Belgian entities (Flanders, Wallonia, Brussels and the Federal coastal waters) should be enhanced for the next cycle of RBMPs. The implementation of the Directive should be coordinated across the RBDs, to ensure the achievement of the environmental objectives established under Article 4, and in particular all PoM need to be coordinated for the whole of the river basin district, including within a Member State.*

- *Ensure good coordination between the different regions. In the past, plans were developed separately by each of the Regions and by the Federal government for coastal waters. Although the Regions and the Federal government participate in the International River Commissions of the Scheldt and the Meuse, this is not sufficient to enable effectively coordinated implementation of the WFD. In particular, the PoMs need to be clearly linked where they concern pressures and measures that affect several Regions (e.g. pollution from the Regions that affects coastal waters).*

- *Ensure that consultation processes at various levels (regional, national, international) are coordinated and that key information (pressures, monitoring, status, environmental objectives and exemptions, measures) is made available in a consolidated way for the whole of the RBDs (at least for the Belgian part), avoiding separate products available in different timelines which made impossible having a completed picture of the RBD.*

Assessment:

While the information reported to WISE is insufficient to further assess whether intra-regional cooperation improved in the second cycle, Belgium subsequently clarified that coordination occurred at several levels, including bilateral cooperation among regions, national coordination and coordination within international RBDs. Evidence from the assessment of other topics nonetheless indicates there remain some different approaches between the regions on key issues of WFD implementation (i.e. the definition of Good Ecological Potential).

The information available indicates that mechanisms are in place and that cooperation among Belgium's regions has improved; consequently, these recommendations are partially fulfilled.

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 no change in the numbers of identified coastal, lake and transitional water bodies between the two cycles (Table 2.1). However, overall in Belgium there was a decrease in the number of river water bodies from 320 in the first RBMP to 302 in the second for example, in the Scheldt RBD there was a decrease, with 155 river water bodies in the second cycle versus 160 in the first cycle. The RBMP reported that this was due to updates in the RBD boundary and merging of homogeneous water bodies.

The minimum size (length) of rivers in Belgium has not significantly changed between the cycles (Table 2.2). For example, the minimum length in the Meuse RBD in the first cycle was 1.9 km, and 2.2 km in the second. In the Scheldt RBD, the minimum length of a river water body in the first cycle and in the second cycle was 0.3 km. The minimum size of water bodies has been reported for RBMP in Belgium which varies between RBDs. The Scheldt (Brussels) RBD has a small area and low number of water bodies, and expert judgement was used to select the three main surface water bodies for the reporting.

There was an increase in number of heavily modified river water bodies from 87 in the first RBMP to 99 in the second cycle in the Scheldt RBD accompanied by a reduction in natural rivers from 40 to 23 implying that some natural water bodies in the first RBMP have been designated as heavily modified in the second (Figure 2.1). There were also smaller reductions in natural and an increase in heavily modified river water bodies between the two cycles in the Meuse RBD. In contrast, in the Maas RBD, there was a small increase in the number of natural rivers, and small decrease in the number of heavily modified rivers between the two cycles.

The number of groundwater bodies was the same for both cycles and there are only some small differences in their areas (Table 2.3).

Table 2.1 Number and area/length of delineated surface water bodies in Belgium for the second and first cycles

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	BEESCAUT_RW			79	1 509				
2016	BEESCAUT_SCHELDE_BR			3	39				
2016	BEMAAS_VL	3	5	15	273				
2016	BEMEUSE_RW			257	4 952				
2016	BENOORDZEE_FED							1	128
2016	BERHIN_RW			16	287				
2016	BESCHELDE_VL	15	36	155	2 246	6	43	1	1
2016	BESEINE_RW			2	39				
2016	Total	18	40	527	9 346	6	43	2	130
2010	BEESCAUT_RW			79	1 533				
2010	BEESCAUT_SCHELDE_BR			3	39				
2010	BEMAAS_VL	3	5	17	270				
2010	BEMEUSE_RW			257	4 929				
2010	BENOORDZEE_FED							1	1 428
2010	BERHIN_RW			16	295				
2010	BESCHELDE_VL	15	36	160	2 203	6	42	1	1
2010	BESEINE_RW			2	40				
2010	Total	18	40	534	9 309	6	42	2	1 429

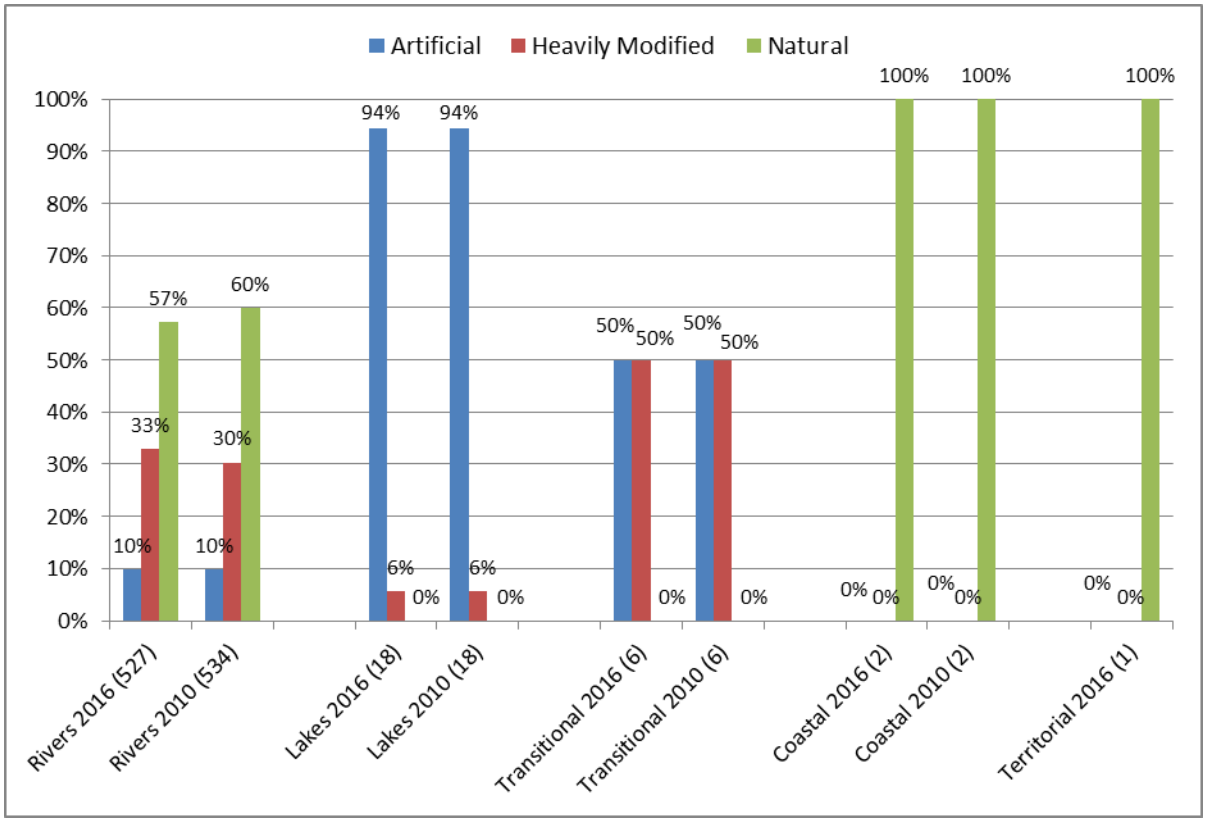
Source: WISE electronic reporting

Table 2.2 Size distribution of surface water bodies in Belgium in the second and first cycles

Year	RBD	Lake area (km²)			River length (km)			Transitional (km²)			Coastal (km²)		
		Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
2016	BEESCAUT_RW				2.31	107.43	19.11						
2016	BEESCAUT_SCHELDE_BR				10.13	14.93	13.09						
2016	BEMAAS_VL	0.65	3.27	1.53	1.6	79.72	18.18						
2016	BEMEUSE_RW				2.25	119.56	19.27						
2016	BENOORDZEE_FED										128.26	128.26	128.26
2016	BERHIN_RW				5.44	45.84	17.92						
2016	BESCHELDE_VL	0.08	19.87	2.39	0.32	109.93	14.49	0.16	26.15	7.24	1.46	1.46	1.46
2016	BESEINE_RW				13.22	25.89	19.55						
2010	BEESCAUT_RW				2.35	107.44	19.4						
2010	BEESCAUT_SCHELDE_BR				10.13	14.93	13.09						
2010	BEMAAS_VL	0.54	3.64	1.62	1.6	79.72	15.85						
2010	BEMEUSE_RW				1.92	122.68	20.12						
2010	BENOORDZEE_FED										1 428	1 428	1 428
2010	BERHIN_RW				5.44	45.89	18.45						
2010	BESCHELDE_VL	0.08	19.84	2.37	0.32	109.93	13.77	0.15	24.48	6.93	1.45	1.45	1.45
2010	BESEINE_RW				13.56	26.76	20.16						

Source: WISE electronic reporting.

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



Source: WISE electronic reporting.

Table 2.3 Number and area of delineated groundwater bodies in Belgium for the second and first cycles

Year	RBD	Number	Area (km²)		
			Minimum	Maximum	Average
2016	BEESCAUT_RW	10	72.56	1 382.00	566.06
2016	BEESCAUT_SCHELDE_BR	5	21.23	162.49	87.08
2016	BEMAAS_VL	10	45.9	875.05	352.01
2016	BEMEUSE_RW	21	38.15	3 311.10	591.66
2016	BENOORDZEE_FED				
2016	BERHIN_RW	2	65.63	668.03	366.83
2016	BESCHELDE_VL	32	49.27	6 051.10	1 364.36
2016	BESEINE_RW				
2016	Total	80			
2010	BEESCAUT_RW	10	73	1 382.00	566
2010	BEESCAUT_SCHELDE_BR	5	21	162	86.8
2010	BEMAAS_VL	10	46	875	351.3
2010	BEMEUSE_RW	21	38	3 588.00	592.1
2010	BENOORDZEE_FED				
2010	BERHIN_RW	2	65	668	366.5
2010	BESCHELDE_VL	32	48	6 050.00	1 360.16
2010	BESEINE_RW				
2010	Total	80			

Source: WISE electronic reporting

2.1.2 Identification of transboundary water bodies in national shares of international RBDs

Belgium did not report any transboundary surface water bodies[11]. However, there is evidence of coordination on adjacent water bodies, provided in the relevant overarching reports of the Scheldt and Meuse RBDs. A difference in the magnitude of rivers was identified: while RBDs in Wallonia included all rivers (including small water bodies), France included only the larger ones, while the Flanders region and the Netherlands had a similar and intermediate approach.

It was reported that for the transboundary surface water bodies, the coherence of characterization was checked for each of the water bodies (bi-or multilaterally between Member States). Homogeneous transboundary stretches of the Meuse River were defined using a joint and coordinated typology.

[11] Belgium subsequently clarified that there are no transboundary surface water bodies and that all water bodies take into account national/regional borders in their delineation because of administrative arrangements.

Belgium also did not report any transboundary groundwater bodies[12].

2.1.3 Typology of surface water bodies

In the second RBMP, Belgium reported two coastal water types, six lake types, three transitional water types and 41 river types (Table 2.4). The maximum number of types to be shared by RBDs was two in RBDs in both the Flanders and Wallonia RBDs, but not common to the two regions[13]. No information was found in the RBMPs on how the typologies have been made biologically relevant[14].

Table 2.4 Number of surface water body types at RBD level in Belgium for the first (2010) and second (2016) cycles

RBD	Rivers		Lakes		Transitional		Coastal	
	2010	2016	2010	2016	2010	2016	2010	2016
BEESCAUT_RW	6	5	0	0	0	0	0	0
BEESCAUT_SCHELDE_BR	2	2	0	0	0	0	0	0
BEMAAS_VL	7	5	8	1	0	0	0	0
BEMEUSE_RW	30	29	0	0	0	0	0	0
BENOORDZEE_FED	0	0	0	0	0	0	1	1
BERHIN_RW	3	5	0	0	0	0	0	0
BESCHELDE_VL	9	7	12	6	3	3	1	1
BESEINE_RW	1	1	0	0	0	0	0	0
TOTAL	45	41	13	6	4	3	2	2

Source: WISE electronic reporting
Note that the total is not the sum of the types in each RBD as some types are shared by RBDs.

There was a significant decrease in the number of water body types in Belgium from 64 in the first cycle RBMP to 53 in second RBMP. There was a reduction by seven types in lakes, all of which were in the two Flanders RBDs. For rivers, there was a reduction in types in six of the eight RBDs with rivers, an increase in one, and no change in the other. In the two largest RBDs, there were differing numbers of river types identified in second RBMP: 29 in the Meuse RBD and seven in the Scheldt RBD.

Six river, one coastal, two lake and one transitional water equivalent intercalibration types were reported by Belgium in second RBMP. 50 water bodies (~10%) were reported not to have

[12] Belgium subsequently clarified that there are no transboundary groundwater bodies and all water bodies take into account national/regional borders in their delineation because of administrative arrangements. Belgium further clarified that when a water body forming part of one or more cross border aquifers, coordination between the parties concerned has been put in place.
[13] Belgium subsequently clarified that this is true for the Escaut/Schelde and in Wallonia, the landscape is very different between the Escaut RBD and the Meuse RBD and the same typology cannot be applied.
[14] Belgium subsequently clarified that the information exists in background documents that did not form part of their reporting.

applicable common intercalibration types including artificial, heavily modified, and natural water bodies. Therefore it is unclear how the results of intercalibration are translated to these types and water bodies. In general, there has been a coordination of typologies with neighbouring states. For example, in the Meuse International RBD, there was a coordinated approach among Member State's parties for the typology of the rivers in the International RBD, but not for lakes. The exception was reported to be for Brussels Region, because there are very few water bodies, and they are highly modified or artificial for which there were no equivalent counterparts.

2.1.4 Establishment of reference conditions for surface water bodies

Table 2.5 shows the percentage of surface water body types in Belgium with reference conditions established for the first and second cycles. For one of the two coastal water types (in the Scheldt RBD) reference conditions had not been established for any quality element. For the other type in the North Sea RBD, reference conditions were reported to be established for all biological quality elements and physico-chemical quality elements but for none of the hydromorphological quality elements.

Table 2.5 Percentage of surface water body types in Belgium with reference conditions established for all, some and none of the biological, hydromorphological and physico-chemical quality elements[15]

Water category	Water types	Biological quality elements	Hydromorphological quality elements	Physico-chemical quality elements
Rivers	All	90%	53%	43%
	Some	10%		10%
	None		47%	47%
Lakes	All	100%		
	Some			
	None		100%	100%
Transitional	All	100%		
	Some			
	None		100%	100%
Coastal	All	50%		50%
	Some			
	None	50%	100%	50%

Source: WISE electronic reporting

All six lake types in Belgium were reported to have reference conditions established for all biological quality elements but for none of the hydromorphological and physico-chemical

[15] Belgium subsequently stated that the data reported into WISE are incorrect for hydromorphological and physico-chemical quality elements.

quality elements. Of the 18 lakes in Belgium (all in the Flanders RBDs), 17 are artificial and the other heavily modified. The significance of the lack of comprehensive reference conditions for lakes needs to be assessed in relation to assessing the ecological potential of these lakes[16].

25 of the 58 river types were reported to have reference conditions for all relevant biological, hydromorphological and physico-chemical quality elements: all of these types were in the Wallonia RBDs. The other 6 river types in the Wallonia RBDs had reference conditions for all hydromorphological quality elements but only for some biological quality elements and physico-chemical quality elements. For all the river types in the Flanders RBDs reference conditions have been established for relevant biological quality elements and for all physico-chemical quality elements. This information is available in the RBMPs but was not always reported through WISE. For the Scheldt (Brussels) RBD (two types) reference conditions have been established for all biological quality elements but for none of the hydromorphological and physico-chemical quality elements. There are still gaps in the establishment of reference conditions in Belgium.

As with lakes, for transitional waters, reference conditions were established in all 4 types for all relevant biological quality elements but for none of the hydromorphological and physico-chemical quality elements.

2.1.5 Characteristics of groundwater bodies

Six RBDs in Belgium have delineated groundwater bodies. All RBDs reported the geological characteristics of the aquifers and whether they are layered or not. Groundwater body links to terrestrial ecosystems have been reported in all six RBDs but links to surface water bodies are only reported by four RBDs: the two RBDs in the Flanders region provided an explanation of why this information was not reported to WISE.

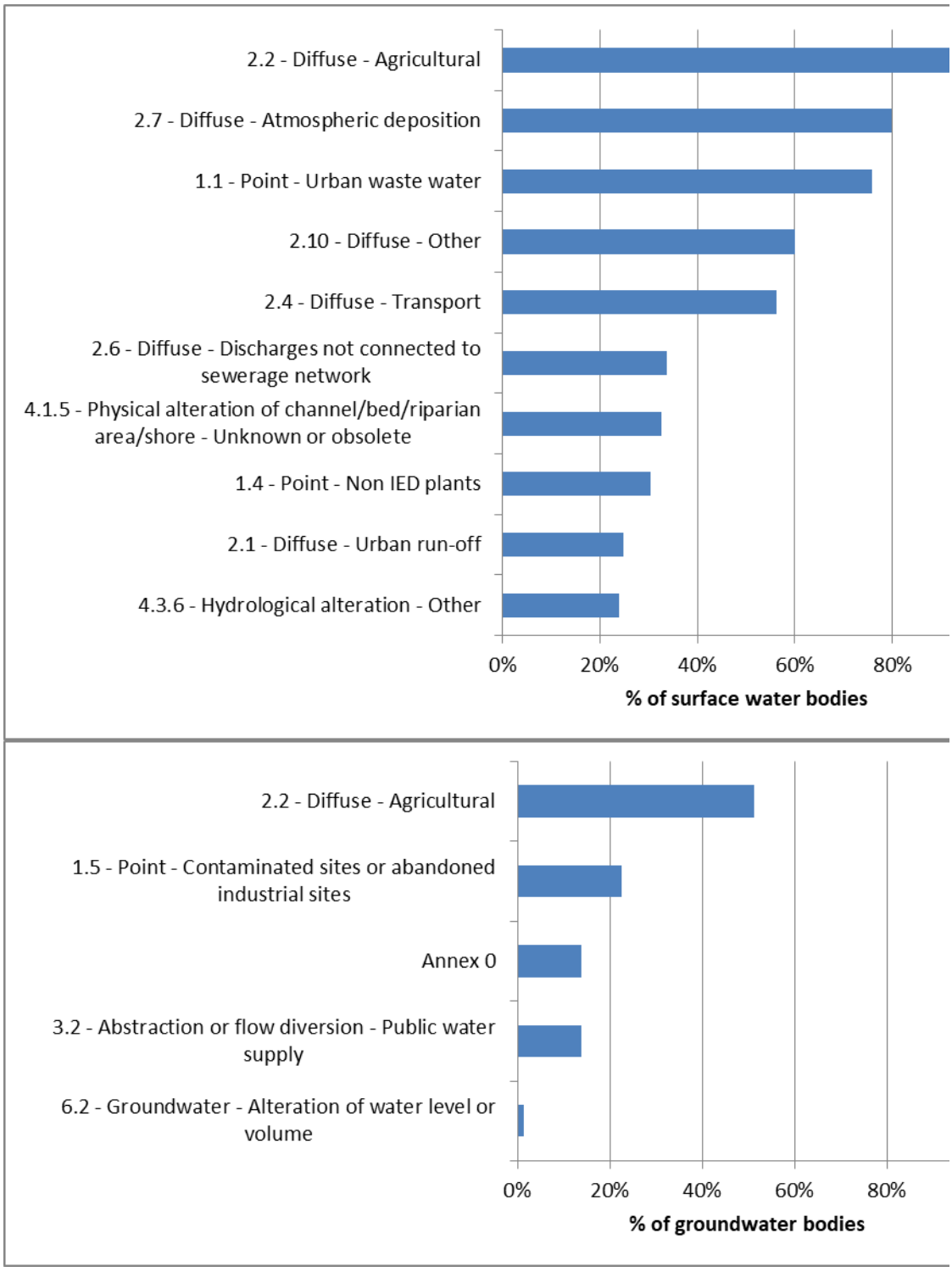
2.1.6 Significant pressures on water bodies

The most significant pressure on rivers in Belgium was from diffuse agricultural sources (96% of river water bodies in six RBDs) (Figure 2.2.). Atmospheric deposition was significant in all eight RBDs with 82 % of river water bodies being affected and point source pressures from urban waste water in seven RBDs affecting 79 % of river water bodies. In terms of lakes, 89 % (of the 16) lake water bodies are affected by diffuse agricultural pressures, 28 % by ‘physical alteration of channel/bed/riparian area/shore - Unknown or obsolete’ and ‘diffuse atmospheric deposition’ in 22 %.

[16] Belgium subsequently clarified that this assessment has been carried out and this information is available in background documents.

All six transitional water bodies in Belgium are affected by 'diffuse agricultural pressures,' 'atmospheric deposition' and 'physical alteration of channel/bed/riparian area/shore - Unknown or obsolete.'

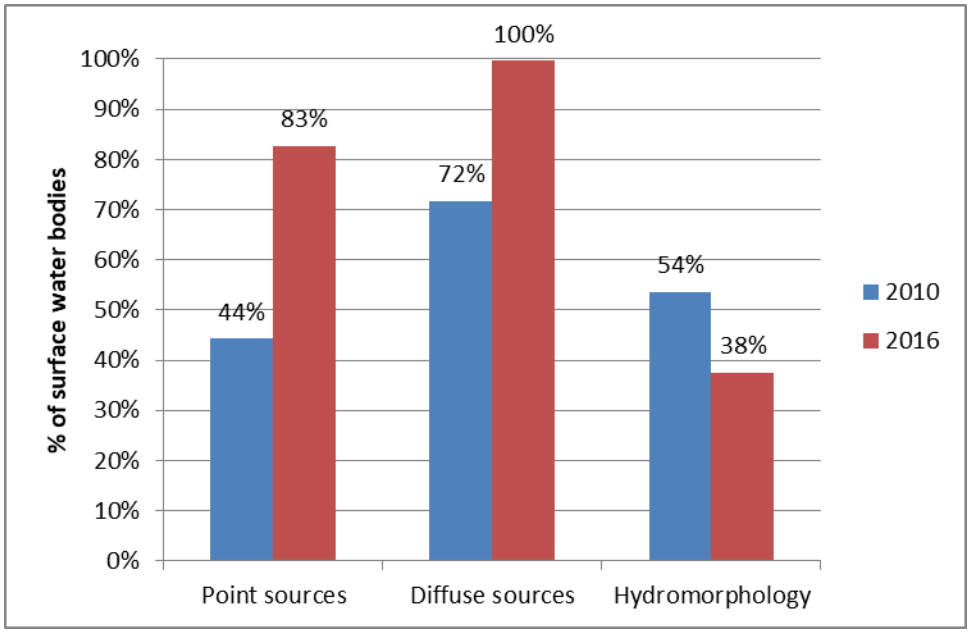
Figure 2.2 The 10 most significant pressures on surface water bodies and groundwater bodies in Belgium for the second cycle



Source: WISE electronic reporting

The pressures reported for each cycle are not directly comparable as the methodology for the identification of pressures has changed. Therefore the changes shown in Figure 2.3 are not actual changes in pressures.

Figure 2.3 Comparison of pressures on surface water bodies in Belgium in the first and second cycles. Pressures presented at the aggregated level. Note there were 554 identified surface water bodies for the second cycle and 560 for the first cycle



Source: WISE electronic reporting

The most significant pressure on groundwater bodies in Belgium in the second RBMP was 'diffuse agriculture' (51 %) and 'point Industrial Emissions Directive[17] plants' (25 %) and 'point non-Industrial Emissions Directive plants' (24 %) (Figure 2.2). In first RBMP, 46 % of groundwater bodies were affected by diffuse source pressures, in the second RBMP it was 56 %. Similarly, in terms of point source pressures 14 % of groundwater bodies were affected in the first RBMP and 25 % in the second.

2.1.7 Definition and assessment of significant pressures on surface and groundwater

There were differences between the regions in Belgium in the tools used to define significant pressures on surface waters. Whilst the four Wallonia RBDs, the Scheldt (Brussels) and North Sea RBDs used a combination of numerical tools and expert judgement for point and diffuse sources, the two Flanders RBDs used numerical tools. For water abstraction pressures the

[17] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0075

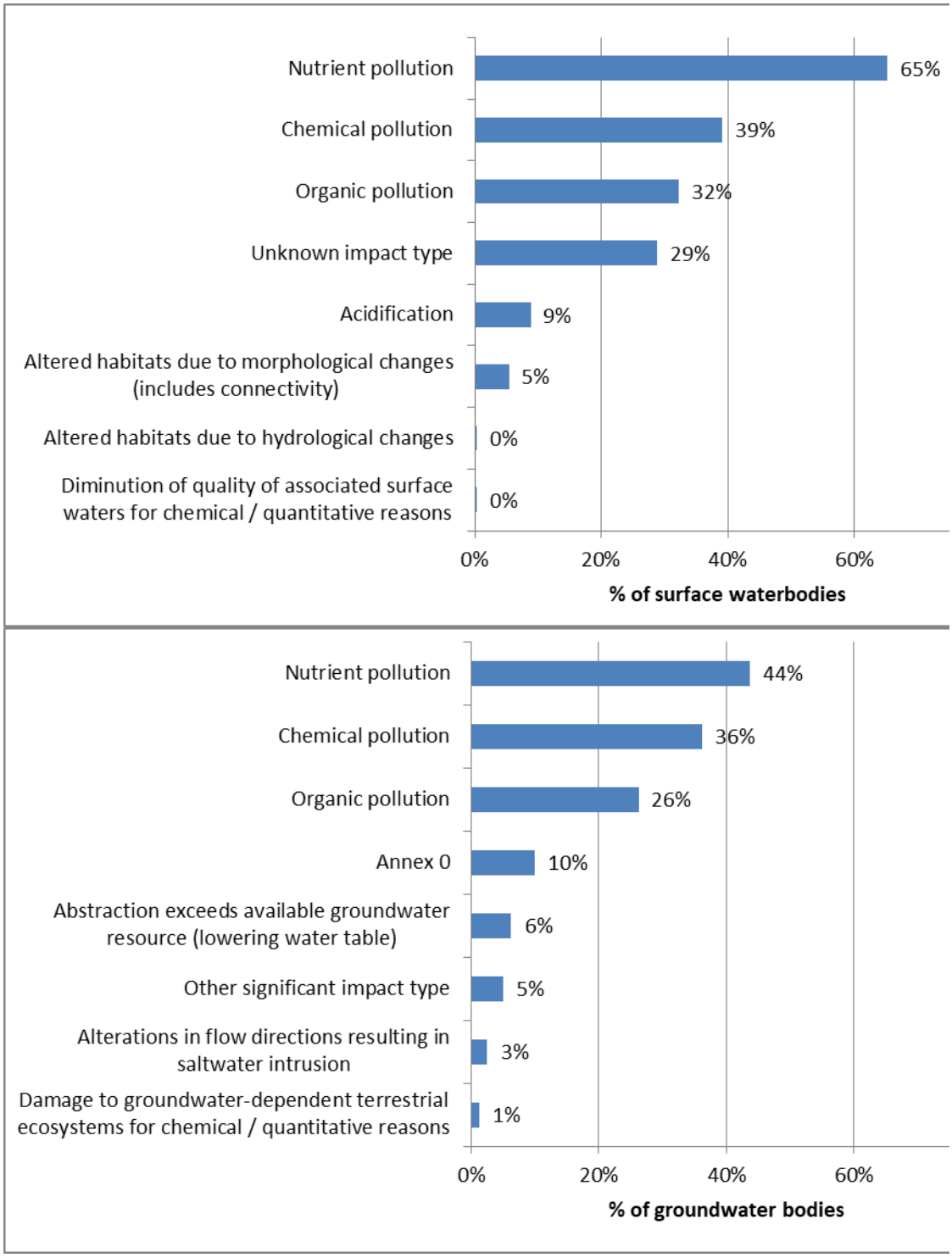
RBDs in Wallonia used a combination of both expert judgment and numerical tools, whilst in the Flanders region expert judgment was used. Significance of pressures was linked to failure of objectives and was defined in terms of thresholds in the Flanders RBDs but not in the Wallonia RBDs.

Expert judgment was used to assess significant point sources on groundwater in six RBDs; in the seventh (the Maas RBD) a combination of expert judgment and numerical tools was used. In five RBDs, a combination of both expert judgement and numerical tools was used to assess diffuse sources and in the other two expert judgment only. Expert judgement was used for water abstraction pressures in five RBDs and two used a combination of both. Significance has been defined in terms of thresholds in all seven RBDs and was linked to failure of objectives in three RBDs.

2.1.8 Significant impacts on water bodies

Nutrient pollution was the most significant impact on all surface water categories 65 % of surface water bodies) and on groundwater (44 % of groundwater bodies) in Belgium (Figure 2.4). Chemical pollution was also significant in surface and groundwaters. Acidification also impacted 89 % of lakes in Belgium.

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



Source: WISE electronic reporting

2.1.9 Groundwater bodies at risk of not meeting good status

73 % of groundwater bodies in Belgium were reported to be at risk of failing good chemical status. Each of the six RBDs with groundwater bodies reported some groundwater bodies at risk.

Thirty-three different pollutants were reported to be putting groundwater bodies at risk of failing chemical status in Belgium. The most significant in terms of proportion of affected groundwater bodies were nitrate (51 % of groundwater bodies across all six RBDs), pesticides (40 % of groundwater bodies across six RBDs) and sulphate (27 % of groundwater bodies across three RBDs). Further information on the chemical status of groundwaters is provided in Chapter six of this report. Fifteen percent of groundwater bodies in Belgium were reported to be at risk of failing good quantitative status: three of the six RBDs reported no groundwater bodies to be at risk. The reasons for the risk were reported as water balance in three RBDs and saline intrusion in one RBD. Further information on the quantitative status of groundwaters is provided in Chapter 5 of this report.

2.1.10 Quantification of the gap and apportionment of pressures

The only RBD to report on the gaps to be filled by measures was the North Sea RBD. It is clear from the information reported that diffuse source pollution has been apportioned as the main sources relevant to this RBD: agriculture, transport, atmospheric deposition and other. The other RBDs reported significant pressures to be addressed in the PoM but no gaps were reported. The Annex 0 reported that the information is available but could not be reported in the required format. Belgium reported eighteen chemical substances relevant to groundwater and fifty-four relevant to surface waters which are to be subject to measures but no gaps to be filled were provided for any of the substances. The Annex 0 reported that the information is available but could not be reported in the required format. Further information on the PoM is provided in Chapter 9 of this report.

2.1.11 Inventories of emissions, discharges and losses of chemical substances

Article 5 of the Environmental Quality Standards Directive 2008/105/EC[18] (EQS Directive) requires Member States to establish an inventory of emissions, discharges and losses of all Priority 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

[18] 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 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

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 (suppressing) emissions, discharges and losses for priority substances (priority hazardous substances).

All RBDs except the North Sea RBD[19] reported inventories for all Priority Substances. The two step approach from the Common Implementation Strategy Guidance Document n°28[20] has been followed for all substances considered in the inventories. Tier 1 of the methodology was implemented for many of the substances included in the inventories, including for some of the substances judged relevant at RBD level. Tier 4 (source oriented) or a combination of Tier 1 (point source information) and Tier 2 (riverine load) were also implemented. In some cases the methodology applied was not reported. The data quality was assessed as medium, uncertain or very uncertain, or wasn't reported.

2.2 Main changes in implementation and compliance since first cycle

Overall in Belgium, there was a decrease in the number of river water bodies from 320 in the first RBMP to 302 in the second. There was an increase of heavily modified river water bodies from 87 in the first cycle to 99 in the second in the Scheldt RBD accompanied by a reduction in natural rivers from 40 to 23 implying that some natural water bodies in the first cycle RBMP have been designated as heavily modified in the second.

There was a significant decrease in the number of water body types in Belgium from sixty-four in the first cycle RBMP to fifty-three in the second RBMP. There was a reduction by seven types in lakes, all in the two Flanders RBDs. For rivers there was a reduction in types in six of the eight RBDs with rivers, an increase in one and no change in the other. In the two largest RBDs there were differing numbers of river types identified in the second RBMP: twenty-nine in the Meuse RBD and seven in the Scheldt RBD.

In the first cycle RBMP, diffuse source pressures were affecting 72 % of surface water bodies increasing to 100 % of surface water bodies in second RBMP. 44 % of surface water bodies were affected by point source pressures in the first cycle rising to 83 % in second. In the first cycle, 46 % of groundwater bodies were affected by diffuse source pressures, in the second cycle it was 56 %. Similarly, in terms of point source pressures 14 % of groundwater bodies were affected in the first cycle and 25 % in the second.

[19] Belgium mentioned that direct discharges to the North Sea are forbidden. However, an inventory of emissions would need to be established, to take into account diffuse sources and related emissions.
[20] CIS Guidance N° 28 - Preparation of Priority Substances Emissions Inventory
http://ec.europa.eu/environment/water/water-framework/facts_figures/guidance_docs_en.htm

2.3 Progress with Commission recommendations

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

- Recommendation: *Where there are currently high uncertainties in the characterisation of the RBDs, identification of pressures, and in the 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: Hydromorphological pressures have been identified in all RBDs, although not all hydromorphological pressures have been fully assessed in all RBDs (for example, the Scheldt (Brussels) RBD[21] did not report on the assessment of dams barriers and locks and hydrological pressures). Hydromorphological pressures have been addressed for the RBDs in Wallonia. Overall progress has been made, but there are further steps that can be taken.

  For the second cycle one of the two RBDs with coastal waters (the North Sea RBD and the Scheldt RBD) identified specific significant pressures. However the Scheldt RBD only reported "unknown anthropogenic pressures"[22]. There has therefore been progress in one RBD but none in the other on this aspect of the recommendation.

  Belgium did not report any transboundary surface or groundwater bodies to WISE: but there is evidence of coordination.

  Overall, there has been some progress in improving characterisation but this recommendation has been partially fulfilled.

- Recommendation: *Ensure that the RBMPs clearly identify the gap to good status for individual pressures and water bodies, and that PoM are designed and implemented to close that gap since none of the three Regions carried out an assessment/analysis of how far pressures (and their corresponding sources) have to be reduced to achieve the WFD objectives.*

  Assessment: Identifying the gap to good status has only been reported for the North Sea RBD. The other RBDs explained in their Annex 0 why this information was not

[21] Belgium subsequently highlighted that hydromorphological is indicated as a significant pressure in the reporting
[22] Belgium subsequently stated that this water body is a sea gate in a nature reserve with no anthropogenic pressures.

reported to WISE: Flanders and Brussels Regions claimed it was too difficult; Wallonia stated that it has the information but not in the required format[23].

The reported tools to assess significance of pressures show that expert judgment is still used for some pressures. The use of numerical tools only (including modelling), was reported by some RBDs for some pressures.

Overall, this recommendation has been partially fulfilled.

- Recommendation: *Establish a quantitative source apportionment and a link between pressures/impacts and their sources. Belgium should use these as a basis for determining PoM.*

  Assessment: Only evidence of limited progress: see previous recommendation. Therefore this recommendation has been partially fulfilled.

[23] Belgium subsequently clarified that other tools and models were used and explained in the RBMPs. highlighting the difficulties of setting up a gap analysis in a multiple pressure environment.

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

3.1. Assessment of implementation and compliance with WFD requirements in 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.

Monitoring programmes were generally organised in terms of surveillance and operational purposes for each water category in the RBDs. Of note is the surveillance and operational programme for territorial (for chemicals) and coastal waters in the North Sea RBD. In the Maas RBD there is no surveillance programme for lakes, and in the Scheldt RBD there is no programme for the one coastal water body even though these water categories occur in these RBDs.

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 cycles. Table 3.2 shows the number of sites used for different purposes for the second RBMPs.

There was an increase from four to six surveillance sites reported in coastal waters between the two cycles[24]; however, for lakes, rivers, and transitional waters there were decreases. Proportionally the largest decrease was in lakes where 11 sites had been used for the first RBMPs and only one for the second RBMPs, with the Maas RBD no longer monitoring any of its three lakes for surveillance purposes. In terms of rivers, there was an increase in numbers between the cycles in one RBD, a reduction in two, and no change in four: overall there was a 9% decrease in Belgium. The number of surveillance sites was halved in transitional waters between the two cycles.

Overall in Belgium there was a 7 % increase in the number of sites used for operational monitoring between the two cycles. Proportionally, the largest increase (75 %) was in lakes. There was also an increase for rivers, but a 23 % decrease in transitional waters. In terms of rivers, there were increases in two RBDs (those in the Flanders region), a decrease in one (Meuse RBD) and no changes in the other four RBDs with rivers.

[24] Belgium subsequently stated this is due to differences in reporting and not to an actual increase in surveillance sites.

Table 3.1 Number of sites used for surveillance and operational monitoring in Belgium 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 do not take into account whether sites are used for ecological and/or chemical monitoring

second RBMP	Rivers		Lakes		Transitional		Coastal[25]		Territorial[26]	
	Surv.	Op.	Surv.	Op	Surv.	Op.	Surv.	Op.	Surv.	Op.
BEEscaut_RW	14	74								
BEEscaut_Schelde_BR	8	5								
BEMaas_VL	8	42		19						
BEMeuse_RW	36	142								
BENoordzee_FED							6	6	1	2
BERhin_RW	3	7								
BESchelde_VL	52	393	1	70	3	10				
BESeine_RW	1	1								
Total by type of site	*122*	*664*	*1*	*89*	*3*	*10*	*6*	*6*	*1*	*2*
Total number of monitoring sites	*721*		*89*		*10*		*6*		*2*	
first RBMP										
BEEscaut_RW	14	74								
BEEscaut_Schelde_BR	9	5								
BEMaas_VL	6	38	3	10						
BEMeuse_RW	36	143								
BENoordzee_FED		.					4	5		
BERhin_RW	3	7								
BESchelde_VL	65	385	8	41	6	13				
BESeine_RW	1	1								
Total by type of site	*134*	*653*	*11*	*51*	*6*	*13*	*4*	*5*		
Total number of monitoring sites	*870*		*51*		*13*		*5*			

Sources: Member States electronic reporting to WISE

[25] For the second RBMP 3 stations are also reported to monitor priority substances in biota for surveillance and operational monitoring. They were also surveyed in the first RBMP but not separately included yet as monitoring stations in the first RBMP.

[26] Not reported separately in WISE for the first RBMP, so these stations are included in the coastal waters stations in the first RBMP.

Table 3.2 Number of monitoring sites in relevant water categories used for different purposes in Belgium[27]

Monitoring Purpose	Lakes	Rivers	Transitional	Coastal	Territorial
CHE - Chemical status		366		4	2
ECO - Ecological status		369		3	
HAB - Protection of habitats or species depending on water - WFD Annex IV.1.v		204			
MSF - Marine Strategy Framework Directive monitoring network				4	2
NID - Nutrient sensitive area under the Nitrates Directive - WFD Annex IV.1.iv		43			
OPE - Operational monitoring	89	664	10	6	2
RIV - International network of a river convention (including bilateral agreements)		20			
Strategic Environmental Assessment - International network of a sea convention				6	2
SOE - EIONET State of Environment monitoring		54			
SUR - Surveillance monitoring	1	122	3	6	1
TRE - Chemical trend assessment		54			
UWW - Nutrient sensitive area under the Urban Waste Water Treatment Directive - WFD Annex IV.1.iv		426			
Total sites irrespective of purpose	**89**	**869**	**10**	**6**	**2**

Source: WISE electronic reporting

The RBMPs and background documents provide a limited amount of explanation of the observed changes. For RBDs in Flanders, the official decree that describes the monitoring programme is provided but does not elaborate on the changes made. For the Meuse RBD, some general information is provided with some details on the reasons for the changes. There is a total of over 40 modified monitoring sites in rivers. The reasons for these changes include:

- Abolition of a number of measuring stations that were not necessary (e.g. stations used to determine reference conditions);
- Some stations have been changed for reasons of safety of access; and,
- Some stations have been changed due to a more rational planning of the network.

[27] Belgium subsequently stated that as the Belgian regions reported in different way on this topic, aggregation and conclusions have to be analysed with care and are not representative at a country level.

The background document on the monitoring programme for RBDs in the Wallonia region includes a description of the new monitoring programme and a comparison with the first cycle monitoring, but no further reasons or background are provided about why changes have been implemented[28].

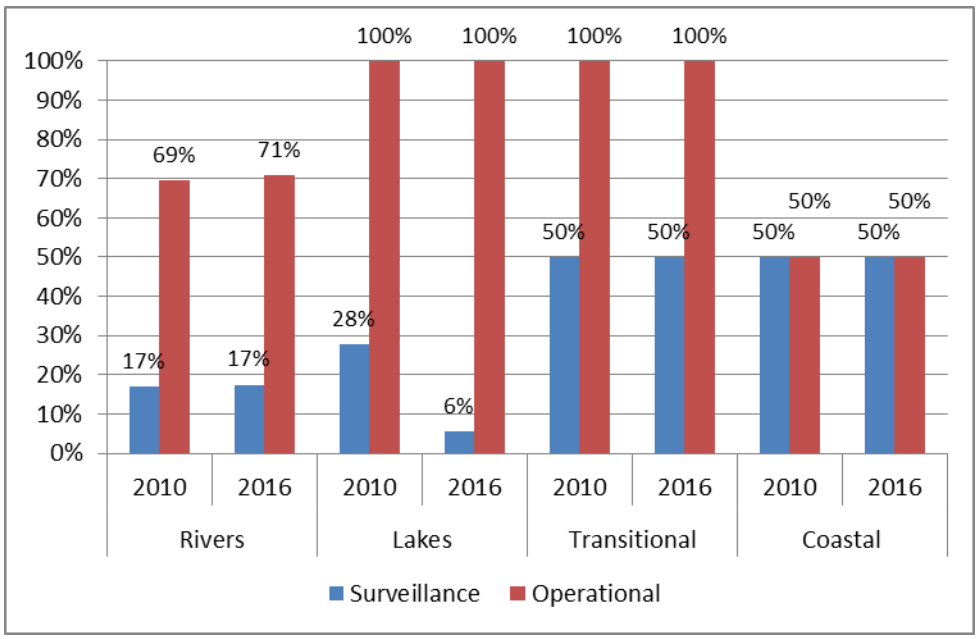
For the Scheldt (Brussels) RBD, the changes are described in the RBMP but no justification or further detail is provided in the RBMP or background document.

Surveillance monitoring of surface water bodies

There were no changes in the number of delineated coastal, transitional and lake water bodies between the two cycles and only small changes in the number of rivers (534 in the first RBMPs to 527 in the second).

In general in Belgium, a larger proportion of lake, river, and transitional water bodies were monitored operationally than for surveillance purposes: for example 71 % and 17 % of river water bodies, respectively (Figure3.1).

Figure 3.1 Percentage of water bodies included in surveillance and operational monitoring in Belgium for the first RBMPs (2010) and second RBMPs (2016). Note no differentiation is made between water bodies included in ecological and/or chemical monitoring



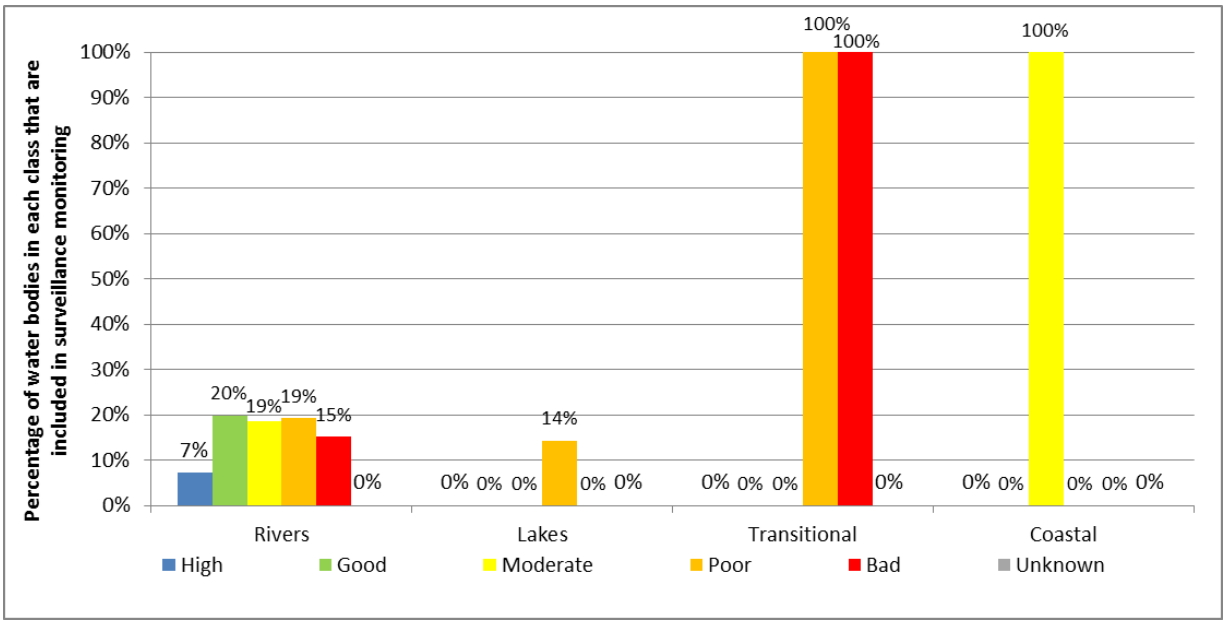
Source: WISE electronic reporting

[28] Belgium (Wallonia) subsequently stated that in the future resources will focus more specifically on the monitoring of the parameters declassifying the water bodies. However, observation will take place in order to ensure that no degradation of the environment occurre for the parameters for which environmental objectives had already been achieved.

Overall, there appears to have been a reduction in surveillance monitoring and an increase in operational monitoring. For the second RBMPs, only one lake out of 18 in Belgium was included in surveillance monitoring, while for the first RBMPs, five had been included in surveillance monitoring.

There was a small increase of river water bodies included in surveillance monitoring, from 90 in the first RBMPs to 92 in the second. The Scheldt RBD has a coastal water body but no monitoring data was available. Monitored surface water bodies in the surveillance programme were distributed throughout the status classes in rivers (Figure 3.2) but were limited to less than good classes for the other relevant water categories.

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



Source: WISE electronic reporting

A differentiated presentation between ecological status and potential and including all types of quality element can be viewed here - https://tableau.discomap.eea.europa.eu/t/Wateronline/views/WISE_SOW_QualityElement_Status_Compare/SWB_QualityElement_Group?iframeSizedToWindow=true&:embed=y&:display_count=no&:showAppBanner=false&:showVizHome=no

Operational monitoring of surface water bodies

The only changes in the numbers of water bodies included in operational monitoring between the two cycles were for rivers. Overall there was a small increase, from 69 % of river water bodies in the first RBMPs to 71 % in the second. In three RBDs (all in the Wallonia region) there were small increases in the number included in operational monitoring, and small reductions in the two RBDs in the Flanders region.

Quality elements monitored (excluding River Basin Specific Pollutants)

Table 3.3 illustrates the quality elements used for the monitoring of surface waters for the second RBMPs; no differentiation is made between purposes of monitoring.

In the first and second RBMPs, two biological quality elements were reported to be monitored in the coastal water body in the North Sea RBD. Note that it has been accepted by the Common Implementation Strategy Working Group on Ecological Status that angiosperms and macroalgae are not applicable in coastal and transitional waters in Belgium. In addition, hydromorphology was not monitored, and only two general physicochemical quality elements were monitored.

Hydromorphological quality elements were reported to be monitored in lakes in the first RBMPs, whereas in the second RBMPs they were not. All required biological quality elements and general physicochemical quality elements were reported to be monitored in both cycles.

Table 3.3 ***Quality elements monitored for the second RBMPs in Belgium (excluding River Basin Specific Pollutants). Note: quality elements may be used for surveillance and/or operational monitoring. Note that angiosperms and macroalgae are not applicable in coastal and transitional waters in Belgium.***

Biological quality elements									
	Phytoplankton	Macrophytes	Phytobenthos	Benthic invertebrates	Fish	Angiosperms	Macroalgae	Other aquatic flora	Other species
Lakes	Yes	Yes	Yes	Yes	Yes			No	
Rivers	Yes	Yes	Yes	Yes	Yes			No	
Transitional	Yes	Yes		Yes	Yes	No	No	No	
Coastal	Yes			Yes		No	No	No	

Hydromorphological quality elements		
Hydrological or tidal regime	Continuity conditions	Morphological conditions
No		No
Yes	Yes	Yes
No		Yes
No (Yes)		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
Lakes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Rivers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Transitional	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Coastal	No	No	Yes	No	No	Yes	No (Yes)	No	No

Source: WISE electronic reporting. Values in brackets were subsequently provided by Belgium

All required biological quality elements and general physicochemical quality elements were also reported to be monitored in rivers in all seven RBDs with rivers for the first and second cycles. However, only three of the seven RBDs – Scheldt and Maas (all three elements) and Scheldt (Brussels) (only hydrological regime) - indicated that they monitored hydromorphological quality elements in the first RBMPs. In the second RBMPs, six of the seven RBDs reported that these elements were now monitored, indicating some progress. In the Scheldt (Brussels) RBD only hydrological regime was still monitored, leaving gaps in terms of river continuity and morphological conditions.

In terms of transitional waters, the same biological quality elements and hydromorphological quality elements were reported for both cycles.

None of the lake and transitional water bodies included in surveillance monitoring (one and three respectively) was monitored for all the required biological, hydromorphological, and general physicochemical quality elements. In terms of the biological quality elements, only

phytoplankton (in two of the three water bodies) in transitional waters and phytoplankton and benthic invertebrates in lakes were monitored. Phytoplankton and benthic invertebrates were monitored in the coastal water body included in surveillance monitoring but hydromorphological and some general physicochemical quality elements were not monitored.

In terms of rivers, all the required biological quality elements were monitored in four of the seven RBDs with rivers, representing 62 % of the river water bodies included in surveillance monitoring. For the hydromorphological quality elements, 73 % of those river water bodies included in surveillance monitoring were monitored for all required elements. 99 % of river water bodies included in surveillance monitoring were monitored for all required general physicochemical quality elements.

Two biological quality elements (phytoplankton and benthic invertebrates) were used for the operational monitoring of coastal waters; only one of the two coastal water bodies was included in operational monitoring. For transitional waters, all four relevant biological quality elements were included in operational monitoring. Whilst all relevant biological quality elements were included in the operational monitoring of lakes, phytoplankton was monitored in all those water bodies monitored operationally, followed by fish and benthic invertebrates (78% of water bodies), phytobenthos (72 %) and macrophytes (67 %). Again, all relevant biological quality elements were included in the operational monitoring of rivers, with benthic invertebrates being monitored in 90 % of river water bodies included in operational monitoring, followed by phytobenthos (88 %), macrophytes (72 %) and fish (70 %).

In Belgium as a whole, all coastal, lake and transitional water bodies at less than good ecological status/potential were included in operational monitoring, while in rivers 88 % were included.

Annex V of the WFD provides guidance on the frequency of monitoring of the different quality elements. Surveillance monitoring should be carried out for each monitoring site for a period of one year during the period covered by a RBD management plan; that is, once every six years. For phytoplankton, this should be done twice during the monitoring year and once during the year for the other biological quality elements. Operational monitoring should take place at intervals not exceeding once every six months for phytoplankton and once every three years during the six year cycle for the other biological quality elements. Greater intervals may be justified on the basis of technical knowledge and expert judgement.

Only two biological quality elements were used for the surveillance monitoring of coastal waters: both phytoplankton and benthic invertebrates were sampled at the minimum recommended frequency at all three sites used. In transitional waters, only one biological quality element (phytoplankton) was sampled at the minimum recommended frequency at the

two sites used. Only fish and phytoplankton were used in the surveillance monitoring of lakes, with one site for each. The site for fish was sampled at the minimum recommended frequency, while the site for phytoplankton was not. Five biological quality elements were used for the surveillance monitoring of rivers and none were sampled at the minimum recommended frequency at all the sites where they were monitored. The maximum proportion of sites where the minimum recommended frequency was met or exceeded was for phytoplankton and phytobenthos, for which 76 % of sites were sampled at the minimum frequency, and the minimum for fish (56 % of sites).

Overall, only 69 % of the sites used for the surveillance monitoring of the biological quality elements in surface water bodies in Belgium were sampled at, or greater than, the minimum recommended frequency. For operational monitoring it was only 24 % of sites.

Three sites were used for operational monitoring in one of the two coastal water bodies and the sites were sampled at least at the minimum recommended frequency for phytoplankton and benthic invertebrates. In contrast, none of biological quality elements used in transitional waters were sampled at the minimum recommended frequency. Although more biological quality elements and more sites were used for the operational monitoring of lakes compared to surveillance, three of the five elements were not sampled at the minimum recommended frequency at any of the sites; the other two were in line with the minimum recommended frequency at 44 % of the 46 sites used for phytobenthos and 27 % of the 41 sites used for benthic invertebrates. None of the five biological quality elements used in the operational monitoring of rivers were sampled at the minimum recommended frequency at all sites. No sites were sampled at least at the recommended frequency for phytoplankton whereas for benthic invertebrates 44 % of sites were.

River Basin Specific Pollutants and matrices monitored

A total of 79 different River Basin Specific Pollutants were reported to be monitored in the two Flanders RBDs and the North Sea Federal RBD in Belgium, all of them in water and three in sediment. Polychlorinated biphenyls, copper and zinc were monitored in sediment at one site in coastal waters and two sites in territorial waters. All surface water categories, including territorial waters, were monitored for at least some of the pollutants. No information on the individual chemical substances monitored was reported by the four Walloon RBDs and the Brussels Region RBD.

Table 3.4 summarises the number of monitoring sites in each of the categories monitored for River Basin Specific Pollutants. This is mainly from the information reported at the generic quality element level. The notable differences between the two cycles are an increase in the number of monitoring sites in lakes (from 0 to 22) and in rivers (from 523 to 617).

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

RBMP		Rivers	Lakes	Transitional	Coastal	Territorial
second	Sites used to monitor River Basin Specific Pollutants	617	22	7	1	2
first	Sites used to monitor non-priority specific pollutants and/or other national pollutants	523	0	5	1	2

Sources: WISE electronic reporting.Note: the data for rivers, lakes and transitional waters were reported at the generic quality element level; that for coastal and territorial waters was from reporting on chemicals monitored at the site level.

River Basin Specific Pollutants were reported in the first RBMPs to be monitored in rivers, transitional and coastal waters. In the second RBMPs this has been extended to lakes and territorial waters[29].

Annex V of the WFD provides guidance on the frequency of monitoring of the different quality elements: once every three months is recommended for "other pollutants" which are taken here to equate to river basin specific pollutants. Surveillance monitoring should be carried out for each monitoring site for a period of one year during the period covered by a river basin management plan i.e. six years. For river basin specific pollutants this should be done four times for the surveillance year, and for operational monitoring four times a year for each year of the cycle. Greater intervals may be justified on the basis of technical knowledge and expert judgement.

All 79 River Basin Specific Pollutants were included in surveillance monitoring and all were sampled at least at the minimum recommended frequency at all of the sites where they were monitored.

Information on the individual River Basin Specific Pollutants was not reported at the site level for the Wallonia region RBDs, though information was reported at the generic quality element level. For the Rhine and the Seine RBDs it is also unclear whether the lack of reporting of exceedances is a reporting mistake or means that there are no River Basin Specific Pollutants exceeding their Environmental Quality Standards in these two RBDs.

[29] Belgium subsequently indicated that River Basin Specific Pollutants had also been monitored in territorial waters for the first RBMPs, although this had not been reported to WISE.

Transboundary surface water body monitoring

Belgium did not report any transboundary surface water bodies. Three RBDs reported river monitoring sites that are part of an international network of a river convention[30]. In addition, there are sites in the North Sea RBD in coastal and territorial waters that are part of an international network of a sea convention.

3.1.2. Ecological Status/potential of surface water

The ecological status/potential of surface water bodies in Belgium in the second RBMPs is illustrated in Map 3.1.

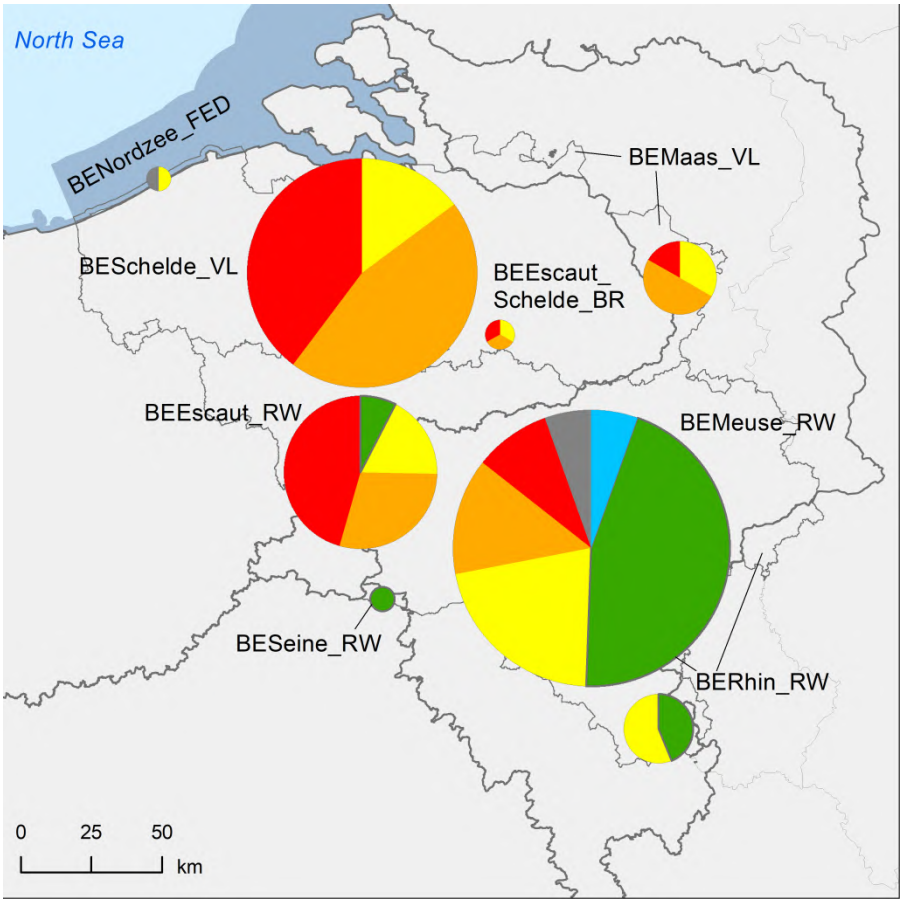
Figure 3.3 compares the ecological status of surface water bodies in Belgium in the first RBMPs with that in the second RBMPs and that expected by 2015.

Member States were asked to report the expected date for the achievement of good ecological status/potential. The information for Belgium is shown in Figure 3.4.

[30] Belgium subsequently clarified that all water bodies in Belgium take into account national/regional borders in their delineation. Belgium has also informed that these water bodies are considered as contiguous water bodies because of administrative arrangements for which coordination has been put in place.

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

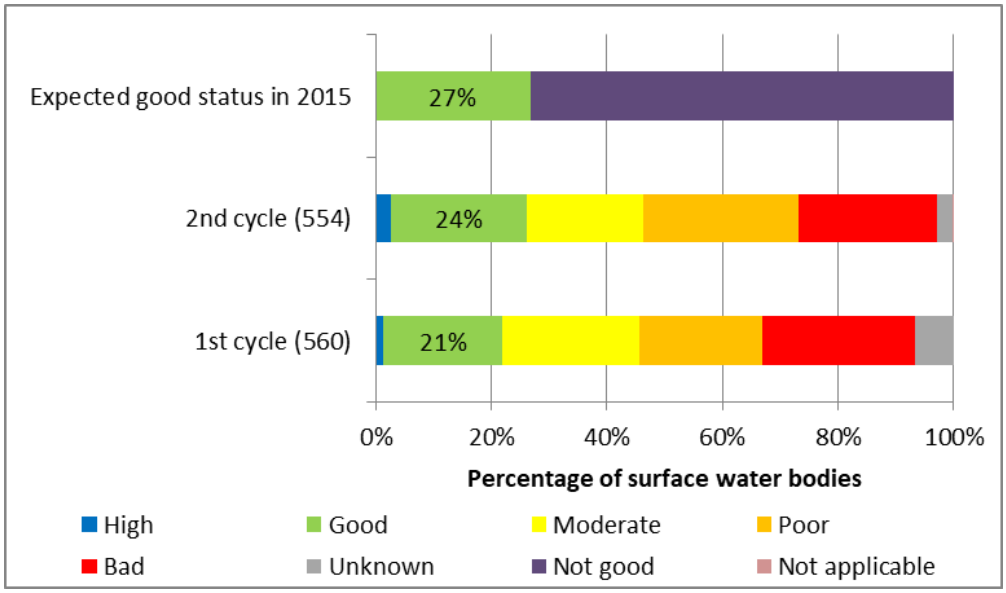
Note: Standard colours based on WFD Annex V, Article 1.4.2(i).



Source: WISE, Eurostat (country borders)

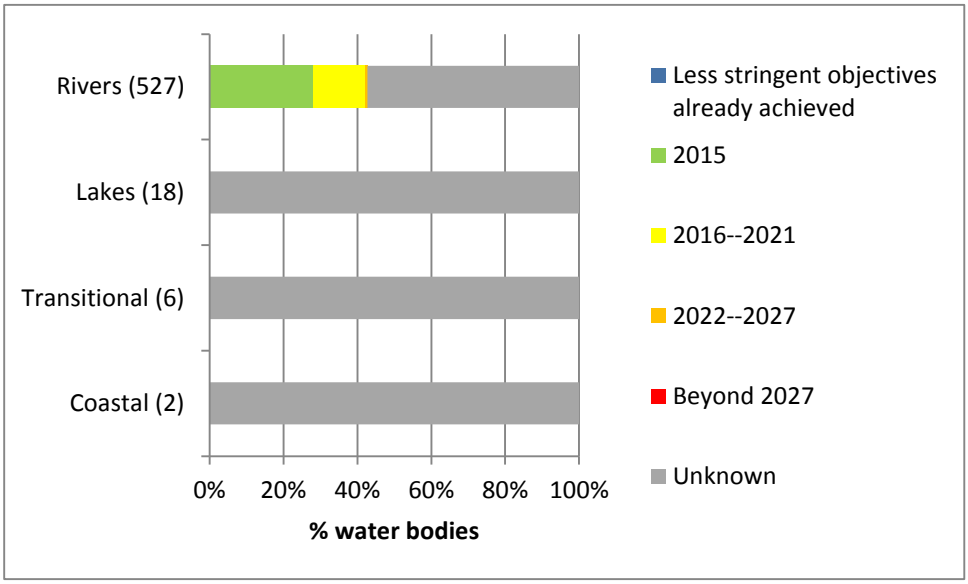
High
Good
Moderate
Poor
Bad
Unknown
RBDs
Countries outside the European Union

Figure 3.3 Ecological status or potential of surface water bodies in Belgium in the second RBMPs, in the first RBMPs and expected in 2015. The number in parenthesis is the number of surface water bodies for both cycles. Note the period of the assessment of status for the second RBMPs was 2008 to 2014. The year of the assessment of status for the first RBMPs is not known



Source: WISE electronic reporting

Figure 3.4 Expected date of achievement of good ecological status/potential of surface water bodies in Belgium. The number in the parenthesis is the number of water bodies in each category



Source: WISE electronic reporting

All water bodies have been classified, except 13 heavily modified water bodies and one natural river water body in the Meuse RBD and one coastal water body in the Scheldt RBD. The

proportion of unknowns has decreased from 7 % in the first RBMPs to 3 % in the second RBMPs.

There has been an increase between the two cycles in the proportion of surface water bodies at good or better status/potential: the proportion of less than good status/potential surface water bodies remained the same.

The ecological status/potential is still less than good for more than 70 % of all classified river water bodies. All lakes (18 water bodies), transitional waters (six water bodies) and the only coastal water body which was classified are in less than good ecological status/potential. More than half of the river water bodies and 2/3 of the lakes are in poor or worse status in the second RBMPs. This shows that Belgium has a long way to go to achieve the good status/potential objectives, which may be why the timing of achievement of objectives is reported as unknown for 60 % of the water bodies (Figure 3.4).

Three RBMPs were examined in more detail for information on the changes described by the Member State in the ecological status/potential of surface water bodies between the first and second RBMPs.

For the Scheldt (Brussels) RBD, data on fish were lacking in the period 2009-2010, and data were therefore incomplete. It is reported in the RBMP that a general trend can be described: as the principle 'one out/all out' was applied, an insufficient or bad value for fish in 2013 has led to a decrease of status compared to the first cycle, when fish data were not used.

In the Scheldt (Flanders) RBD none of the 176 assessed waterbodies achieved a good ecological status or potential in the second RBMP as was the case in the first RBMP. There are improvements noticeable in the Scheldt RBD for individual biological quality elements, but not for the overall ecological status.

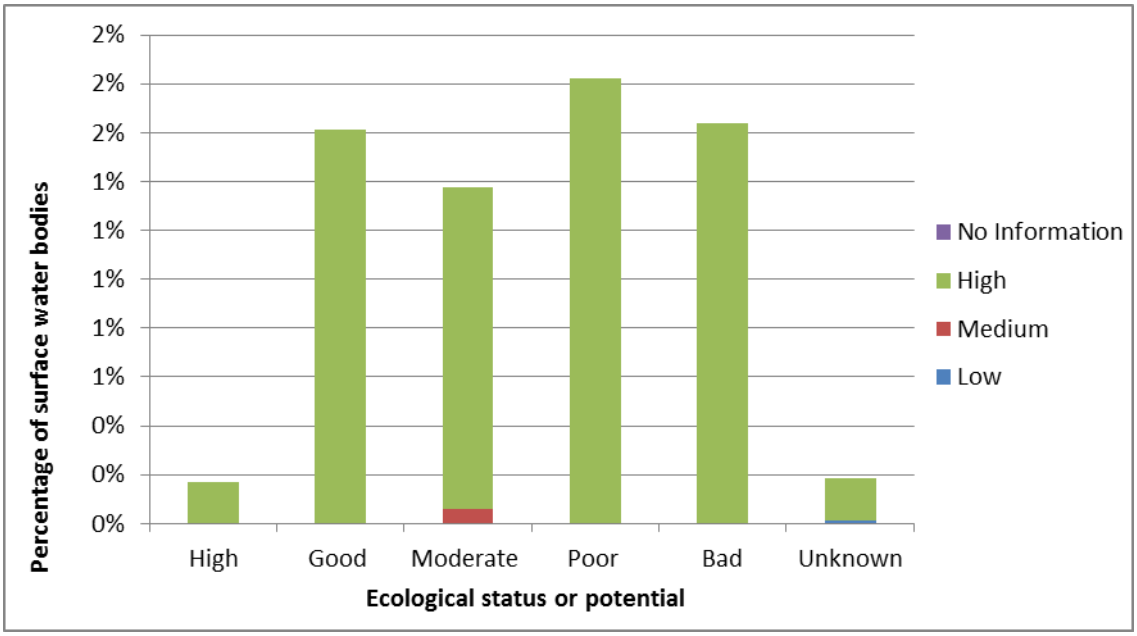
In the Meuse (Wallonia) RBD there was an increase in the number of water bodies with a good or high ecological status (130 in the second RBMP versus 115 in the first RBMP).

Confidence in ecological status assessment

Figure3.5 shows the confidence in the classification of ecological status/potential.

The confidence in classification of ecological status/potential is given as high for 99% of surface water bodies, which is a major improvement since the first RBMPs, where no information was given on confidence. It should also be noted that no water body was classified with low confidence.

Figure 3.5 Confidence in the classification of ecological status or potential of surface water bodies in Belgium based on the most recently assessed status/potential



Source: WISE electronic reporting

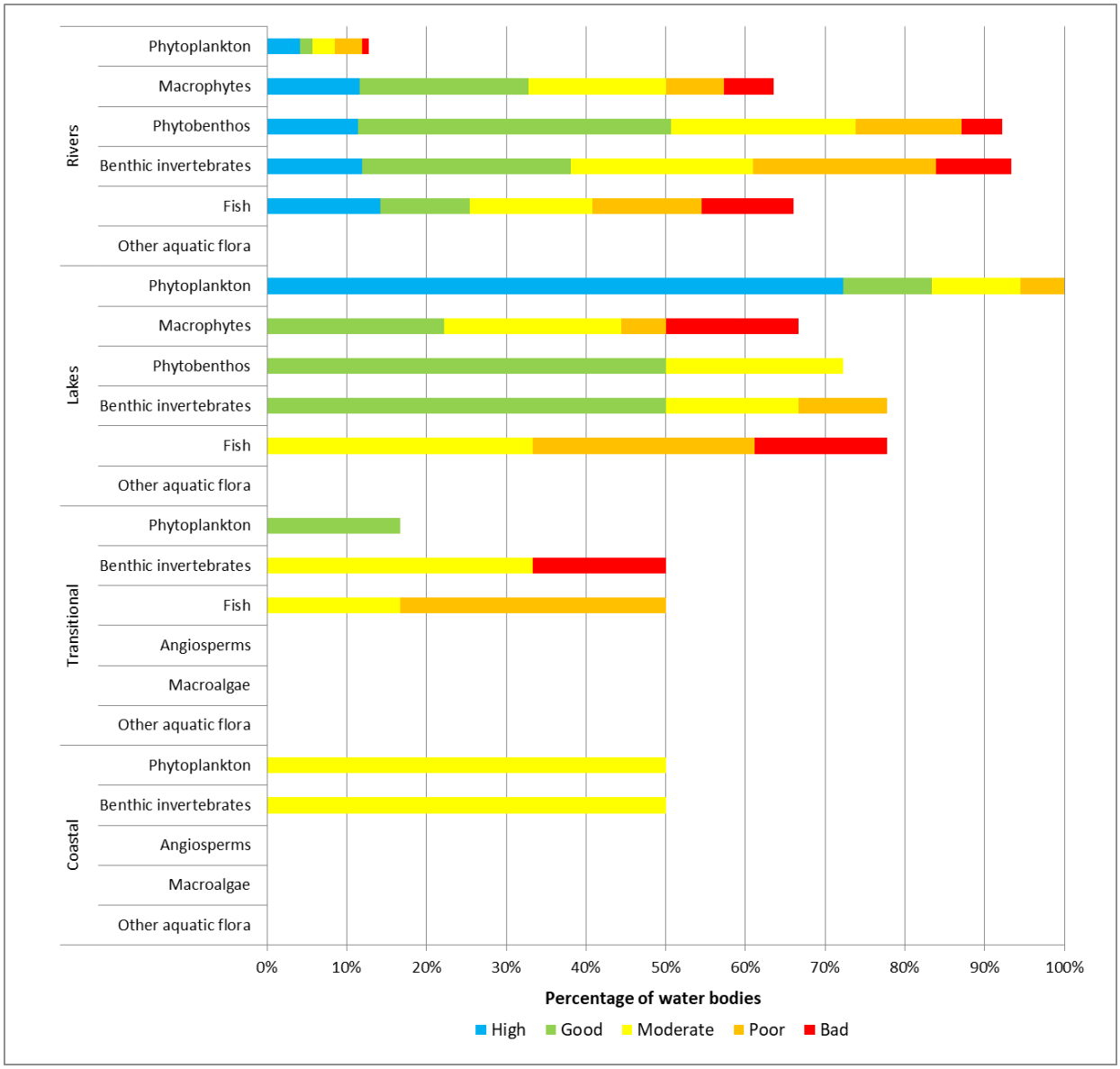
Classification of ecological status in terms of each classified quality element

All the relevant biological quality elements are used for classification in most of the water bodies in all water categories and RBDs (Figure 3.6). All the general physicochemical quality elements and hydromorphological quality elements are classified in almost all water bodies in the Scheldt and Maas RBDs.

The hydromorphological quality elements are reported not to be classified in rivers in the four RBDs of the Wallonia region (Escaut, Meuse, Rhine and Seine RBDs). Hydromorphological quality elements are not classified in rivers in the Scheldt (Brussels) RBD. The hydromorphological quality elements are also missing in lakes in the Maas RBD and the Scheldt RBD and in coastal waters in the North Sea RBD. River Basin Specific Pollutants were used in the classification of ecological status/potential in all water categories in all RBDs.

Changes in the status/potential at the quality element level between the two RBMPs were reported to be consistent for some quality elements in some water bodies in the Scheldt (Brussels) RBD and a few water bodies in the Scheldt RBD, but there is no clear pattern towards better or worse. In the Scheldt and Maas RBDs information on change was reported for many water bodies, but the vast majority show no change; for those that show a change, some are to the better and some to the worse with no clear pattern and there is no information about the reason for change. For the other water bodies and quality elements and RBDs the change is either unknown or there is no information.

Figure 3.6 Ecological status/potential of the biological quality elements used in the classification of lakes and rivers in Belgium. Note that water bodies with unknown status/potential, and those that are monitored but not classified or not applicable, are not presented[31]

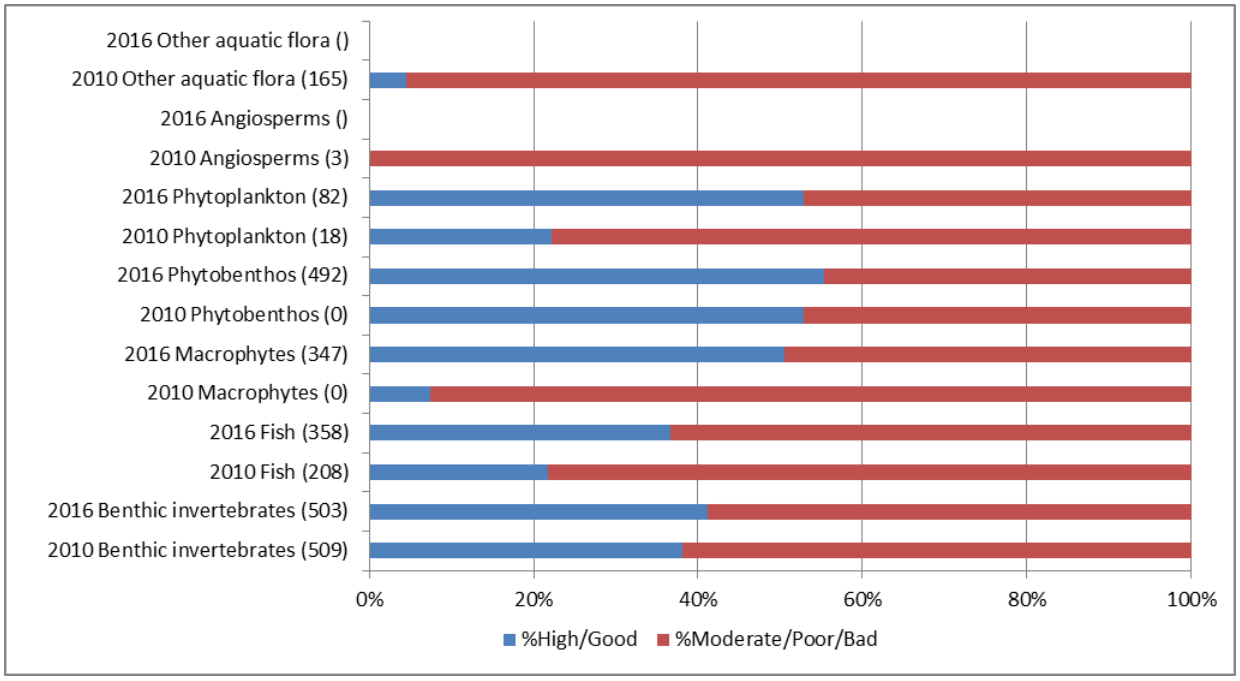


Source: WISE electronic reporting

Figure 3.7 compares the classification of biological quality elements in terms of ecological status/potential for the two cycles. It should be noted that this comparison should be treated with caution as there are differences between the numbers of surface water bodies classified for individual elements.

[31] Angiosperms and macroalgae are not relevant in coastal and transitional waters.

Figure 3.7 Comparison of ecological status/potential in Belgium according to classified biological quality elements in rivers and lakes between the two cycles.



Source: WISE electronic reporting
https://tableau.discomap.eea.europa.eu/t/Wateronline/views/WISE_SOW_QualityElement/SWB_QualityElement?:embed=y&:display_count=no&:showAppBanner=false&:showShareOptions=true&:showVizHome=no

Assessment methods and classification of biological quality elements

Assessment methods are complete for most biological quality elements in all water categories and RBDs, except phytoplankton in rivers in the Meuse, Rhine and Seine RBDs. All the biological quality elements with methods developed are used for classification in most of the water bodies in all water categories and RBDs.

The sensitivity of the biological quality element methods to different impacts has been reported. The methods seem to be sensitive to most relevant impacts, with the exception of altered habitats due to hydrological changes in lakes, to which no method was reported to be sensitive.

As was already the case in the first RBMPs, macroalgae were considered as not being relevant and therefore no method was needed.

Intercalibration of biological assessment methods and national classification systems

Most types of water bodies are linked to an intercalibration type. The exceptions are two river types in the Scheldt (Brussels) RBD[32] and six types of reservoirs and one artificial river type in

[32] Belgium subsequently indicated the Brussels RBD did not participate in the intercalibration exercise but linked the three waterbodies to the results in Flanders and Wallonia for the same types of river.

the Meuse RBD, as well as three brackish lake types and four small river types (polders) in the Scheldt RBD. It is not clear how the class boundaries have been set for the biological quality elements in these national types that are not linked to any intercalibration type[33].

The two RBMPs of the Flanders Region indicate that the class boundaries for lakes for chlorophyll A are fixed within the 2008 EU intercalibration exercise, except for the type Bzl which have been taken from the Netherlands type M30.

Assessment methods for hydromorphological quality elements

Assessment methods are developed for all relevant hydromorphological quality elements in rivers and for morphological conditions in transitional waters. The methods are stated to be related to the sensitive biological quality elements, but there is some uncertainty about this. The hydromorphological quality elements are not classified in rivers in the Escaut, Scheldt (Brussels), Meuse, Rhine and Seine RBDs, nor in lakes in the two RBDs which have lakes (Maas and Scheldt RBDs).

Assessment methods for general physicochemical quality elements

Methods for the assessment of the general physicochemical quality elements are developed for most of the relevant quality elements for the different water categories found in the different RBDs. The methods are stated to be related to the sensitive biological quality elements, but it should be noted that the nutrient standards are close to or higher than the nutrient saturation level for nutrient sensitive biological quality elements.

Selection of River Basin Specific Pollutants and use of environmental quality standards

For Flanders the selection of River Basin Specific Pollutants is based upon monitoring of all polluting chemical substances that are being emitted by point and diffuse sources in significant amounts. The Flemish list of substances (in the Environmental Quality Standards Decree) is subsequently examined for relevance of the chemicals based upon emission data. There was no specific information on the selection of substances in the Meuse (Wallonia) and Scheldt (Brussels) RBMPs other than that the lists used will be revised in this cycle.

Environmental Quality Standards have been established for approximately 104 River Basin Specific Pollutants in water (the total number is uncertain because River Basin Specific Pollutants have been reported as “rbspOther” in the electronic reporting, with the risk that some pollutants reported differently may be the same substance). In addition, a number of

[33] Belgium subsequently stated that the establishment of reference conditions was described in detail in the various scientific reports that document the development of the biological assessment methods.

standards were set for copper and zinc depending on water temperature. Environmental quality standards for nine substances in sediment were also set.

As previously described, 79 River Basin Specific Pollutants were reported to be monitored but this was based on only three of the eight RBDs in Belgium, as the Wallonia RBDs and the Brussels RBD did not report which specific chemical substances were monitored at the site level. Environmental Quality Standards were reported by all eight RBDs. The difference between the number of RBDs reporting on monitoring and on standards may explain why there are differences in the numbers of River Basin Specific Pollutants for which Environmental Quality Standards were established compared to the number monitored.

The Environmental Quality Standards have been derived in accordance with the Technical Guidance Document No 27[34] for nearly all standards and substances in water, with the exception of four substances in the Brussels RBD. The technical guidance was reported to be used for those same substances in other RBDs.

For 97 % of the reported standards the analytical methods used meet the minimum performance criteria laid down in Article 4.1 of the QA/QC Directive[35] for the strictest standard applied and for 2 % the analytical method complies with the requirements laid down in Article 4.2.

Concerning sampling in sediments, Technical Guidance Document No. 27 was not used to derive the standards but the analytical methods used meet the minimum performance criteria laid down in Article 4.1 of the QA/QC Directive.

Environmental quality standards for both annual average and maximum allowable concentration are given for water for the vast majority of River Basin Specific Pollutants, while environmental quality standards are given for sediment for copper, zinc and polychlorinated biphenyls in the coastal water body (the North Sea RBD).

Six of the eight RBDs in Belgium reported exceedances of Environmental Quality Standards in surface waters. 35 River Basin Specific Pollutants were reported for which status or potential is less than good: the largest proportion of surface water bodies at less than good status was for cobalt (19%), followed by uranium (8%) and arsenic (7%).

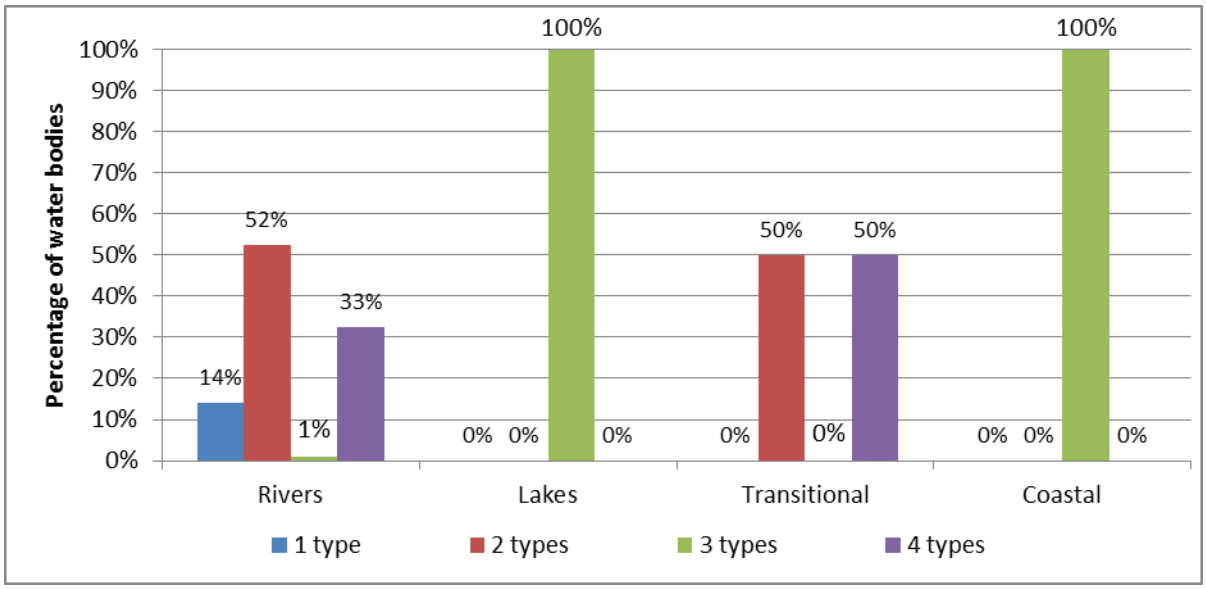
[34] https://circabc.europa.eu/sd/a/0cc3581b-5f65-4b6f-91c6-433a1e947838/TGD-environmental quality standard%20CIS-WFD%2027%20EC%202011.pdf
[35] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:201:0036:0038:EN:PDF

Use of monitoring results for classification

Figure3.8 illustrates the basis of the classification of ecological status/potential of rivers and lakes in Belgium for the second RBMPs. The classification of the individual quality elements is illustrated in Figure 3.9.

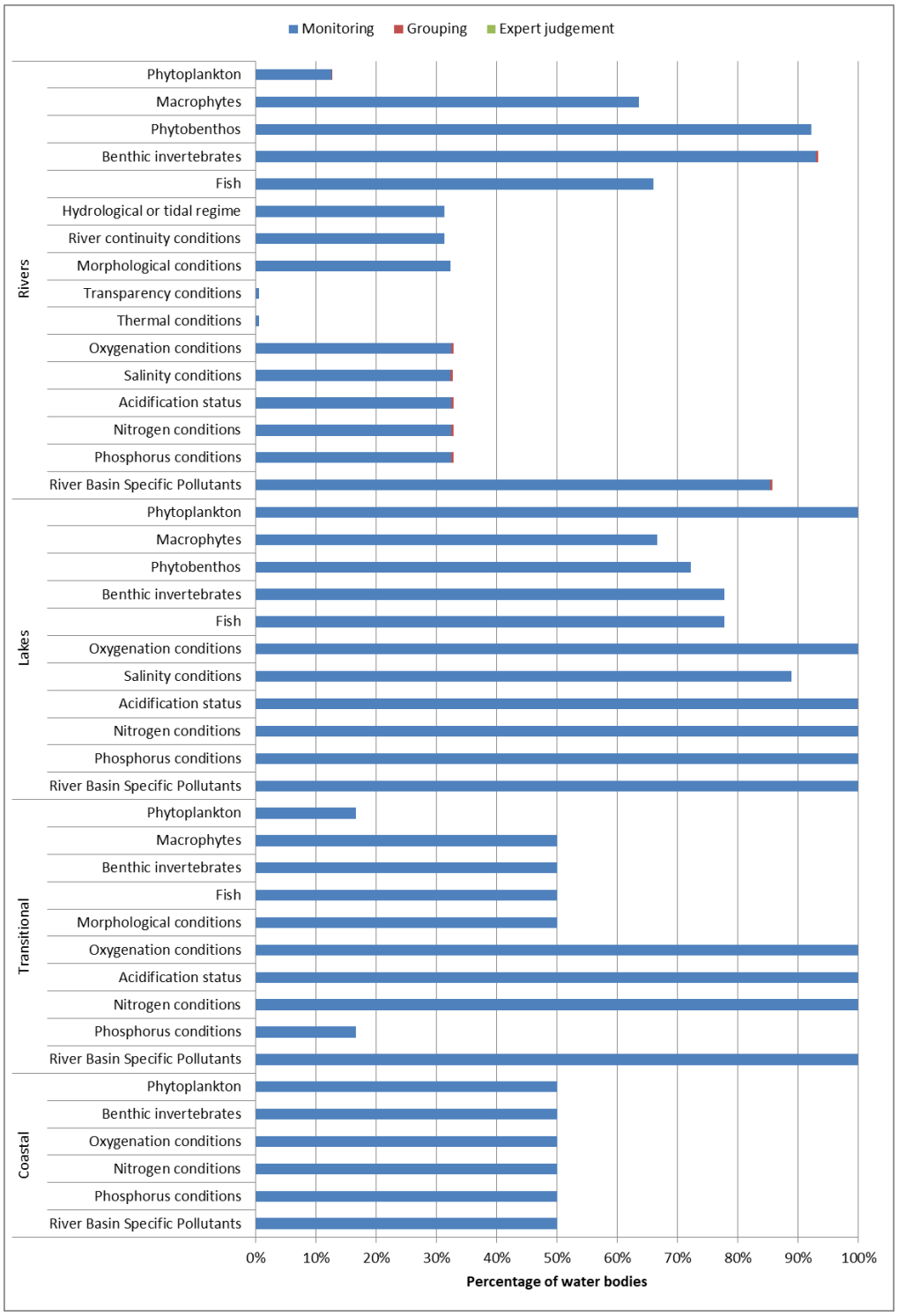
Figure 3.8 The classification of the ecological status or potential of surface water bodies in Belgium using 1, 2, 3 or 4 types of quality element

Note: The four types are: biological; general physico-chemical and River Basin Specific Pollutants, hydromorphological.



Source: WISE electronic reporting

Figure 3.9 ***Basis of the classification of ecological status/potential in Belgium. The percentages are in terms of all waterbodies in each category.***



Source: WISE electronic reporting

Mostly in Belgium, the results of monitoring are used to classify the ecological status/potential of coastal, lake, river, and transitional water bodies. Grouping was used for a few water bodies.

All lake water bodies monitored for the different biological quality elements are subsequently classified using the biological quality element. This is also the case for the physico-chemical quality elements. The hydromorphological quality elements were not monitored or used in the assessment/classification of the status of lakes.

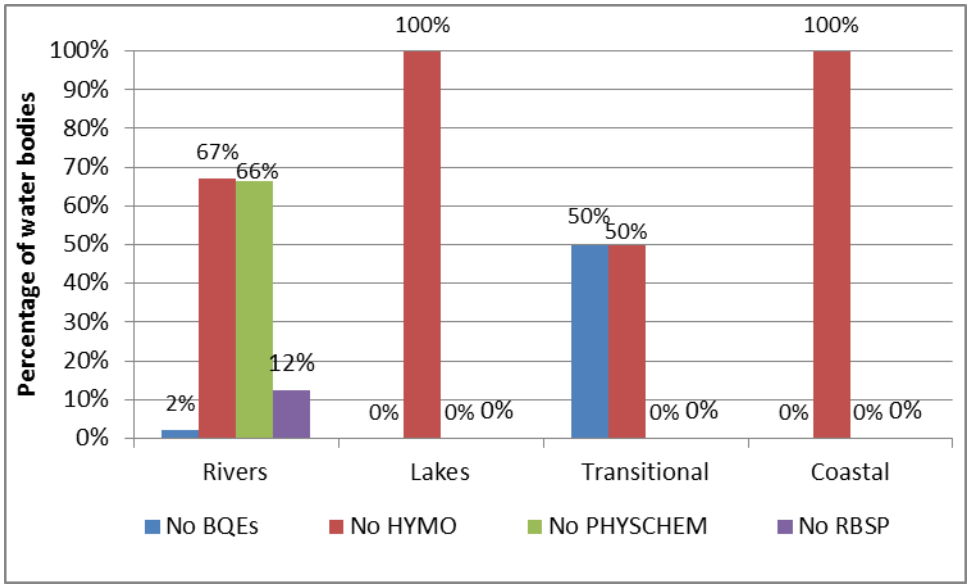
In terms of rivers, the quality elements predominantly used to classify water bodies are phytobenthos, benthic invertebrates, and River Basin Specific Pollutants. Fish and macrophytes are also used to a large extent but in general hydromorphological quality elements and physico-chemical quality elements are used to a much lesser extent than the biological quality elements (for example, 490 river water bodies classified by benthic invertebrates, 170 by morphological conditions and 171 by phosphorus conditions). However, both hydromorphological quality element and physico-chemical quality elements are directly monitored in more water bodies than have been subsequently used for classification: for example, 516 river water bodies monitored for phosphorus conditions and 173 classified, 519 river water bodies monitored for morphological conditions, and 170 subsequently classified. Generally when monitored the results for biological quality elements are used to classify river water bodies.

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

The proportion of water bodies for which the classification included no biological, hydromorphological or general physicochemical elements is shown in Figure3.10.

The one-out-all-out principle is reported to have been used in all RBDs.

Figure 3.10 ***The percentage of river and lake water bodies in Belgium where no biological quality element or no hydromorphological or no general physicochemical or no River Basin Specific Pollutant has been used in the classification of ecological status or potential***



Source: WISE electronic reporting

3.2. Main changes in implementation and compliance since first cycle

Overall there appears to have been a reduction in surveillance monitoring and an increase in operational monitoring.

There were decreases in surveillance sites between the two cycles for lakes, rivers, and transitional waters. Proportionally the largest decrease was in lakes where 11 sites had been used for the first RBMPs and only one for the second RBMPs with one RBD (Maas RBD) no longer monitoring any of its three lakes for surveillance purposes. In terms of rivers there was an increase in numbers between the cycles in one RBD, a reduction in two, and no change in four: overall there was a 9 % decrease in Belgium. The number of surveillance sites halved in transitional waters between the two cycles.

Overall in Belgium there was a 7 % increase in the number of sites used for operational monitoring between the two cycles. Proportionally, the largest increase (75 %) was in lakes. There was also an increase for rivers, but a 23 % decrease in transitional waters. In terms of rivers, there were increases in two RBDs (those in the Flanders region), a decrease in the Meuse RBD and no changes in the other four RBDs with rivers.

Hydromorphological quality elements were reported to be monitored in lakes in the first RBMPs, whereas in the second RBMPs they were not. All required biological quality elements and general physicochemical quality elements were reported to be monitored in both cycles.

All required biological quality elements and general physicochemical quality elements were also reported to be monitored in rivers in all 7 RBDs with rivers for the first and second cycles. However, only three of the seven RBDs – Scheldt and Maas (all three elements) and Scheldt (Brussels) (only hydrological regime) - indicated that they monitored hydromorphological quality elements in the first RBMPs. In the second RBMPs, six of the seven RBDs reported that these elements were now monitored, indicating some progress. In the Scheldt (Brussels) RBD only hydrological regime was still monitored, leaving gaps in terms of river continuity and morphological conditions.

In terms of transitional waters, the same biological quality elements and hydromorphological quality elements were reported for both cycles.

River Basin Specific Pollutants were reported in the first RBMPs to be monitored in rivers, transitional and coastal waters. In the second RBMPs this has been extended to lakes and territorial waters.

For the second RBMPs, only one lake out of 18 in Belgium was included in surveillance monitoring, while for the first RBMPs, five had been included in surveillance monitoring.

There was also a small increase of river water bodies included in surveillance monitoring, from 90 for the first RBMPs to 92 in the second RBMPs.

The only change in the numbers of water bodies included in operational monitoring between the two cycles was for rivers. Overall there was a small increase, from 69% of river water bodies in the first RBMPs to 71 % in the second RBMPs. In three RBDs (all in the Wallonia region) there were small increases in numbers included in operational monitoring and small reductions in the two RBDs in the Flanders region.

In the first RBMPs there was no information on confidence in ecological status classification, but now the confidence is given as high in almost all classified water bodies (medium for seven water bodies).

The proportion of unknowns has changed from 7 % of all water bodies in the first RBMPs to 3 % in the second RBMPs.

All biological quality elements methods are developed for all types in all water categories and RBDs, except macroalgae and angiosperms in coastal waters which are considered to be not applicable in Belgium. For transitional waters, macrophytes are used instead of the macroalgae and angiosperms.

General physicochemical methods are developed for most of the relevant quality elements for the different water categories found in the different RBDs, except transparency conditions,

which is missing in lakes, transitional and coastal waters. The methods are stated to be related to the sensitive biological quality elements.

Hydromorphological methods are developed for all relevant quality elements in rivers and for morphological conditions in transitional waters. The methods are stated to be related to the sensitive biological quality elements.

River Basin Specific Pollutants are classified in all water bodies in all the relevant water categories in all the RBDs and exceedances are given for a large number of substances in most of the RBDs. The environmental quality standards are set based on the technical guidance and analytical methods given in Article 4(1) of the Technical specifications for chemical analysis and monitoring of water status[36].

A consistent quality element-change was reported for some quality elements in some water bodies in the Scheldt (Brussels) RBD and a few water bodies in the Scheldt RBD, but there is no clear pattern towards better or worse. In the Escaut, Scheldt and Maas RBDs information on change was reported for many water bodies, but the vast majority show no change. For those that show a change some are to the better and some to the worse with no clear pattern and there is no information about the reason for change. For the other water bodies and quality elements and RBDs the change is either unknown or there is no information.

3.3. 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 in the 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: Almost all water bodies have been classified in Belgium in the second RBMPs. The proportion of water bodies with unknown status/potential has decreased from 7 % in the first RBMPs to 3 % in the second. The confidence in the classification of ecological status/potential is given as high for almost all water bodies, which is a major improvement since the first RBMP, where no information was given on confidence.

  In terms of this aspect, the recommendation has been fulfilled.

[36] 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

- Recommendation: *Improve the methods for the status assessment of water bodies to reduce the degree of uncertainty in status classification and thus support the gap analysis required to identify measures.*

  Assessment: All relevant biological quality elements were reported to be used for the second RBMPs though not all the required biological quality elements were monitored in all water bodies included in surveillance monitoring.

  The confidence in classification is now reported as high for almost all water bodies and as medium for a few, while in the first RBMPs there was no information on confidence. The proportion of unknowns has decreased from 7 % to 3 % of all water bodies from the first to the second RBMPs. Now only 15 water bodies out of a total of 553 have unknown ecological status. In total 13 of these are heavily modified rivers in the Meuse RBD. There is a minor improvement in ecological status of river water bodies from 123 (24 %) river water bodies in good or better status in the first RBMPs to 145 (28 %) in the second RBMPs.

  Assessment methods are complete for all biological quality elements in all water categories and RBDs. Most national types are linked to an intercalibration type.

  All the biological quality elements with methods developed are used for classification in most of the water bodies in all water categories and RBDs. General physicochemical methods are developed for most of the relevant quality elements for the different water categories found in the different RBDs. The methods are claimed to be related to the sensitive biological quality elements. Hydromorphological methods are developed for all relevant hydromorphological quality elements in rivers and for morphological conditions in transitional waters. The methods are claimed to be related to the sensitive biological quality elements.

  There has been progress on this recommendation and it has been partially fulfilled.

- Recommendation: *The identification of River Basin Specific Pollutants needs to be more transparent, with clear information on how pollutants were selected, how and where they were monitored, where there are exceedances and how such exceedances have been 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.*

  Assessment: Information on how River Basin Specific Pollutants were selected is included in the RBMPs for the RBDs in Flanders, while there was no specific information on the selection of substances in the Meuse (Wallonia) and Scheldt

(Brussels) RBMPs. Exceedances are given for a large number of substances in most of the RBDs. The one-out, all-out principle is reported to have been applied in all RBDs. The Environmental Quality Standards for almost all River Basin Specific Pollutants in water have been derived in accordance with the Technical Guidance Document No 27. The analytical methods used for the vast majority of substances meet the minimum performance criteria laid down in Article 4.1 of the QA/QC Directive for the strictest standard applied. In most cases where the methods do not meet the requirements of Article 4.1, Article 4.2 is complied with.

Environmental quality standards for both annual average and maximum allowable concentration are given for water for the vast majority of River Basin Specific Pollutants, while environmental quality standards are given for sediment for copper, zinc and polychlorinated biphenyls in the coastal water body (the North Sea RBD).

This recommendation is partly fulfilled.

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

4.1. Assessment of implementation and compliance with WFD requirements in second cycle

4.1.1. Monitoring of chemical status in surface waters

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

Member States have to 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.

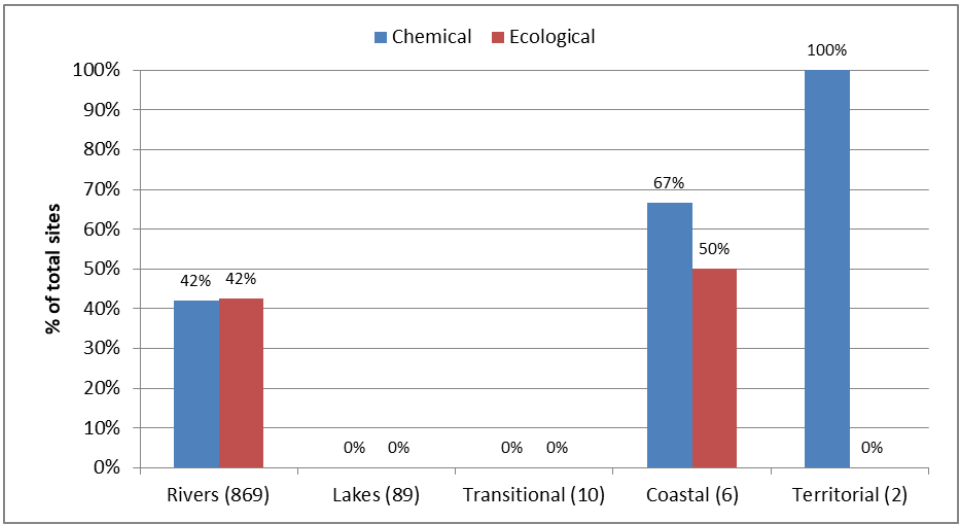
Surveillance monitoring programmes should allow Member States to supplement and validate the impact assessment procedure, to efficiently and effectively review the design of their monitoring programmes, and to assess the long-term changes in natural conditions and those resulting from widespread anthropogenic 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 3.1.1of this report summarises the characteristics of the surveillance and operational monitoring programmes in Belgium for the second RBMP.

Figure 4.1 summarises the proportion of sites used for the monitoring of chemical status in surface waters for the second RBMP. In this figure, no distinction is made between sites used for surveillance and/or operational purposes. More detailed information can be found on the website of the European Environment Agency[37].

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

Figure 4.1 Proportion of sites used for monitoring of chemical status and, for comparison, ecological status, in Belgium.[38] The number in parenthesis next to the category is the total number of monitoring sites irrespective of their purpose



Source: WISE electronic reporting

The extent of monitoring for chemical status is incompletely described in Figure 4.2, which partly results from inconsistencies between different parts of the reporting. Belgium clarified that all transitional water monitoring sites and 26 % of lake monitoring sites were used for the assessment of both chemical and ecological status. Article 2(1) of the WFD indicates that chemical status applies to territorial waters. For the second cycle, Member States are able to report any relevant information for the part of territorial waters which extend beyond coastal waters. Belgium monitors both of the monitoring sites in territorial waters for chemical status.

Figure 4.2 summarises the proportion of water bodies monitored for chemical status in lakes and rivers for the second RBMP. 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 comparative purpose, those for ecological status.

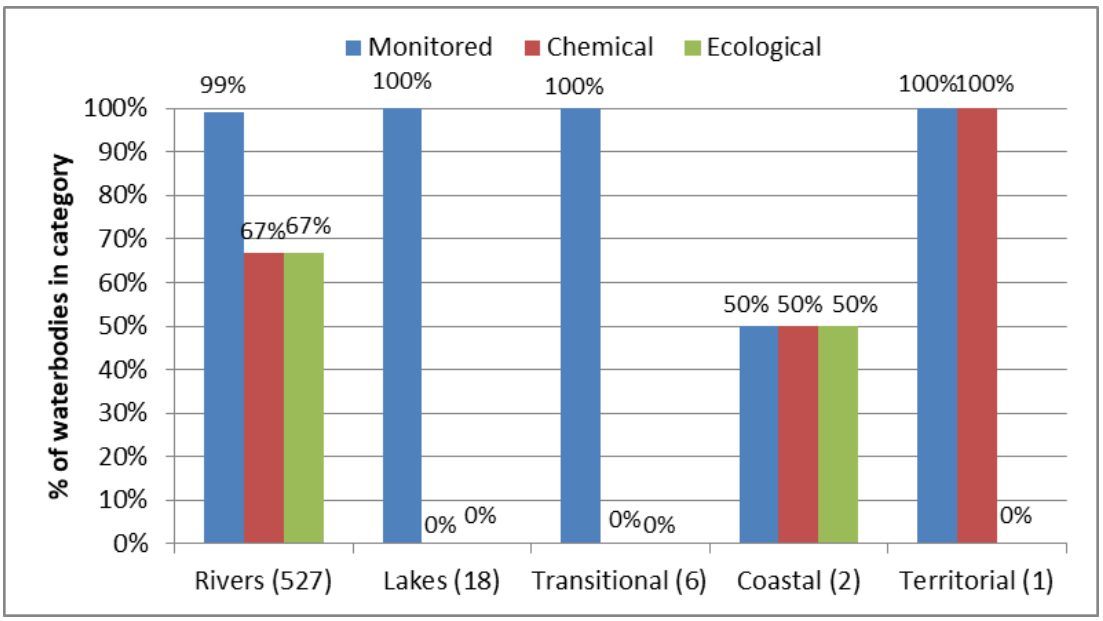
The extent of surface water bodies monitored for chemical status and ecological status is underestimated in Figure 4.2. Belgium clarified that all lake and transitional water bodies are monitored for chemical status in the Maas and Scheldt RBDs. For the remaining of the water categories, two-thirds of the river water bodies, half of the coastal waters bodies and all of the territorial water bodies are monitored for chemical status. In addition, it would seem that all

[38] Belgium subsequently clarified that in the Maas and Scheldt RBDs, seven operational monitoring sites and three surveillance monitoring sites in transitional water bodies are used for chemical status and that 22 operational and one surveillance monitoring sites in the 18 lake water bodies are used for chemical status. The same sites are used for the monitoring and assessment of ecological status.

transitional and lake water bodies, and half of the coastal water bodies were monitored for ecological status.

For the second RBMP, for surface water bodies across all RBDs in Belgium, there appears to be a higher proportion of sites monitored for Priority Substances under operational monitoring (48 % of total sites monitored) than under surveillance monitoring (10 % of total sites monitored) but for waterbodies, the percentages are 70 and 16 % for operational and surveillance monitoring, respectively. In comparing the number of sites and waterbodies monitored for operational and surveillance purposes between the first and second RBMPs, there appears to be a net increase (from the first to second RBMP) in monitoring sites and surface water bodies monitored for operational purposes (an increase of 48 sites and two waterbodies) both due to a relatively large increase in river monitoring. For surveillance monitoring, the number of sites has decreased by 22 and the number of water bodies has decreased by one since the first RBMP While the increase in the number of sites and water bodies monitored from the first cycle represents some progress, the proportion of surface water bodies monitored for surveillance purposes (16 %) is low.

Figure 4.2 ***Proportion of total water bodies in each category which are monitored, monitored for chemical status and monitored for ecological status, in Belgium[39]. The number in parenthesis next to the category is the total number of water bodies in that category***



Source: WISE electronic reporting

[39] Belgium subsequently clarified that all transitional and lake water bodies have been monitored for chemical and ecological status.

A total of 98 % of water bodies failing to achieve good chemical status were reported to be monitored in Belgium as a whole. All surface water bodies failing to achieve good chemical status were monitored in four RBDs (the Scheldt (Brussels), Maas, North Sea and Rhine RBDs). In the remaining RBDs, this was the case for between 96 and 99 % of water bodies. Rivers were the predominant type of water body monitored.

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

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

All river water bodies in four RBDs in Belgium (the Scheldt (Brussels), Maas, Rhine and Seine RBDs) were monitored for more than 10 Priority Substances in water. This was also the case for 96 % of river water bodies in L'Escaut RBD, 99 % in the Meuse RBD and 82 % in the Schelde RBD. The remainder of river water bodies in L'Escaut and Meuse RBDs were not monitored for any Priority Substances. However, for the Schelde RBD, the majority of the remaining river water bodies were monitored for four Priority Substances. All lake water bodies in the Maas RBD and 53 % in the Schelde RBD were monitored for four Priority Substances, with the remaining monitored for more than 10 Priority Substances. All water bodies (coastal and territorial) in the North Sea RBD were monitored for six to 10 Priority Substances[40]. None of the coastal water bodies in the Schelde RBD were monitored for any

[40] Belgium subsequently clarified the approach to identifying substances for monitoring. It was for example clarified that priority first was given to the monitoring of the 14 substances required for trend analysis because these substances tend to accumulate in sediment and/or biota. For Cadmium and Lead, measurements ceased in the 1990s since they are a factor of 10 to 80 lower than the environmental quality standard. Phtalates were considered not to pose a risk as concentrations are already lower than the standard in the Scheldt estuary. Quantification limits are not adequate yet for pentachlorobenzene (see explanation p.41, 46-47 in RBMP for the North Sea RBD). Screening for a whole range of other priority substances is currently ongoing; the risk of exceedance of standards in seawater is however estimated to be low.

Priority Substances. In contrast 83 % of transitional water bodies were monitored for more than 10 Priority Substances, with the remainder monitored for four Priority Substances.

Mercury, hexachlorobenzene and hexachlorobutadiene are monitored in biota in coastal, river and transitional water bodies in most RBDs for status assessment. All three substances are monitored in all RBDs except that hexachlorobenzene and hexabutadiene is not monitored in biota in the Maas, Schelde and North Sea RBDs. The majority of the monitoring is undertaken in river biota except in the North Sea RBD (where only coastal waters are present) and the Schelde RBD (also undertaken in transitional waters). Monitoring is undertaken in between one (Maas (7%) and Seine (50%) RBD) and 43 (17 %) (Meuse RBD) river water bodies and in the one coastal (North Sea RBD) and one (17 %) transitional (Schelde RBD) water body.

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 41 Priority Substances in water for status assessment at the site level in the Scheldt Brussels RBD, 38 in four Wallonian RBDs (L'Escaut, Meuse, Rhine and Seine RBDs), 36 substances in two RBDs (Maas and Schelde RBDs) and seven substances in the North Sea RBD.

In the Scheldt Brussels RBD, the reported intra-annual frequency in water was reported as 12 and in each year in the cycle for each substance; this meets the minimum guideline frequencies in the Directive for operational and surveillance monitoring. In the Wallonia RBDs, frequencies ranged from 6 to 12 times per year and from every year to once per cycle. The required minimum frequencies for operational monitoring were met for each substance at some sites. In the Maas and Schelde RBDs, reported frequencies ranged from 4 to 12 and from at least once per cycle to three times per cycle. The recommended minimum frequencies for surveillance monitoring were met at some sites but at none for operational monitoring. Belgium clarified that an adapted monitoring strategy was used for operational monitoring, but no detail was provided. In the North Sea RBD, reported frequencies for six of the seven

substances at all sites met the requirements for operational and surveillance monitoring but for tributyltin in water monitoring was undertaken only five times per year[41].

With regards to the monitoring of mercury, hexachlorobenzene and hexachlorobutadiene in biota for status assessment, the frequency reported in all RBDs met the requirements of once every year in at least some sites.

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[42] 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

Arrangements are in place for the long-term trend analysis in sediment and/or biota. No information was provided in WISE for the Scheldt (Brussels) RBD.[43]

Belgium has monitored all 14 of the Priority Substances required for the monitoring of long-term trend in sediment and/or biota in sediment in river water bodies in four RBDs (L'Escaut , Meuse, Rhine and Seine RBDs) at nine sites, 13 substances in river water bodies in the Scheldt (Brussels) RBD at five site and one group of substances - Total Benzo(g,h,i)-perylene + Indeno(1,2,3-cd)-pyrene – and mercury in a coastal water body in the North Sea RBD. Mercury was monitored in the Maas or Schelde RBDs at three sites.

The RBMPs reveal a range of approaches in the regions of Belgium regarding the monitoring of sediments and biota for the assessment of long-term trends. In addition to the variations in the number and frequency of Priority Substances monitored in different water categories described above, the background documents indicate that in general the monitoring takes place at fixed locations as part of a highly stable monitoring networks with locations selected on the basis of representativeness for the RBD as well as the presence of the target biota (where relevant) (perch and eel).

[41] Belgium mentioned that these reduced frequencies were justified by the fact that the concentrations of tributyltin are very high and the substance is persistent.

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

[43] Belgium subsequently clarified that all biota monitoring data from the Scheldt (Brussels) RBD was used for both status and trend assessment.

Frequencies

The sampling frequency in sediment and biota is at least once every three years which meets the guideline in the Directive.

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 all RBDs in Belgium, except for the North Sea RBD where no information was reported, 41 Priority Substances have been included in inventories, though not all are discharged or monitored[44].

In the Scheldt (Brussels) and L'Escaut RBDs, all substances discharged (19 and 34, respectively) are monitored. In the Meuse, Rheine and Seine RBDs, 34, 28 and 20 substances are discharged respectively, with all priority substances monitored

In the Schelde RBD, 30 substances are discharged and 36 substances are monitored. However of those discharged brominated diphenylethers (congener numbers 28, 47, 99, 100, 153 and 154), chloroalkanes C10-13, 4-nonylphenol, octylphenol (4-(1,1',3,3'-tetramethylbutyl)-phenol) are not monitored.

Similarly in the Maas RBD, 23 substances are discharged and 36 substances are monitored. However of those discharged chloroalkanes C10-13, 4-nonylphenol, octylphenol (4-(1,1',3,3'-tetramethylbutyl)-phenol) are not monitored.

[44] Belgium mentioned that no inventory of emissions have been established in the North Sea RBD, because discharges are forbidden in coastal waters, and losses come through rivers. However, from a formal point of view, an inventory of emission should be established for all RBDs, for all substances, if anything to clarify that substances are not discharged. In addition, it is unclear whether other sources of emissions that may be relevant (eg atmospheric deposition and run-off from agricultural or urban areas), have been considered.

Performances of analytical methods used

In Belgium, for 33 Priority Substances the analytical methods used meet the minimum performance criteria laid down in Article 4(1) of Directive 2000/60/EC[45] for the strictest standard were applied in all RBDs; but for a further six Priority Substances this was not the case in all RBDs. For eight Priority Substances monitored in five RBDs, the analytical methods complied with the requirements laid down in Article 4(2) of Directive 2000/60/EC for the strictest standard applied.

The method of dealing with measurements of Priority Substances lower than the limit of quantification is as specified in Article 5 of the Technical specifications for chemical analysis and monitoring of water status for all eight RBDs.

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. For Belgium, the assessment of chemical status was undertaken between 2010 and 2014.

The chemical status of surface water bodies in Belgium for the first and second RBMPs is given in Table 4.1. The chemical status for the second RBMP is illustrated in

Map 4.1. This is based on the most recent assessment of status.

Table 4.1 Chemical status of surface water bodies in Belgium 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 (527)			527	100%		

[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

Lakes (18)	12	67%	6	33%		
Transitional (6)			6	100%		
Coastal (2)			1	50%	1	50%
Territorial (1)			1	100%		
Total (554)	12	2%	541	98%	1	0.2%
first RBMP						
Rivers (534)	193	36%	162	30.00%	179	34%
Lakes (18)			1	6.00%	18	100%
Transitional (6)	1	17%	5	83.00%		
Coastal (2)			1	50.00%	1	50%
Total (560)	194	35%	168	30%	198	35%

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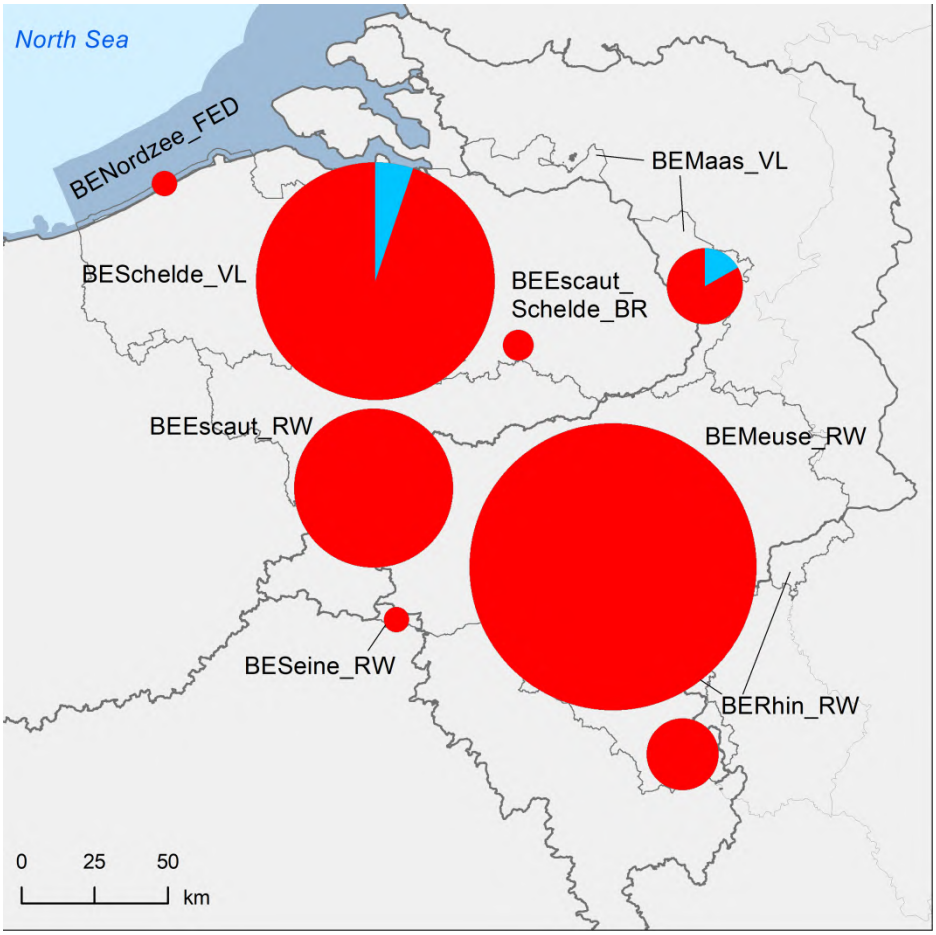
Map 4.1

Chemical status of surface water bodies in Belgium 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)

Good
Failing to achieve to good
Unknown
River Basin Districts
Countries outside the EU

Overall between the two cycles there was a large decrease in proportion of surface water bodies with good chemical status from 35 % to 2 % and a significant increase in the proportion of water bodies failing to achieve good chemical status from 30 % to 98 %. This pattern occurred across all RBDs, except those that had all their water bodies fail to achieve good chemical status after both the first and second cycles. However, the proportion with unknown status has reduced from 35 % to less than 1 %. In terms of natural/heavily modified/artificial water body categorisation, the largest decreases in the proportions of water bodies with the status of good occurred for those designated as heavily modified (from 14 to 0 %) and natural

(from 50 to 0%). However, significant increases in the proportions of water bodies failing to achieve good chemical status occurred for all categories of water body.

The assessment of chemical status for the second RBMP was expected to be based on the standards laid down in EQS Directive (version in force on 13 January 2009[46]). 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. More information on the chemical status in each RBD and water category can be found on the website of the European Environment Agency[47].

With regards to the basis of the classification of chemical status, monitoring was used for all classifications of water bodies in Belgium apart from river and transitional water bodies in the Schelde RBD where it was used for 93 and 83 % of water bodies, respectively. The remaining water bodies were classified by grouping. Territorial and coastal water bodies in the North Sea RBD were monitored and assessed together. The RBMPs indicated that, where monitoring data is used for classification, that the one-out-all-out principle is used.

Figure 4.3 shows the confidence in the classification of chemical status for the second RBMP. Overall 43 % of surface water bodies in Belgium were classified for chemical status with high confidence and 57 % with medium confidence. For rivers 41 % of surface water bodies were classified with high confidence and 59 % with medium confidence. For the other categories of surface water all water bodies were classified with high confidence. Confidence in the classification of chemical status for the first RBMPs was not reported.

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

[46] It is to be noted that following Directive 2013/39/EU, which amended the EQS Directive, introduced a less stringent annual average environmental quality standard for naphthalene in transitional waters. This less stringent environmental quality standard should be taken into account for the determination of surface water chemical status by the 2015 deadline laid down in Article 4 of the WFD.

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

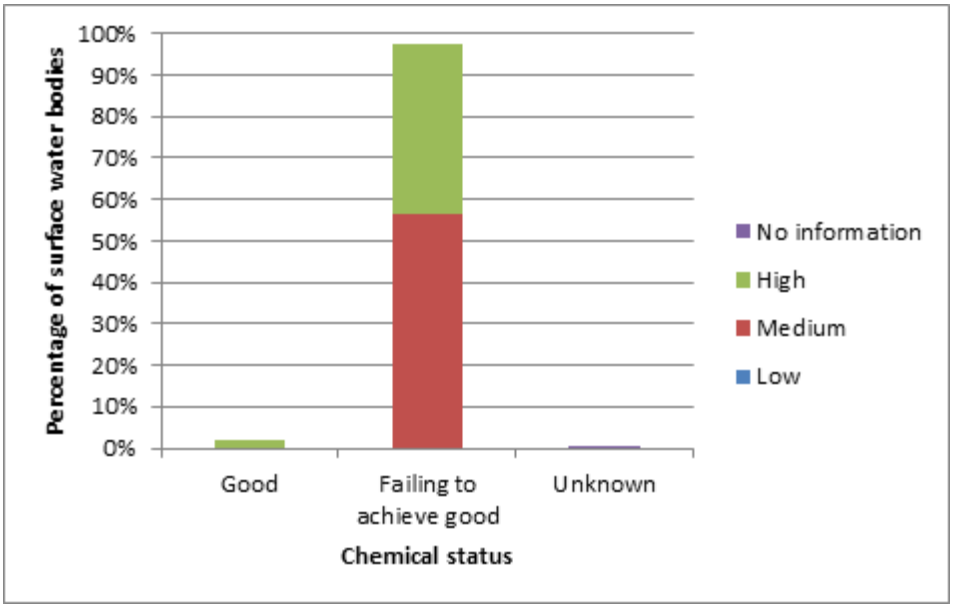


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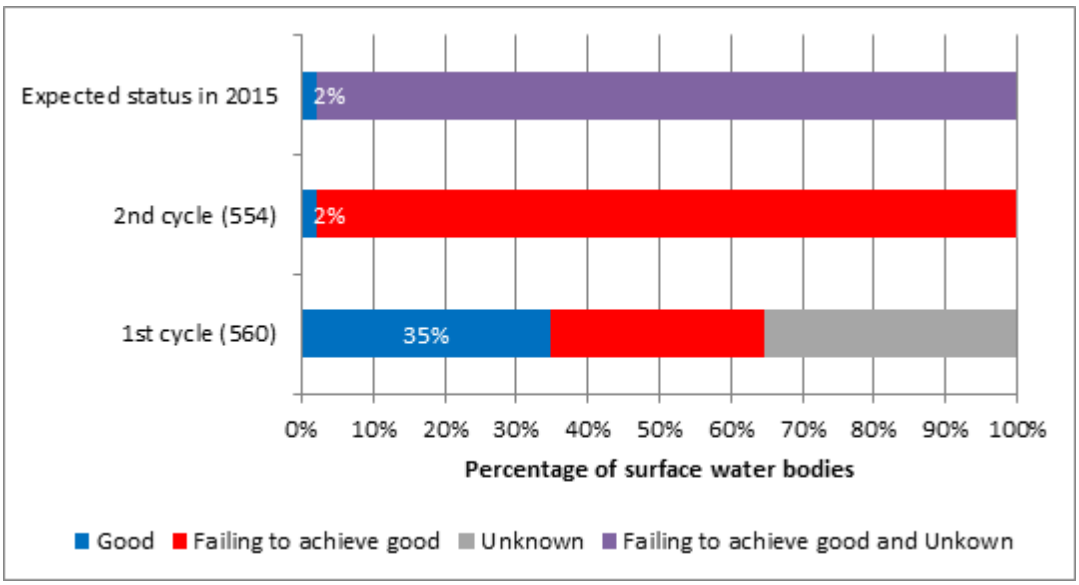
Figure 4.4 compares the chemical status of surface water bodies in Belgium for the first RBMP with that for the second cycle (based on the most recent assessment of status) and that expected by 2015. A significant reduction in the proportion of surface water bodies in good status was reported for the second cycle with the remaining water bodies all classified as failing to achieve good chemical status except for a single water body with unknown status in the second cycle. Belgium subsequently clarified that enhanced monitoring of substances identified as ubiquitous persistent, bioaccumulative and toxic and the extrapolation of these monitoring results to unmonitored water bodies were partly responsible for these changes. This change was consistent with expectations in 2015.

Figure 4.4 ***Chemical status of surface water bodies in Belgium for the second RBMP, for the first RBMP and expected in 2015. The number in the parenthesis is the number of surface water bodies for both cycles. Note the period of the assessment of status for the second RBMP was 2009 to 2014. The year of the assessment of status for the first RBMP is not known***



Source: WISE electronic reporting

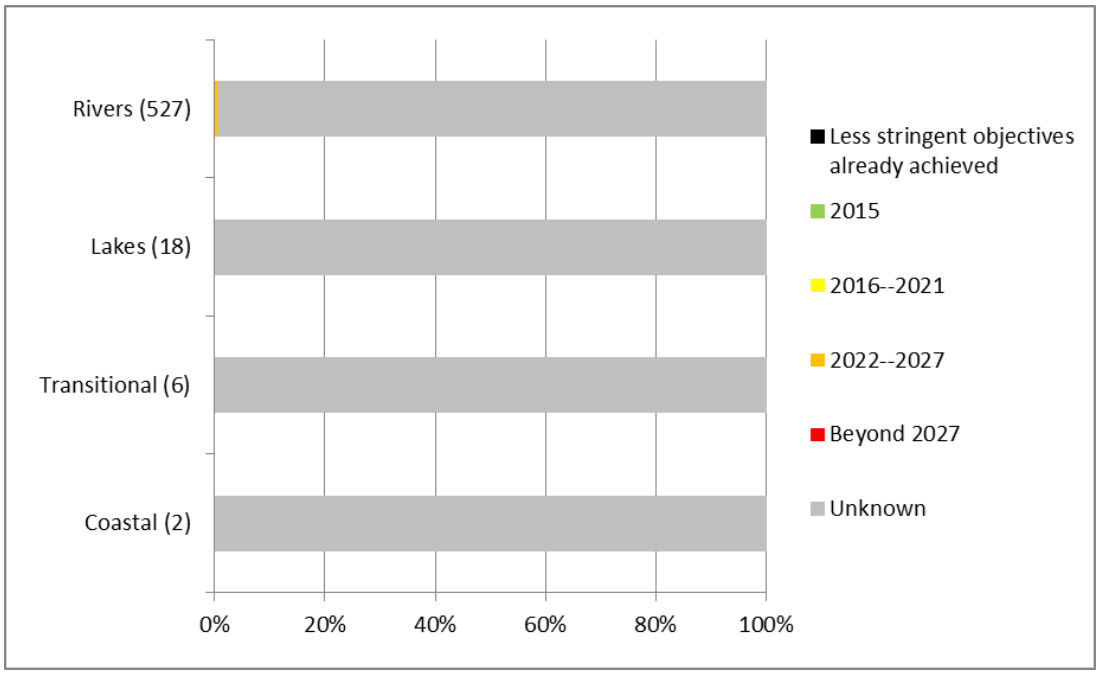
Directive 2013/39/EU amended the EQS Directive. In particular, it sets more stringent environmental quality standards for seven substances[48]. Member States were required to indicate if the new standard caused the status of the surface water body to appear to deteriorate. This was the case for 16 % surface water bodies in terms of nickel in Belgium as a whole, and in terms of 8 % of surface water bodies for fluoranthene. Water bodies were affected by the following substances in a smaller way: anthracene, polycyclic aromatic hydrocarbons, lead, and brominated diphenylethers.

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) and/or less stringent objectives under WFD article 4(5).

Member States were asked to report the expected date for the achievement of good chemical status. The information for Belgium is shown in Figure 4.5.

[48] 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 of surface water bodies in Belgium. The number in the parenthesis is the number of water bodies in each category



Source: WISE electronic reporting

It is unknown when good chemical status of surface water bodies is expected to be achieved in 99.5% of all water bodies in Belgium and in seven out of eight RBDs. In the Scheldt (Brussels) RBD, good chemical status is expected by 2027 in all water bodies (three river water bodies)[49]. No data on the expected achievement of good status was provided in the first RBMPs. The expected or actual improvement in the chemical status of surface water bodies at the end of the first planning cycle was reported to be as described in the RBMP for two RBDs (Maas and Schelde). However, it is greater than described in the RBMP in the North Sea RBD but less than described in the RBD for five RBDs (Schelde, Scheldt (Brussels), Meuse, Rhine and the Seine).

Priority substances causing the failure of good chemical status

Member States were expected to report exceedances for individual substances on the basis of the most relevant Environmental Quality Standard for each substance. For the seven Priority Substances with more stringent 2013 Environmental Quality Standards, exceedance of either or both of the 2008 and 2013 standards (as appropriate) should have been reported (see above).

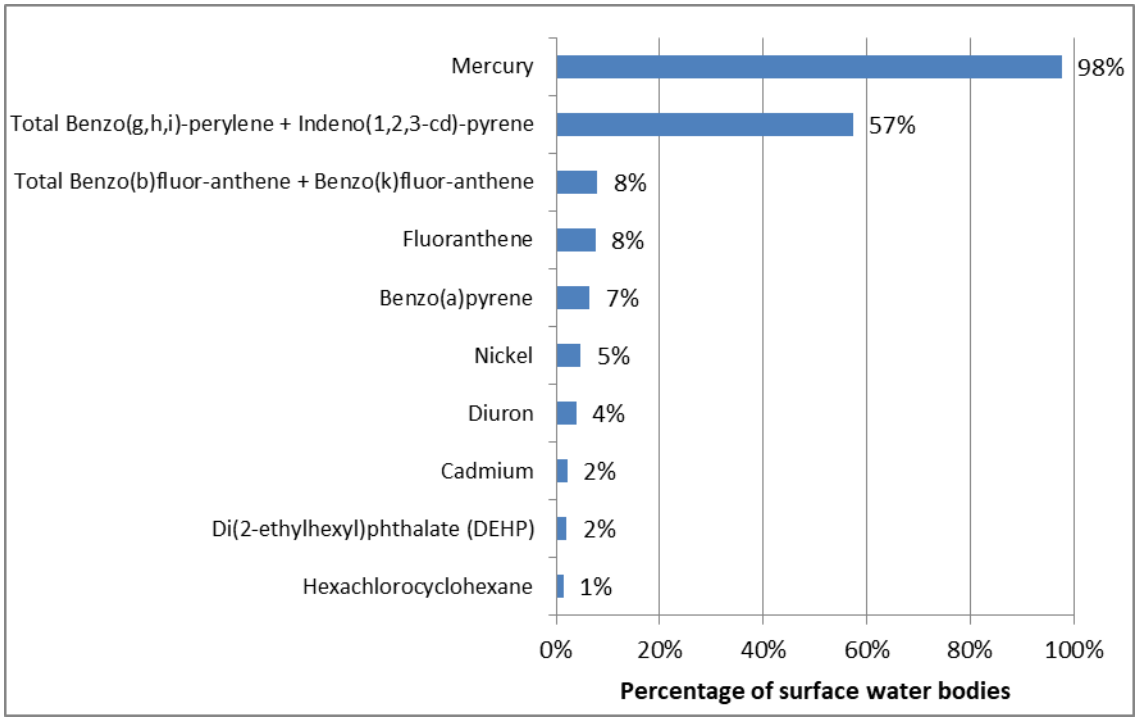
Priority Substances were reported to be causing failure to achieve good chemical status in surface water bodies in Belgium. The "top-10" in terms of the proportion of water bodies

[49] Belgium clarified that two of the three river water bodies are expected to reach good chemical status by 2027.

failing because of the substance is shown in Figure 4.6. In terms of surface water bodies in Belgium, the substances causing the greatest proportion to fail good chemical status in the second cycle were mercury (98 %) and total benzo(g,h,i)-perylene + indeno(1,2,3-cd)-pyrene (57 %).

Information on Priority Substances causing failure of good chemical status for the first cycle was reported. While total benzo(g,h,i)-perylene + indeno(1,2,3-cd)-pyrene was responsible for a similarly large proportion of environmental quality standard failures as in the second cycle, mercury is causing a greater proportion of failures in the second cycle.

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



Source: WISE electronic reporting

Overall for surface water bodies in the Belgium, the largest proportion of exceedances were for the annual average-environmental quality standard for total benzo(g,h,i)-perylene + indeno(1,2,3-cd)-pyrene (57 % or water bodies). Exceedances of maximum allowable concentration environmental quality standards were largest for mercury (97 % of water bodies). In terms of exceedance of both types of standard, the largest proportion was for isoproturon (9% of water bodies).

Ubiquitous persistent, bioaccumulative and toxic Priority Substances

According to Article 8(a) of the EQS Directive[50], eight priority substances and groups of priority substances are behaving like ubiquitous, persistent, bioaccumulative and toxic substances[51]. 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.

At least one ubiquitous persistent, bioaccumulative and toxic Priority Substance occurs in each of the surface water bodies (in all categories) failing to achieve good status in Belgium. Moreover, these substances alone are the cause of failure to achieve good status in 61 % of surface water bodies. Consequently, ubiquitous persistent, bioaccumulative and toxic Priority Substances appear to have a significant influence on surface water bodies that fail to achieve good chemical status. This is illustrated in the 2018 State of Water report of the European Environment Agency[52].

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

All 41 Priority Substances are both monitored and used in the classification of chemical status for the following four RBDs: L'Escaut, the Meuse, the Rhine, and the Seine. In the Maas and Schelde RBDs, 36 out of 41 Priority Substances are both monitored and used in the classification of chemical status but four Priority Substances are not monitored nor used for the assessment. One priority substance, hexachlorobutadiene, was not monitored even though it is used in the assessment of chemical status.

In the Scheldt (Brussels) RBD, 35 of the 41 Priority Substances are both monitored and used in the assessment. The following six Priority Substances are monitored but are not included in the assessment of chemical status: endosulfan, trifluralin, tributyltin-cation, chloroalkanes C10-13, brominated diphenylethers and total benzo(g,h,i)-perylene + Indeno(1,2,3-cd)-pyrene).

In the North Sea RBD, just 10 out of 41 Priority Substances are both monitored and used in the assessment of chemical status, including benzo(a)pyrene, hexachlorobutadiene,

[50] Amended by Directive 2013/39/EU

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

[52] 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

hexachlorobenzene, anthracene, fluoranthene, mercury, tributyltin-cation, brominated diphenylethers, total benzo(b)fluoranthene + benzo(k)fluoranthene and total benzo(g,h,i)-perylene + indeno(1,2,3-cd)-pyrene. The following three Priority Substances are not monitored even though they are included in the assessment of chemical status hexachlorocyclohexane, pentachlorobenzene and chloroalkanes C10-13.

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.

In L'Escaut, the Meuse, Rhine and Seine RBDs, all of the environmental quality standards were applied and used in the assessment of chemical status.

However, in the Scheldt (Brussels) RBD, 35 of the environmental quality standards were applied and used in the assessment of chemical status but the standards for endosulfan, trifluralin, tributyltin-cation, chloroalkanes C10-13, brominated diphenylethers and total benzo(g,h,i)-perylene + indeno(1,2,3-cd)-pyrene were not used in the assessment of chemical status.

In the Maas and Schelde RBDs, 37 of the environmental quality standards were applied and used in the assessment of chemical status but the standards for 4-nonylphenol, Octylphenol (4-(1,1',3,3'-tetramethylbutyl)-phenol), chloroalkanes C10-13 and brominated diphenylethers were not used in the assessment of chemical status.

In the North Sea RBD, only 13 of the environmental quality standards were applied and used in the assessment of chemical status.

Belgium reported that in some RBDs alternative and/or additional standards for particular Priority Substances had not been applied. It is therefore unclear what standards have been used in the assessment of chemical status for those Priority Substances where the EQS Directive laid down in Part A of Annex I of the EQS Directive have not been used.

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 Belgium.

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.

Natural background concentrations for metals and their compounds are taken into consideration where such concentrations prevent compliance with the relevant environmental quality standard in one RBD in Belgium (the Meuse RBD) but not in three RBDs. No information was provided for the following RBDs: Scheldt (Brussels), Maas, Schelde and North Sea RBDs.

Water quality parameters that affect the bioavailability of metals have been taken into account when assessing monitoring results against relevant environmental quality standards in three RBDs in Belgium but not in one RBD (the Seine RBD). No information was provided for the following RBDs: the Scheldt (Brussels), Maas, Schelde and North Sea RBDs.

4.2. Main changes in implementation and compliance since first cycle

In comparing the number of sites and waterbodies monitored for operational and surveillance purposes (though not specific to chemical status) between the first and second RBMPs, there appears to be a net increase in monitoring sites and surface water bodies monitored for operational purposes (an increase of 48 sites and two water bodies) both due to a relatively large increase in river monitoring. For surveillance monitoring the number of sites has decreased by 22 and the number of water bodies has decreased by one since the first RBMP.

Overall between the two RBMPs there was a large decrease in proportion of surface water bodies with good chemical status from 35 % to 2 % and a significant increase in the proportion that fail to achieve good chemical status from 30 % to 98 %. This pattern occurred across all

RBDs, except those that had all their water bodies fail to achieve good chemical status in both the first and second RBMPs (Scheldt Brussels and North Sea RBDs). Belgium subsequently clarified that enhanced monitoring of substances identified as ubiquitous persistent, bioaccumulative and toxic and the extrapolation of these monitoring results to unmonitored water bodies were partly responsible for these changes. The proportion with unknown status has reduced from 35 % to less than 1 %. There is a mix of approaches to the assessment of unmonitored water bodies with the use of grouping similar water bodies in two RBDs and the classification of these as unknown in one RBD.

Overall in Belgium, 17 Priority Substances were reported to have improved from failing to achieve good chemical status to good chemical status since the first RBMP e.g. diuron (14 %), isoproturon (10%), total benzo(b)fluor-anthene + benzo(k)fluor-anthene (6 %), benzo(a)pyrene (5 %) and atrazine (3 %). The improvements predominantly occurred in river water bodies in L'Escaut , Meuse/Maas and the Schelde RBDs.

4.3. 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 in the 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: With respect to chemical status, overall 43 % of surface water bodies in Belgium were classified for chemical status with high confidence and 57 % with medium confidence. For rivers, 41 % of surface water bodies were classified with high confidence and 59 % with medium confidence. For the other categories of surface water all water bodies were classified with high confidence. Confidence in the classification of chemical status for the first RBMPs was not reported. This recommendation has been partially fulfilled.

- *Recommendation: Mercury, hexachlorobenzene and hexachlorobutadiene are not the only Priority Substances for which monitoring in non-water matrix (biota in these three instances, with reference to the biota standards in the Environmental Quality Standard Directive) is appropriate. Biota environmental quality standard should also be considered for the other substances where analysis in water is problematic. The requirement for trend monitoring in sediment or biota specified for several substances*

in Article 3(3) of the Environmental Quality Standard Directive will also need to be reflected in the next RBMPs.

Assessment: Mercury, hexachlorobenzene and hexachlorobutadiene are monitored in biota in coastal, river and transitional water bodies in most RBDs for status assessment. All three substances are monitored in all RBDs except that hexachlorobenzene and hexabutadiene is not monitored in biota in the Maas, Schelde and North Sea RBDs. The majority of the monitoring is undertaken in river biota except in the North Sea RBD (where only coastal waters are present) and the Schelde RBD (also undertaken in transitional waters). Monitoring is undertaken in a limited number of water bodies. The frequency reported in all RBDs met the requirements of once every year in at least some sites.

Belgium has monitored all 14 of the Priority Substances required for the monitoring of long-term trend in sediment and/or biota in sediment in river water bodies in 4 RBDs (L'Escaut , Meuse, Rhine and Seine RBDs) at nine sites, 13 substances in river water bodies in the Scheldt (Brussels) RBD at five site and one group of substances - Total Benzo(g,h,i)-perylene + Indeno(1,2,3-cd)-pyrene – and mercury in a coastal water body in the North Sea RBD. Mercury was monitored in the Maas or Schelde RBDs at three sites. The sampling frequency in sediment and biota is at least once every three years which meets the guideline in the Directive.

The reported information indicates that environmental quality standards laid down in Part A of Annex I of the EQS Directive had been applied but not for all Priority Substances in all RBDs. It is unclear what standards have been used in the assessment of chemical status for those Priority Substances where the environmental quality standard laid down in Part A of Annex I of the EQS Directive has not been used.

This recommendation 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 cycle

5.1.1. Monitoring of quantitative status in groundwater

The total number of groundwater bodies in Belgium is 80 (Table 2.3). Two groundwater bodies are not subject to monitoring for quantitative status (Table 5.1, Table 5.2). This means that 2.5 % of groundwater bodies are not monitored. Investigation of the RBMP and background documents found no indications that grouping was applied and no indication why not all groundwater bodies are subject to monitoring. Belgium subsequently clarified that the two water bodies which are not monitored for quantitative status have no significant groundwater uses and are therefore considered to be in good quantitative status.

The number of groundwater bodies did not change since the first RBMP.

The number of monitored groundwater bodies increased from 75 in the first RBMP to 78 in the second RBMP. The number of monitoring sites for quantitative status is listed in Table 5.3 and shows a slight increase from 275 in the first RBMP to 287 in the second RBMP.

52 of 80 groundwater bodies, located in all RBDs, are identified as Drinking Water Protected Areas.

Table 5.1 Proportion of groundwater bodies in Belgium monitored for quantitative status

RBD	No of groundwater bodies with quantitative monitoring	Total No. groundwater bodies	Percentage of total groundwater bodies monitored for quantitative status
BEEscaut_RW	9	10	90%
BEEscaut_Schelde_BR	5	5	100%
BEMAAS_VL	10	10	100%
BEMeuse_RW	20	21	95%
BERhin_RW	2	2	100%
BESCHELDE_VL	32	32	100%

Source: WISE electronic reporting

Table 5.2 Number of water bodies in Belgium directly monitored and the purpose of monitoring

RBD	Total ground-water bodies directly monitored	Monitoring Purpose											
		AGR – Ground-water abstract-tion site for irrigation	CHE – Chemi-cal status	DRI – Ground-water abstraction site for human consump-tion	DWD - Drinking water - WFD Annex IV.1.i	HAB - Protection of habitats or species depending on water - WFD Annex IV.1.v	IND - Groundw ater abstracti on site for industria l supply	NID - Nutrient sensitive area under the Nitrates Directive - WFD Annex IV.1.iv	OPE – Operatio -nal monitor-ing	QUA – Quantita -tive status	SOE - EIONET State of Environ-ment monitor-ing	SUR – Surveil-lance monitor-ing	TRE – Chemi-cal trend assess-ment
BEEscaut_RW	10	0	10	0	6	0	0	10	10	9	10	10	10
BEEscaut_Schelde_BR	5	3	5	1	1	1	4	1	1	5	0	5	5
BEMAAS_VL	10	0	0	0	0	0	0	7	10	10	10	10	0
BEMeuse_RW	21	0	20	0	15	0	0	14	19	20	21	20	20
BERhin_RW	2	0	2	0	1	0	0	0	2	2	2	2	2
BESCHELDE_VL	32	0	32	0	0	0	0	17	32	32	32	32	0

Source: WISE electronic reporting

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

RBD	Total ground-water monito-ring sites	Monitoring Purpose											
		AGR – Ground-water abstract-tion site for irrigation	CHE – Chemi-cal status	DRI – Ground-water abstraction site for human consump-tion	DWD – Drink-ing water - WFD Annex IV.1.i	HAB - Protection of habitats or species depending on water - WFD Annex IV.1.v	IND – Ground-water abstract-tion site for industrial supply	NID - Nutrient sensitive area under the Nitrates Directive - WFD Annex IV.1.iv	OPE – Operatio -nal monitor-ing	QUA – Quanti-tative status	SOE - EIONET State of Environ-ment monitor-ing	SUR – Surveil-lance monitor-ing	TRE – Chemi-cal trend assess-ment
BEEscaut_RW	212		146		33			99	89	69	153	146	146
BEEscaut_Schelde_BR	98	5	32 (33)	15	21	9	16	8	10	66		23	33
BEMAAS_VL	10							7	10	10	10	10	
BEMeuse_RW	327		239		49			141	148	107	276	239	239
BERhin_RW	15		13		3				10	3	14	13	13
BESCHELDE_VL	32		32					17	32	32	32	32	

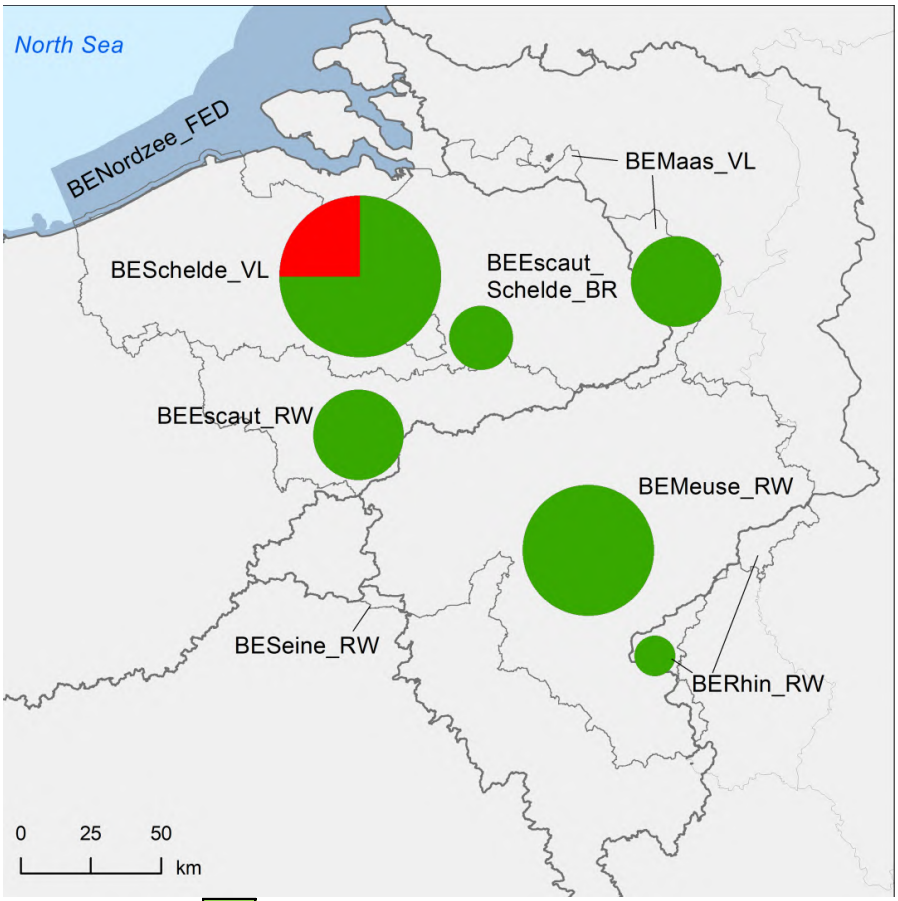
Source: WISE electronic reporting

The number in brackets was subsequently provided by Belgium and does not match the data reported to WISE

5.1.2. Assessment and classification of quantitative status for groundwater

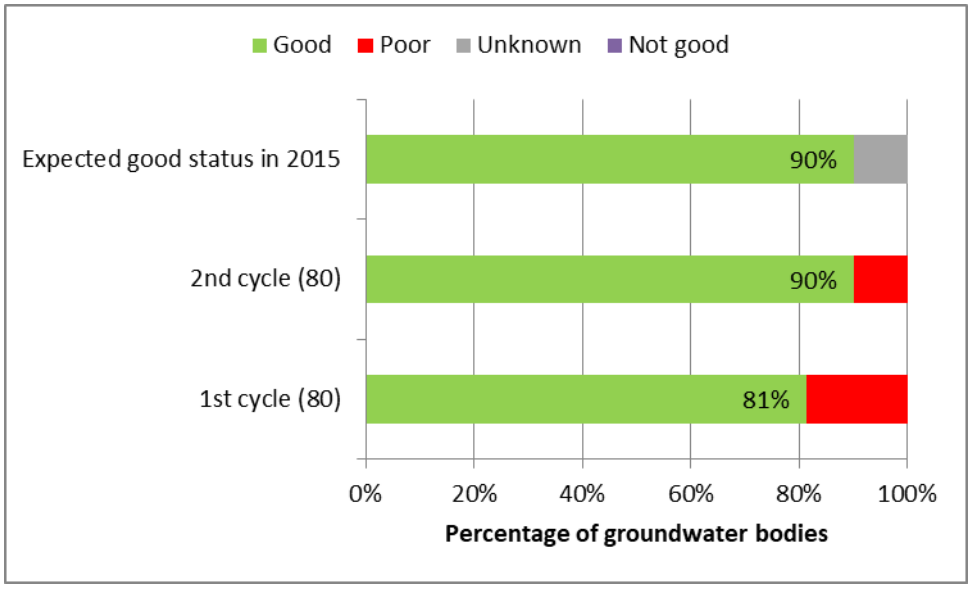
Map 5.1 and Figure 5.1 displays the most recently assessed quantitative status of groundwater bodies. It shows that 72 of 80 groundwater bodies (90 %) were in good quantitative status and eight (10 %) were failing good status. In terms of area, this means that about 29 % were failing good quantitative status. Figure 5.2 shows the confidence in status classifications. Approximately half of the groundwater bodies have high confidence in status classification and half have medium confidence. All groundwater bodies had and still have a known status, in the first and second RBMP.

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



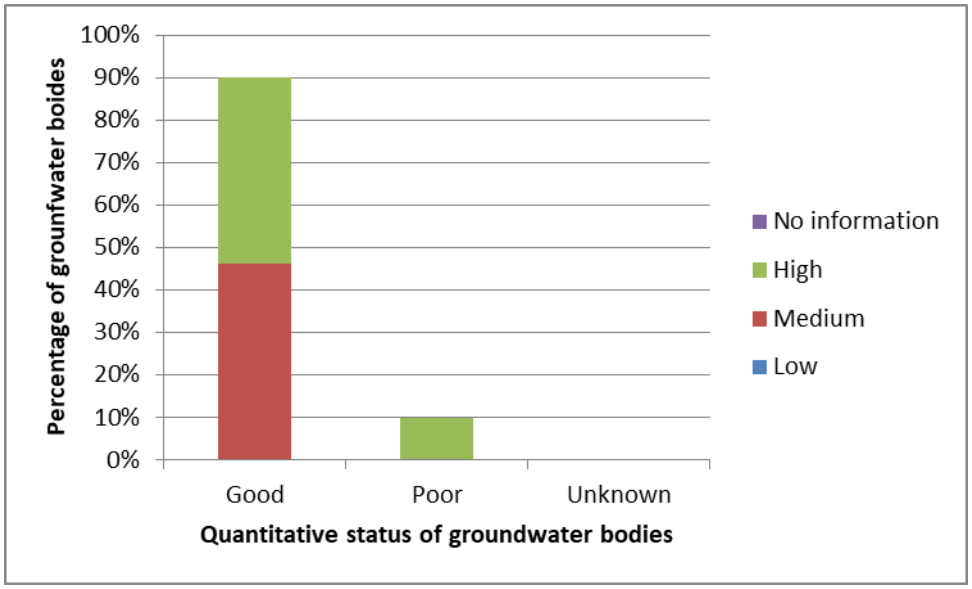
Note: Standard colours based on WFD Annex V, Article 2.2.4.
Source: WISE, Eurostat (country borders)

Figure 5.1 ***Quantitative status of groundwater bodies in Belgium for the second RBMP, for the first cycle RBMP, and expected in 2015. The number in parenthesis is the number of groundwater bodies for both cycles. Note the period of the assessment of status for the second RBMP was 1990 to 2013. The year of the assessment of status for the first cycle RBMP is not known***



Source: WISE electronic reporting

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



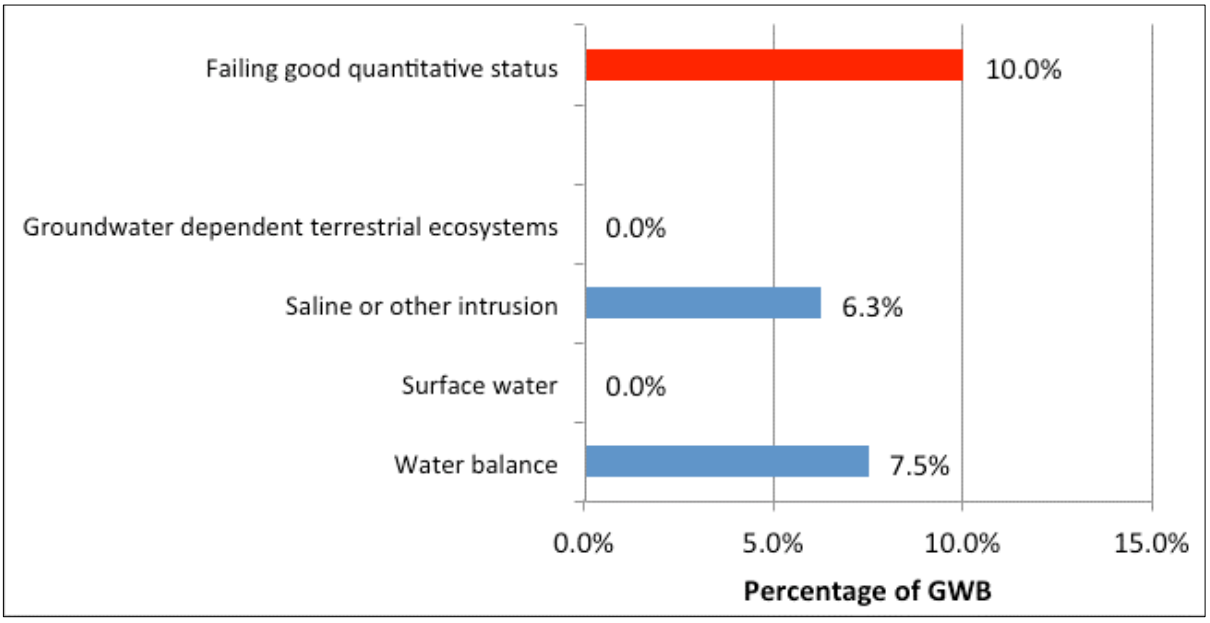
Source: WISE electronic reporting

The total number of groundwater bodies failing good quantitative status (all in the Scheldt RBD) decreased significantly from 15 groundwater bodies (19 % of the total) in the first

RBMP to eight (10 %) in the second RBMP. In terms of groundwater body area the decrease was from 45.1 % of the total groundwater body area failing good quantitative status in the first RBMP to 29.3 % in the second RBMP.

The reasons for the failure of good quantitative status of the eight groundwater bodies in the Scheldt RBD are shown in Figure 5.3. Six groundwater bodies are failing 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, and five groundwater bodies are failing due to saline intrusions. The expected date of achievement of good quantitative status in these groundwater bodies is unknown as shown in Figure 5.4.

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



Source: WISE electronic reporting

Notes:

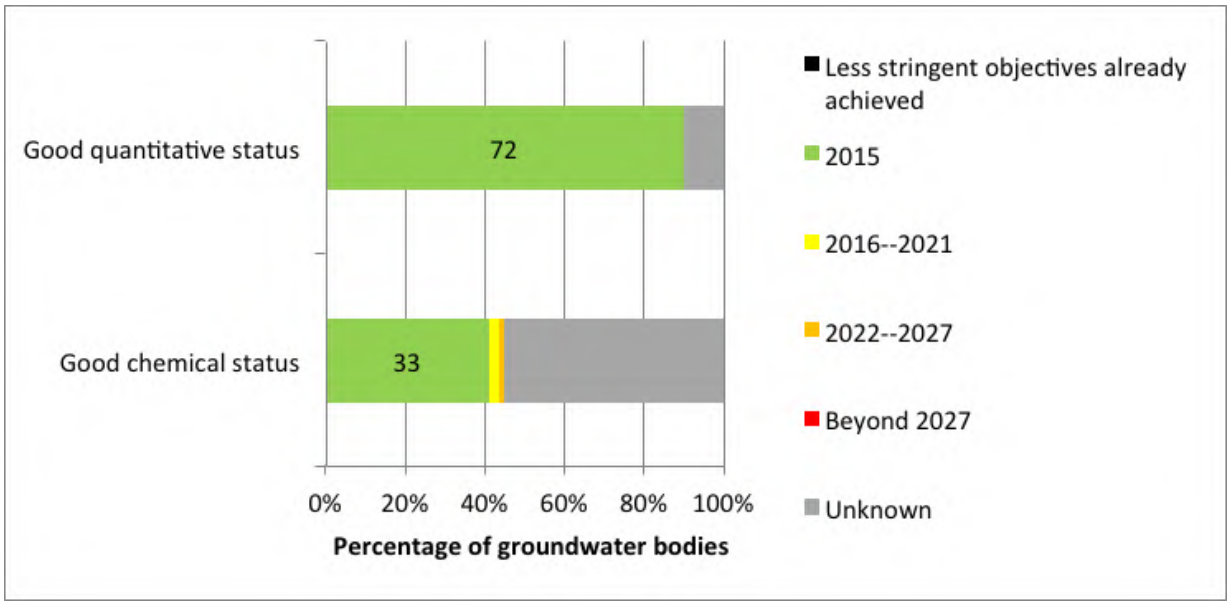
'Water balance' = long-term annual average rate of abstraction exceeds the available groundwater resource which may result in a decrease of groundwater levels.

'Surface water' = Failure to achieve Environmental Objectives (Article 4 WFD) for associated surface water bodies resulting from anthropogenic water level alteration or change in flow conditions; significant diminution of the status of surface waters resulting from anthropogenic water level alteration or change in flow conditions.

'Groundwater dependent terrestrial ecosystems' = Significant damage to groundwater dependent terrestrial ecosystems resulting from an anthropogenic water level alteration.

'Saline or other intrusion' = Regional saline or other intrusions resulting from anthropogenically induced sustained changes in flow direction.

Figure 5.4 ***Expected date of achievement of good quantitative and good chemical status of groundwater bodies in Belgium. 80 groundwater bodies delineated for second RBMP***



Source: WISE electronic reporting

For all six RBDs which have groundwater bodies a water balance method was reported to have been applied. In one RBD water balance was assessed by a comparison of annual average groundwater abstraction against the 'available groundwater resource' for every groundwater body and in five RBDs water balance was assessed by using reliable information on groundwater levels across the groundwater body.

In two of six RBDs the criterion of 'available groundwater resource' has been fully applied in accordance with WFD Article 2(27). In the other four RBDs the criterion has not been applied in accordance with WFD Article 2(27).

There are no RBDs where all environmental objectives have been considered in status assessment. Surface water ecosystems have not been considered at all, but they are not related to risk. Saline intrusion and terrestrial ecosystems have only been considered in the two RBDs of the Flanders region. Water balance has been considered in all RBDs.

In total, 12 groundwater bodies (15 %) are at risk of failing good quantitative status due to harm to actual or potential legitimate uses or functions of groundwater.

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

In 34 groundwater bodies in four of the six RBDs, groundwater associated surface waters have been reported to exist. They are not related to any risk and groundwater associated surface waters have not been considered in status assessment in any RBD.

In total, 53 groundwater bodies in all RBDs are linked with groundwater dependent terrestrial ecosystems and they are not related to any quantity-related risk. Groundwater dependent terrestrial ecosystems and their needs have only been considered in status assessment in the two RBDs of the Flanders region and for Scheldt (Brussels).

5.2. Main changes in implementation and compliance since first cycle

The RBMP and background documents assessment found that there are summaries of changes and updates in all the assessed RBMPs. Only in the Scheldt RBD is it mentioned that the quantitative status assessment is expanded with an ameliorated water balance test, an intrusion test, and a test for groundwater dependent ecosystems. In the other assessed RBMPs no changes were mentioned.

However, the monitoring situation has improved. The number of monitored groundwater bodies increased from 75 to 78 and the number of monitoring sites also increased slightly. The number of groundwater bodies failing good status almost halved from 15 to 8. In terms of groundwater body area, the area failing good status decreased from 45.1 % to 29.3 % of the total area.

5.3. Progress with Commission recommendations

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

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

6.1. Assessment of implementation and compliance with WFD requirements in second cycle

6.1.1. Monitoring of chemical status in groundwater

The total number of groundwater bodies in Belgium is 80 (Table 2.3). This has not changed since the first RBMP. Only one groundwater body is not subject to surveillance monitoring (Table 3.2) and all groundwater bodies at risk (66 %) are subject to operational monitoring. The RBMP and background documents assessment found no indication that grouping of groundwater bodies for monitoring and assessment of chemical status was applied. This means that groundwater monitoring is almost complete.

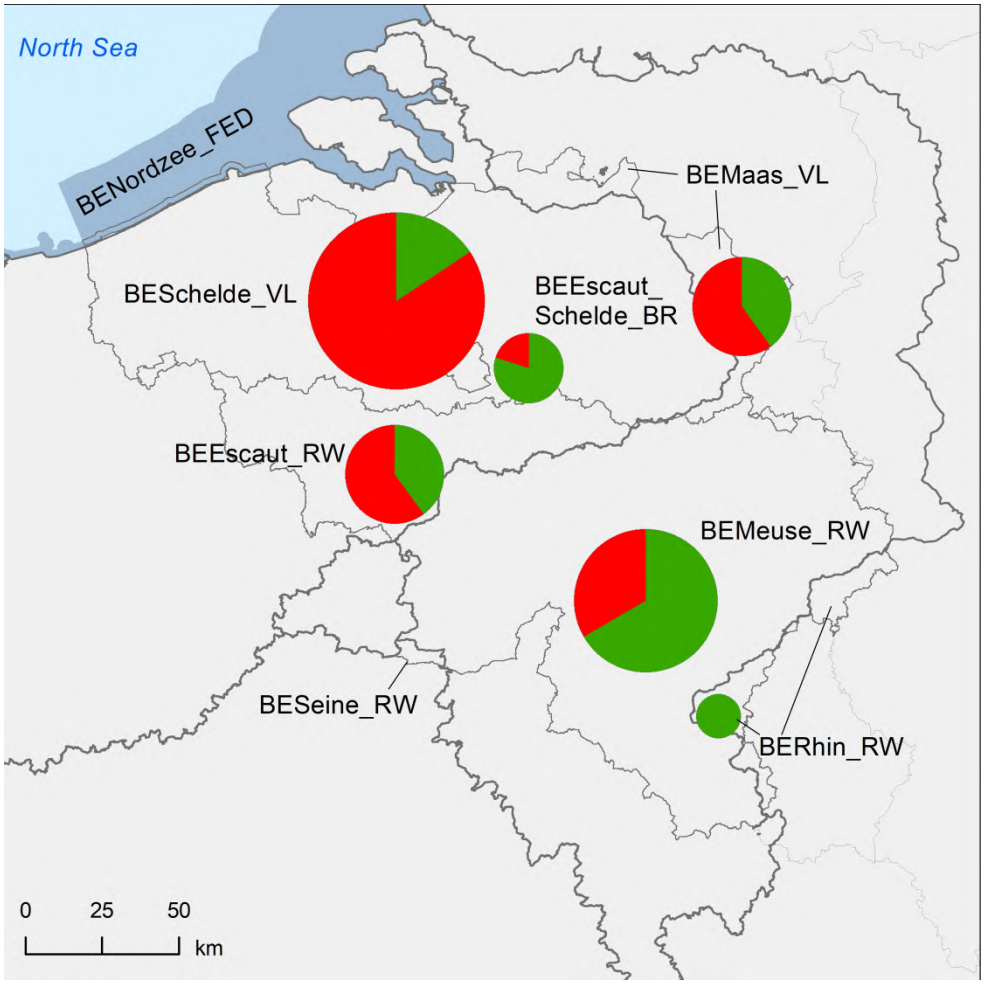
The number of groundwater bodies with surveillance monitoring increased from 78 in the first cycle RBMP to 79 in the second RBMP. The number of monitoring sites is listed in Table 3.4 and shows an increase from 456 in the first cycle RBMP to 463 in the second RBMP. The number of operational monitoring sites has been increased significantly since the first RBMP, from 264 to 299 in 74 groundwater bodies.

Not all substances at risk of causing deterioration in chemical status are subject to surveillance and operational monitoring in relevant groundwater bodies. All WFD core parameters (nitrate, ammonium, electrical conductivity, oxygen, and pH) are monitored in only one RBD. In one RBD none of the parameters are monitored, and in the remaining four it is mainly dissolved oxygen that is missing.

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. Map 6.1 shows that 33 of 80 groundwater bodies (41 %) were of good chemical status, and the remaining 47 groundwater bodies (59 %) are failing good chemical status. In terms of area this means that about 63 % are failing good chemical status.

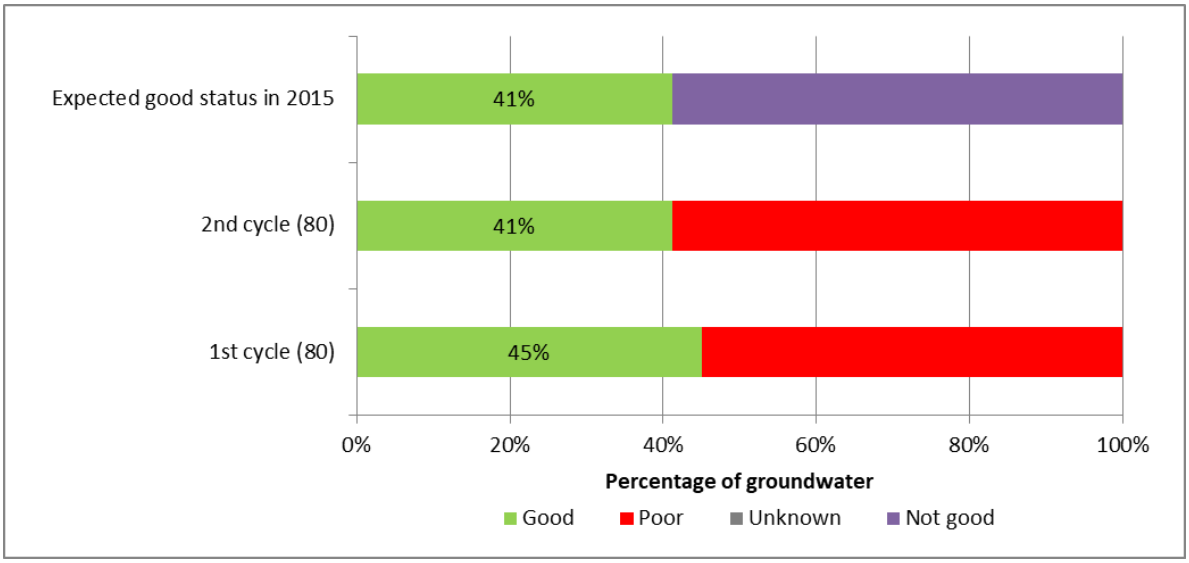
Map 6.1 ***Map of chemical status of groundwater bodies in Belgium based on the most recently assessed status of the groundwater water bodies***



Good
Poor
Unknown
River Basin Districts
Countries outside the EU

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

Figure 6.1 ***Chemical status of groundwater bodies in Belgium for the second RBMP, for the first cycle RBMP and expected in 2015. The number in the parenthesis is the number of groundwater bodies for both cycles. Note the period of the assessment of status for the second RBMP was 2009 to 2013. The year of the assessment of status for the first cycle RBMP is not known***

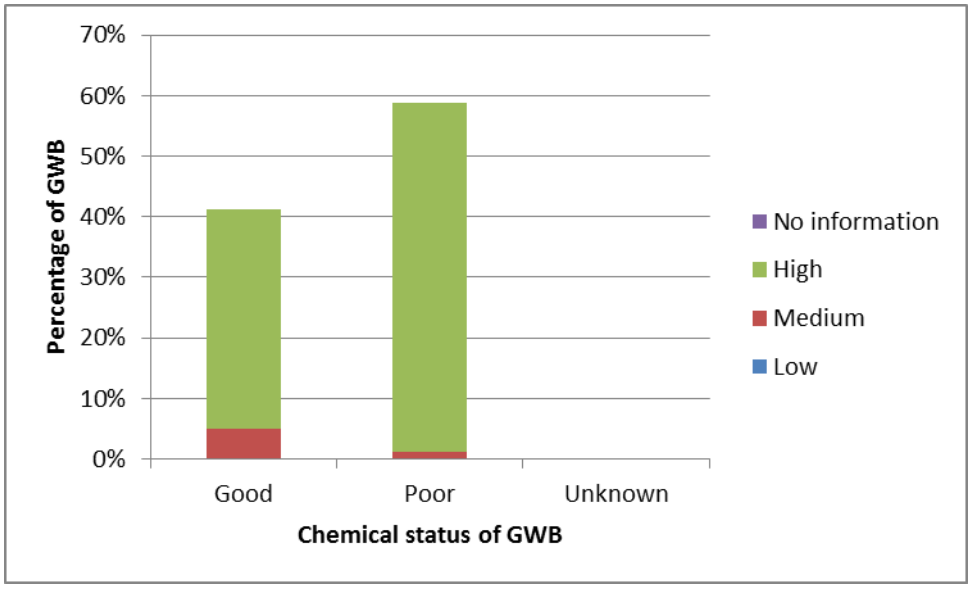


Source: WISE electronic reporting

The number of groundwater bodies failing good status increased since the first RBMP from 44 (55 %) to 47 (59 %) groundwater bodies (Figure 6.1). In terms of groundwater body area, the percentage of groundwater bodies at poor chemical status has increased from 61 % in the first RBMP to 63 % in the second RBMP. There were no groundwater bodies in unknown status in the first RBMP and there are still none in the second RBMP. Figure 6.2 shows the confidence in status classifications. The expected date of achievement of good chemical status in Belgium is shown in Figure 3.4.

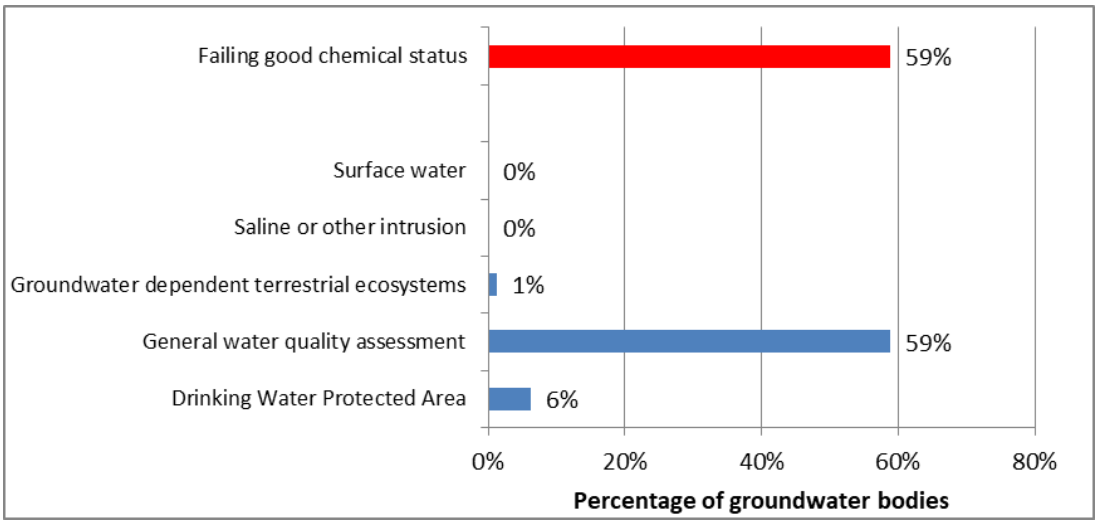
The reasons for the failure of good chemical status of groundwater bodies are shown in Figure 6.3. For 47 groundwater bodies the general assessment of the chemical status for the groundwater body as a whole failed. This assessment considers the significant environmental risk from pollutants across a groundwater body and a significant impairment of the ability to support human uses. Five groundwater bodies are failing the drinking water test which means that the requirements of drinking water protected areas have not been met. One groundwater body is failing the groundwater dependent terrestrial ecosystem test which means that there is damage to groundwater dependent terrestrial ecosystems. Figure 6.4 shows the top 10 pollutants causing failure of status and the top 10 causing a sustained upward trend.

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



Source: WISE electronic reporting

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



Source: WISE electronic reporting

Notes:

'Surface water' = Failure to achieve Environmental Objectives (Article 4 WFD) in associated surface water bodies or significant diminution of the ecological or chemical status of such surface water bodies.

'Groundwater dependent terrestrial ecosystems' = Significant damage to terrestrial ecosystems which depend directly on the groundwater body.

'Saline or other intrusion' = Regional saline or other intrusions resulting from anthropogenically induced sustained changes in flow direction.

'Drinking Water Protected Area' = Deterioration in quality of waters for human consumption.

'General water quality assessment' = Significant impairment of human uses; significant environmental risk from pollutants across the groundwater body.

The calculation of the extent of exceedance of a groundwater quality standard or a groundwater threshold value is in all RBDs based on the number of monitoring sites in the groundwater body.

Groundwater threshold values have been established for all Groundwater Directive[53] Annex II substances, but not for all pollutants or indicators of pollution causing a risk of failure of good chemical status. The RBMP and background documents investigations did not reveal any explanation for this. In all but one RBD natural background levels have been considered in the groundwater threshold value establishment. In the Scheldt (Brussels) RBD they have been considered in status assessment.

A trend methodology is available and assessments have been performed in all RBDs.

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

Groundwater dependent terrestrial ecosystems were identified in six RBDs. These were related to risk in four RBDs (not those in the Flanders region). One groundwater body was failing good chemical status. Groundwater dependent terrestrial ecosystems were considered in status assessments in the two RBDs in the Flanders region and the one RBD in Brussels, but not the other RBDs.

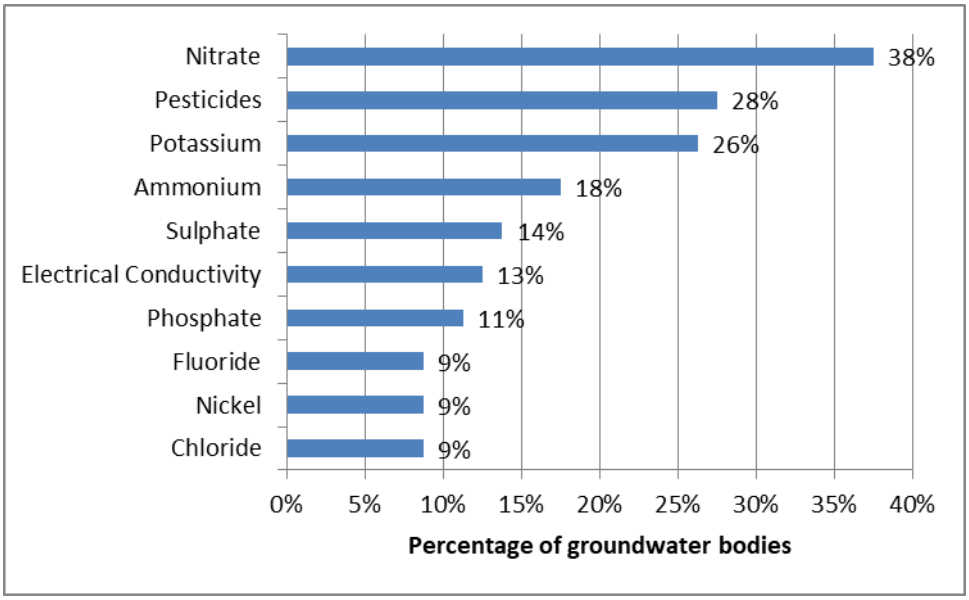
In four RBDs (not those in the Flanders region) surface water bodies are associated with groundwater bodies and related risks are indicated. Except for the Scheldt (Brussels) RBD, these aquatic ecosystems have not been considered in status assessments.

Groundwater associated aquatic ecosystems have been considered in the establishment of groundwater threshold values in those RBDs where such ecosystems exist, but groundwater dependent terrestrial ecosystems have not been considered at all. However, they do exist in six RBDs and are related to risk in four RBDs.

According to the RBMP and background documents assessment, there is no explanation given in the RBMPs why ecosystems have not been considered.

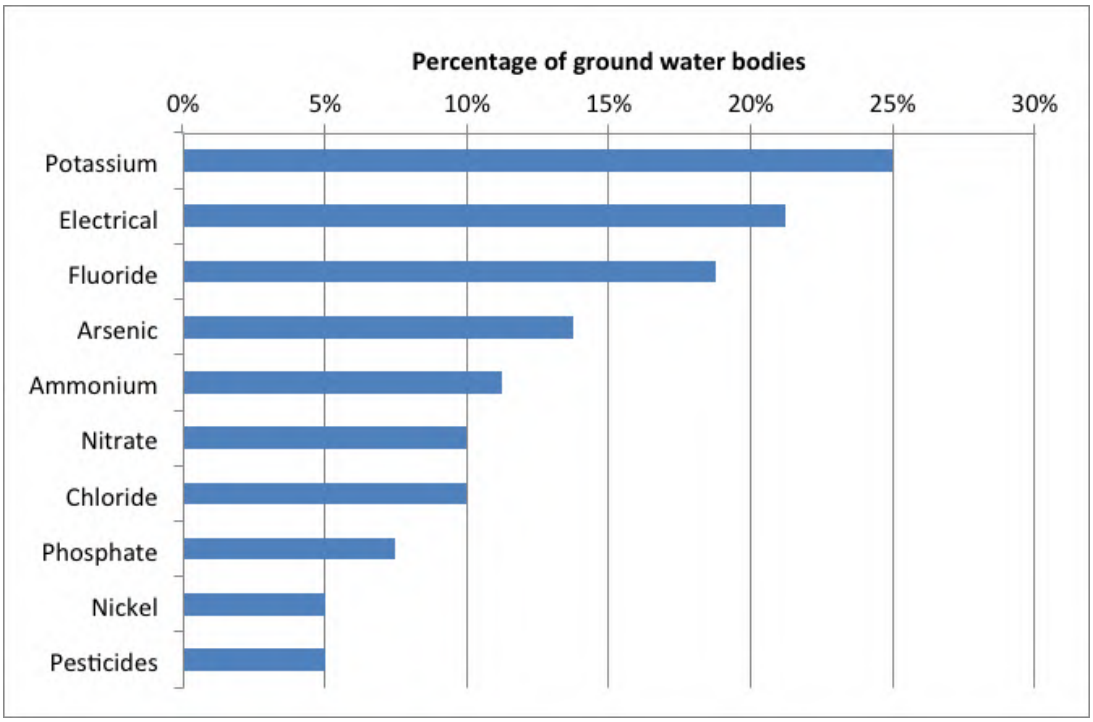
[53] Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration
http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02006L0118-20140711

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



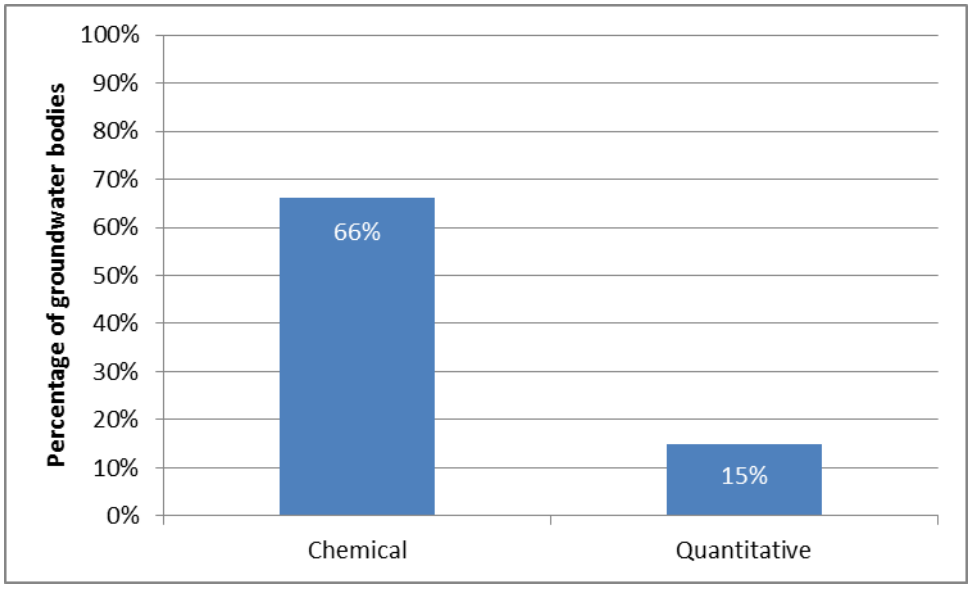
Source: WISE electronic reporting

Figure 6.5 Top 10 pollutants with upward trends in groundwater bodies in Belgium



Source: WISE electronic reporting

Figure 6.6 Percentage of groundwater bodies in Belgium at risk of failing good chemical status and good quantitative status for the second RBMP



Source: WISE electronic reporting

6.2. Main changes in implementation and compliance since first cycle

The RBMP and background documents assessment found a summary of changes and updates in some of the assessed RBMPs. For the Scheldt RBD it is mentioned that the monitoring data of one reference year (2012) was used for the chemical status assessment. Contrary to the previous reporting period, chemical and groundwater body specific thresholds were effectively used as thresholds to determine if a groundwater body is at risk of failing good chemical status. The list of examined chemical components and indicators was regularly updated using additional knowledge. Chemical-specific trend assessment for groundwater bodies was carried out for the first time.

The Scheldt (Brussels) RBD did not report changes and for the Meuse RBD no information on modifications of the current RBMP compared to the previous plan could be found[54].

The monitoring situation has improved slightly since the first cycle: the number of operational monitoring sites has increased by about 15 %. However, the status situation has slightly deteriorated: the groundwater body area failing good chemical status increased from 61 % to 63 % of the total groundwater body area[55].

[54] Belgium subsequently clarified that the assessment of the risk of not reaching good status was improved and the threshold values had been adapted.
[55] Belgium subsequently clarified that this is due to adjustments in the area.

6.3. Progress with Commission recommendations

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

- Recommendation: *On the assessment of groundwater status in the Flemish region, trend assessments should be carried out from the second cycle of RBMPs.*

  Assessment: Trend assessments have now been performed in all RBDs of Belgium. The recommendation is fulfilled.

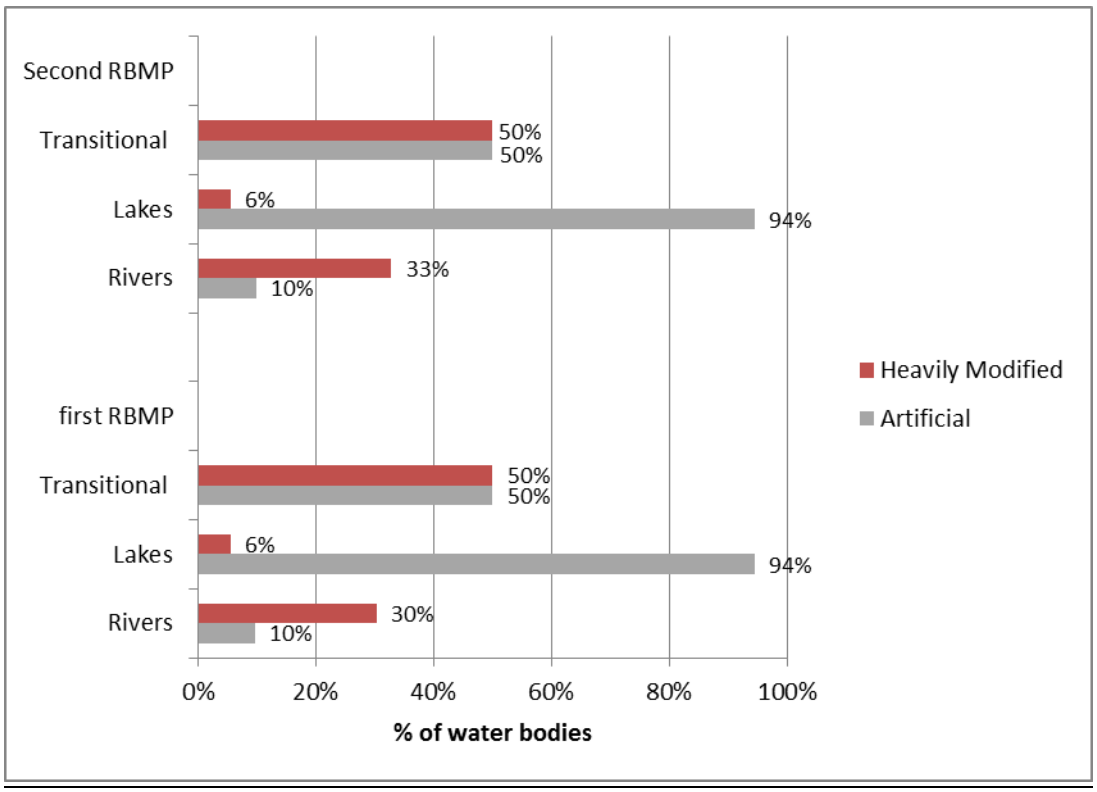
Topic 7 Designation of Heavily Modified and Artificial Water Bodies and definition of Good Ecological Potential

7.1. Assessment of implementation and compliance with WFD requirements in second cycle

7.1.1. Designation of Heavily Modified and Artificial Water Bodies

In the second RBMPs, heavily modified water bodies and/or artificial water body were designated in five out of eight RBDs. No heavily modified water bodies or artificial water body were designated in the North Sea, Rhine or Seine RBDs. The situation was similar in the first cycle RBMPs (Figure 7.1). No coastal water bodies are designated as heavily modified water bodies or artificial water body.

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



Source: WISE electronic reporting

In the Meuse RBD, there are 12 heavily modified water bodies which are reservoirs and were originally rivers. These are correctly designated as heavily modified rivers.

The main water uses for which river water bodies are designated as heavily modified water bodies are urban development, agriculture and flood protection. Hydropower and navigation are important uses for several river heavily modified water bodies in specific RBDs (hydropower in the Meuse RBD, and navigation in the Scheldt RBD).

The transitional heavily modified water bodies in the Scheldt RBD are designated due to navigation and flood protection. The lake heavily modified water body in the Scheldt RBD is designated due to flood protection.

In most RBDs the main physical alterations of river heavily modified water bodies are channelization/straightening/bed stabilisation/bank reinforcement. In single RBDs, land drainage and dredging/channel maintenance are key alterations of designated river heavily modified water bodies. For the lake water heavily modified water bodies, the main alterations are bank reinforcement and dredging. For the transitional heavily modified water bodies, the main alterations are channelization/straightening/bed stabilisation/bank reinforcement and dredging/channel maintenance.

The methodology for heavily modified water bodies' designation is described in the RBMPs or in additional background documents. Belgium has chosen to give the competence to designate heavily modified water bodies to the regions, and no formal "national methodology" has been developed. The methods are developed at the regional levels, but they seem to be fairly similar. Information is provided on criteria for the identification of substantial change in character, the types of physical alterations and the water uses which are considered for the designation of heavily modified water bodies. However, no information could be found on criteria used for the assessment of significant adverse effect of restoration measures on the use and the wider environment or an explanation of how better environmental options have been assessed.

7.1.2. Definition of Good Ecological Potential for Heavily Modified and Artificial Water Bodies

Good ecological potential was reported as defined using different approaches for the definition. In the four RBDs of the Wallonia region, the Prague approach (based on the identification of mitigation measures) is being applied, while in the Scheldt (Brussels) basin the Common Implementation Strategy Guidance approach (approach based on biological quality elements as illustrated in Common Implementation Strategy Guidance No. 4) is used. In the two other RBDs in the Flanders region, a hybrid approach is used combining elements of the other two methods.

A methodological document on the definition of good ecological potential is available for the regions of Flanders and Brussels, but not yet for Wallonia.

In the four RBDs in the Wallonia region, which apply the mitigation measures (Prague) approach, good ecological potential is defined for groups of heavily modified water bodies/artificial water bodies of the same use/physical modification. In the other three RBDs which use the Common Implementation Strategy Guidance or a hybrid approach, good ecological potential is defined at water body level.

Good ecological potential is also reported as defined in terms of biology. The biological quality element for which biological values have been derived to define maximum ecological potential and good ecological potential are phytoplankton, phytobenthos, benthic invertebrates and fish. In three RBDs, biological values have been derived also for macrophytes. The values for biological quality elements are estimated using methods, which are similar to the methods used for ecological status. From the documents available for the Scheldt (Brussels) RBD, it is concluded that the estimation of biological values of biological quality elements is based on historical data, statistical analysis and expert judgment. In RBDs in the Flanders region, estimation of values for biological quality elements is based on available data from similar water bodies, excluding elements/indicators for pressures that cannot be reversed.

Mitigation measures for defining good ecological potential have been reported in WISE, but no description of the ecological changes that these measures are designed to achieve could be found in the RBMPs.

In the four RBDs of the Wallonia region which apply the mitigation measures (Prague) approach, a comparison between good ecological potential and good ecological status has not been made. Such a comparison has been made in the three RBDs that use the Common Implementation Strategy Guidance or a hybrid approach for good ecological potential definition.

Biological quality element assessment methods (11 different methods in total) that are sensitive to hydrological and/or morphological changes were reported for all water categories:

- For rivers, there are methods that are sensitive to altered habitats due to hydrological and morphological changes for fish, benthic invertebrates, macrophytes, phytobenthos, and phytoplankton. One method for benthic invertebrates in rivers is sensitive to morphological, but not to hydrological changes.

- For lakes, four methods were reported, which are sensitive to altered habitats due to morphological changes for fish, benthic invertebrates, macrophytes, and phytobenthos.

- For coastal waters, one method was reported, which is sensitive to altered habitats due to hydrological and morphological changes for benthic invertebrates.

- For transitional waters, three methods were reported, which are sensitive to altered habitats due to morphological changes for benthic invertebrates, fish, and macrophytes. The method for macrophytes is also sensitive to hydrological changes.

7.2. Main changes in implementation and compliance since first cycle

There have been no changes in the number of lake and transitional water bodies designated as heavily modified water bodies or artificial water body since the first cycle. For rivers, some small changes in the designations are noted. In the Scheldt and Meuse RBDs, there are 12 and 2, respectively, additional designations of river heavily modified water bodies in the second cycle. In the Maas RBD, there are three river heavily modified water bodies fewer than in the first cycle.

In the four RBDs of the Flanders region, the methodology for heavily modified water body designation has been modified since the first RBMPs by including two additional uses, namely land drainage and water regulation. The additional uses considered for designation have led to additional water bodies being designated in the Scheldt RBD. Other changes noted are mainly due to the merging of water bodies. No further references to changes in methodology since the first RBMPs have been found.

Concerning the definition of good ecological potential for the Wallonia region, there was no information in WISE on the methodology to define good ecological potential for heavily modified water bodies in the first RBMPs. The WISE reporting for the second RBMPs indicates that good ecological potential is defined in the Wallonia region, but a methodological document is still not available.

Concerning the definition of good ecological potential in the other regions, a methodological document is available. According to information found, some changes (additional criterion) have been made to the method concerning the biological quality element phytoplankton for the good ecological potential of river heavily modified water bodies.

7.3. Progress with Commission recommendations

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

- Recommendation: *The process of designation of heavily modified water bodies in the Flemish region should be brought in line with the requirements of Article 4(3) WFD. In particular, the method used in Flanders should further analyse the link between the physical modifications and the failure to achieve good ecological status and develop an assessment of alternative means to achieve the beneficial objectives served by the use. This assessment should be specifically mentioned in the RBMPs. This indeed needed to ensure transparency of the designation process.*

  Assessment: Although the methods developed for the designation of heavily modified water bodies at the regional levels provide clear criteria for the identification of substantial change in character, the types of physical alterations and the water uses which are considered for the designation of heavily modified water bodies, no detailed information is given on criteria used for the assessment required under WFD articles 4(3)(a) and 4(3)(b), i.e. the assessment of significant adverse effect of restoration measures on uses or the wider environment or an explanation of how better environmental options to deliver the beneficial objectives served by the heavily modified water body have been assessed. Therefore, this recommendation is partially fulfilled.

Topic 8 Environmental objectives and exemptions

8.1. Assessment of implementation and compliance with WFD requirements in second cycle

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[56]), 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 for ecological and chemical status for surface waters and quantitative and chemical status for groundwater have been reported, although a significant number of unknowns remain.

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

For the second cycle plans, 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 Belgium elsewhere in this report: for ecological status/potential of surface waters in Chapter 3; for chemical status of surface waters in Chapter 4; for quantitative status of groundwater bodies in Chapter 5; and for chemical status of groundwater bodies in Chapter 6.

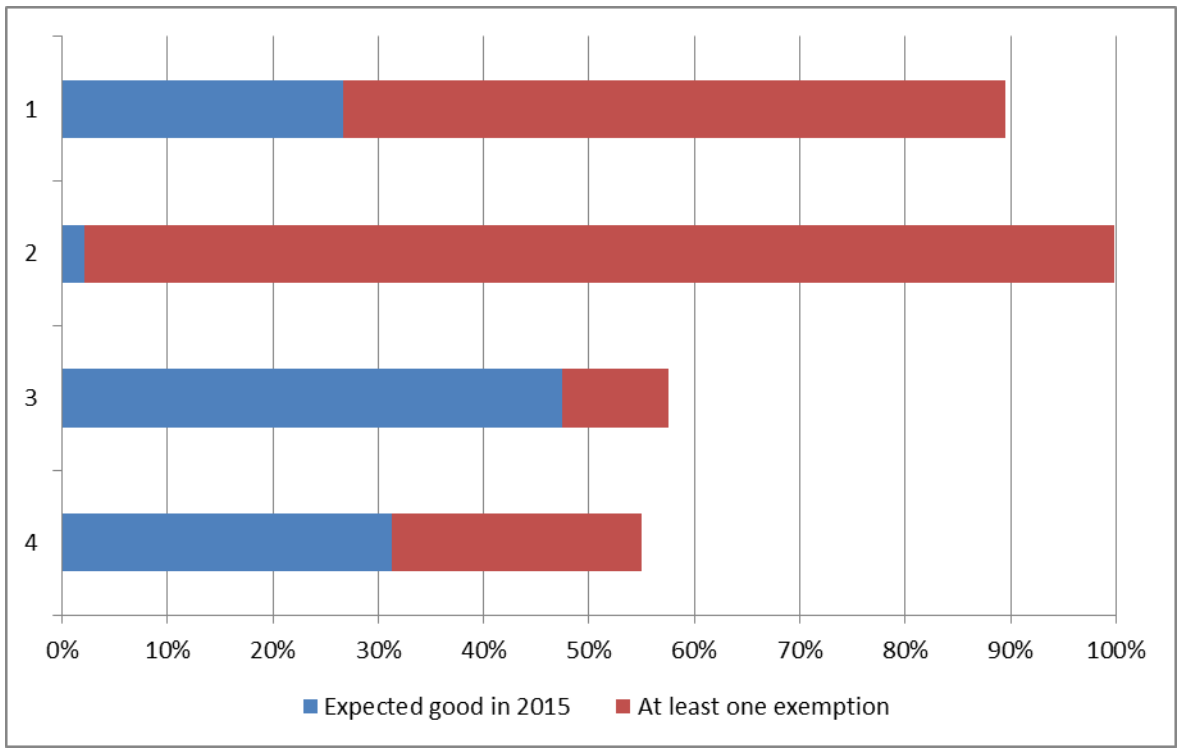
8.1.2. Exemptions

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 RMBP. Figure

[56] 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.

8.3 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 Belgium for the four main sets of environmental objectives.

Figure 8.3 Water bodies in Belgium 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

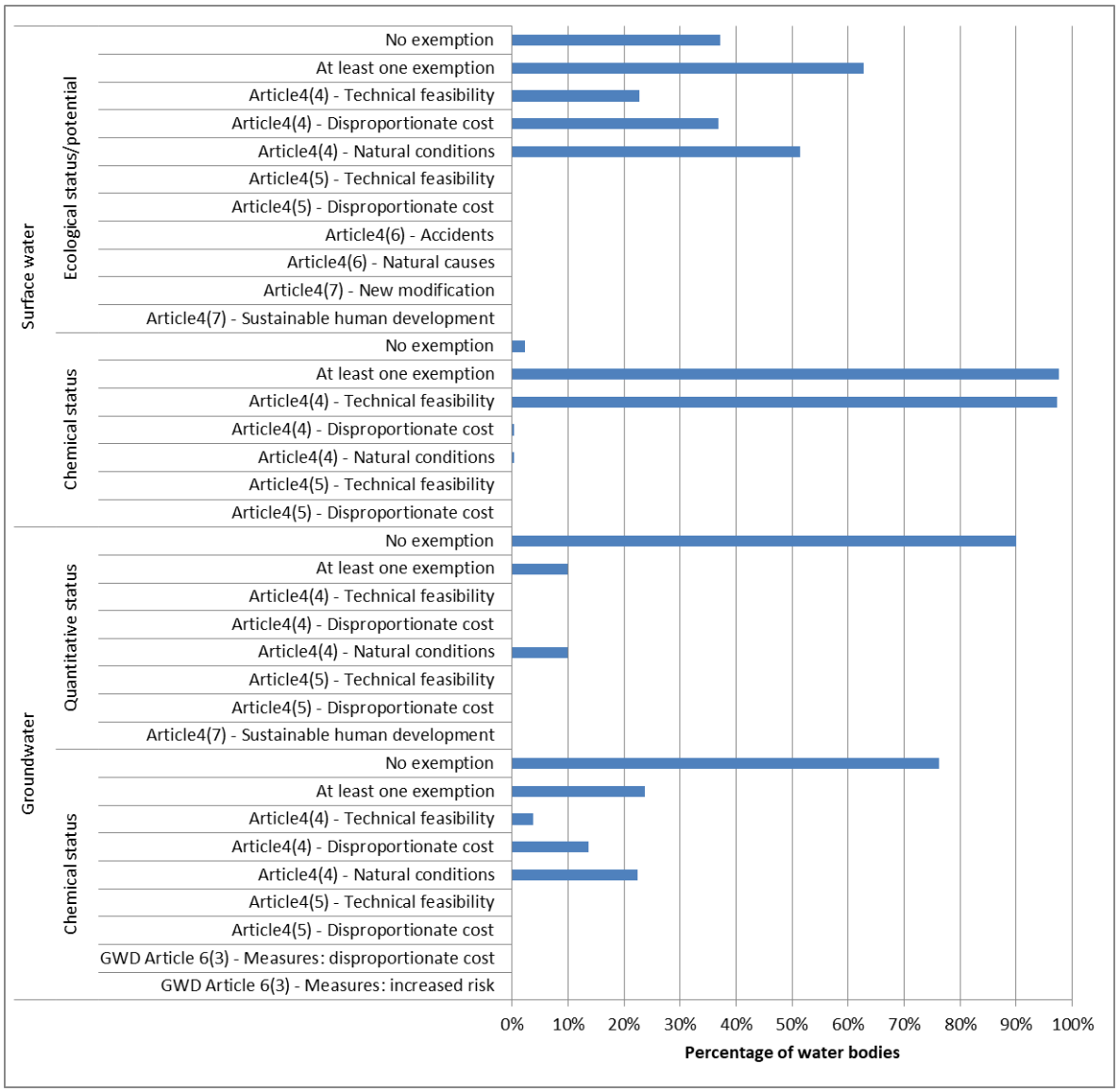


Source: WISE electronic reporting. For some water bodies the date for achievement of good status is unknown
Note: some figures missing in the reported information

Article 4 of the WFD allows under certain conditions for different exemptions to the objectives: 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 are 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 8.4 summarises the percentage of water bodies subject to each type of exemption (and reason) in relation to the four types of environmental objectives in Belgium.

Figure 8.4 ***Type of exemptions reported to be applied to surface water and groundwater bodies for the second RBMP in Belgium. 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 reporting

Application of Article 4(4)

The number of cases in which Article 4(4) in surface waters and groundwater has been applied has changed slightly in all RBDs (both increases and decreases). In the Rhine, Seine and North Sea RBDs, Article 4(4) is applied newly for surface waters.

In the first RBMP the justification for surface waters in relation Article 4(4) referred to technical feasibility, disproportional costs and natural conditions. The reasons used in 2015 were the same.

For RBDs in Flanders and Wallonia, there is also a methodology available that describes 'technical feasibility'. The justifications are elaborated and demonstrated in the background documents. For the Scheldt (Brussels) RBD the reasons for technical infeasibility are explained, by e.g. delays, numerous diffuse sources that are difficult to tackle or slow response time of the water system.

Disproportional costs are justified by affordability, cost-benefit analysis, and cost-effectiveness analysis. Both, for RBDs in Flanders and Wallonia, detailed calculations were made.

In relation to exemptions due to natural conditions, a brief summary was only provided for RBDs in the Wallonia region, with explanations of the reasons for exemptions due to natural conditions in groundwater. The Wallonia RBDs also provide arguments for technical infeasibility. The groundwater is influenced to a large extent by seeping from mining groundwater with high sulphate levels over a large region.

The main pressures to surface waters and groundwaters are stemming from a broad range of activities including urbanism, industry, agriculture, mining, and atmospheric deposition and activities causing changes in hydromorphology. The main drivers were agriculture, industry, urban development, and transport. The main impacts to groundwater were chemical and nutrient pollution. In surface waters the main impacts are organic, chemical and nutrient pollution, as well as hydromorphological impacts.

Table 8.6 Pressure responsible for Priority Substances in Belgium 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	Article 4(4) - Disproportionate cost	Article 4(4) - Natural conditions	Article 4(5) - Technical feasibility exemptions
	Number	Number	Number	Number	Number
1.1 - Point - Urban waste water	9	652	0	0	0
1.3 - Point - Industrial Emissions Directive plants	9	78	0	0	0
1.4 - Point - Non Industrial Emissions Directive plants	10	139	0	0	0
1.6 - Point - Waste disposal sites	7	34	0	0	0
1.8 - Point - Aquaculture	4	8	0	0	0
2.1 - Diffuse - Urban run-off	5	180	0	0	0
2.10 - Diffuse – Other	10	302	6	0	0
2.2 - Diffuse - Agricultural	7	377	0	0	0
2.4 - Diffuse - Transport	8	335	6	0	0
2.7 - Diffuse - Atmospheric deposition	7	703	6	2	0
2.8 - Diffuse – Mining	1	1	0	0	0
7 - Anthropogenic pressure - Other	3	26	0	0	0
8 - Anthropogenic pressure - Unknown	10	78	0	0	0
9 - Anthropogenic pressure - Historical pollution	5	10	0	10	0

Source: WISE electronic reporting

Table 8.7 ***Pressure responsible for pollutants in Belgium 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(4) - Disproportionate cost	Article 4(4) - Natural conditions
1.1 - Point - Urban waste water	1	1		1
1.2 - Point - Storm overflows	1	1		1
1.3 - Point - Industrial Emissions Directive plants	2	2	2	1
1.4 - Point - Non Industrial Emissions Directive plants	1	1	1	
1.5 - Point - Contaminated sites or abandoned industrial sites	3	3	3	2
1.6 - Point - Waste disposal sites	1	1		1
2.10 - Diffuse - Other	7	3	4	9
2.2 - Diffuse - Agricultural	10	2	10	10
2.5 - Diffuse - Contaminated sites or abandoned industrial sites	1			1
2.6 - Diffuse - Discharges not connected to sewerage network	1	1		1
9 - Anthropogenic pressure - Historical pollution	5			5

Source: WISE electronic reporting

Application of Article 4(5)

Article 4(5) was not applied in the first cycle and also not applied in the second cycle.

Application of Article 4(6)

No exemptions according to Article 4(6) have been applied.

Application of Article 4(7)

No exemptions according to Article 4(7) have been applied.

Application of Article 6(3) of the Groundwater Directive

No exemptions according to Article 6(3) of the Groundwater Directive[57] have been applied.

8.2. Main changes in implementation and compliance since first cycle

In those RBDs where Article 4(4) was already applied in the first cycle there are slight changes in the number of exemptions applied under Article 4(4) (small reductions or small increases). In the Rhine, Seine, and North Sea RBDs Article 4(4) is applied newly for chemical status of surface waters.

8.3. Progress with Commission recommendations

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

- *Recommendation: There have been a large number of exemptions applied in this first cycle of RBMPs. While the WFD does provide for exemptions, there are specific criteria that 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. In particular, a complete justification of technical feasibility and disproportionate costs should be included in the RBMPs[58].*

- Assessment: The recommendation has been implemented to some extent. The level of information provided behind the justification of exemptions varies a) depending on the reason, and b) depending on the different regions. For Belgium overall, the number of exemptions is not decreasing.

  Recommendation: The high number of exemptions applied in these first RBMPs is a cause for concern. Flanders should take all necessary measures to bring down the number of exemptions for the next cycle, including the needed improvements in the

[57] 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

[58] This recommendation refers to the Commission assessment of two RBMPs; the Flemish Region and the Federal plan on the coastal water

characterisation process, monitoring networks and status assessment methods, as well as reducing significantly the degree of uncertainties[59].

Assessment: For Belgium overall, the number of exemptions is not decreasing. For the assessment of the characterisation process, monitoring networks and status assessment methods, as well as reducing significantly the degree of uncertainties please see Chapters 2, 3, 4, 5 and 6.

- Recommendation: *Exemptions should be adequately justified at water body level. Reduce considerably the application of exemptions in the second RBMPs and better justify the exemptions applied based on a calculation of the measures needed to reach good status and a proper assessment of alternative solutions and all necessary mitigation measures for exemptions for new infrastructure.*

  Assessment: The recommendation has been implemented to some extent. The level of information provided behind the justification of exemptions varies a) depending on the reason, and b) depending on the different regions. For Belgium overall, the number of exemptions is not decreasing.

[59] This recommendation refers to the Commission assessment of two RBMPs; the Flemish Region and the Federal plan on the coastal water

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 Programme of Measures, which target the same pressure or purpose. The individual measures included in the Programme of Measure (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 Type 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 second cycle

9.1.1. General issues

An indication as to whether or not measures have been fully implemented and made operational is when they have been reported as being planned to tackle significant pressures (at the KTM level). Significant pressures are also reported at the water body level. It would therefore be expected that there would be measures planned in the RBMP to tackle all significant pressures. In general, the reported significant pressures are well covered with operational KTMs, for example, all pressures are covered for the Meuse RBD in Flanders. Not all pressures are covered with KTMs. There are for example no KTMs for diffuse atmospheric deposition, abstraction and flow diversion for public water supply and other, and alteration of

water level or volume, related to groundwater of the L'Escaut RBD. There are no KTMs for diffuse pressure from agriculture for groundwater in the Rhine RBD, although for surface water all point and diffuse pressures seem to be covered by KTMs for individual substances.

Belgium has mapped a total of 155 basic measures against 20 predefined KTMs, eight KTMs related to the Marine Strategy Framework Directive[60], and eight nationally developed KTMs. It has also mapped a total of 112 supplementary measures against 19 predefined KTMs and four regionally developed KTMs. In total, there are 22 predefined KTMs, 8 Marine Strategy Framework Directive KTMs and 10 regionally defined KTMs. The measures are applicable to variable numbers of RBDs; those related to the Marine Strategy Framework Directive are applicable to one RBD only. The basic measure types are indicated for all eight RBDs (none of them relate to Article 11(3)(f)).

KTMs mapped against measures and tackling significant pressures have been reported for four RBDs only (Schelde, Scheldt (Brussels), Maas and the North Sea), none have been reported for RBDs in the Wallonia region (L'Escaut, Meuse, Rhine and Seine). Some measures have been mapped which do not seem to have been made operational, for example, natural water retention measures in the Scheldt (Brussels), although this issue was included in relation to the FD[61] in the subunit.

KTMs used to address failures of good status caused by individual chemical pollutants in groundwater bodies and by River Basin Specific Pollutants in surface water bodies have been reported by RBDs in the Flanders region only for groundwater and surface water (Schelde and Maas); the number of groundwater bodies failing to be of good chemical status as a result of individual pollutants have also been reported for the Scheldt (Brussels) RBD, including the reference to KTMs 3 – "Reduce pesticides pollution from agriculture" and 13 – "Drinking water protection measures" as measures to tackle this pressure. The highest numbers of failures are for nutrients and pesticides. Where failures have been reported (groundwater in the Schelde and Maas RBDs) the River Basin Specific Pollutants are covered by measures. There is no information on River Basin Specific Pollutants in terms of the number of surface water bodies causing failure of WFD objectives.

KTMs used to tackle Priority Substances in surface water have been reported only by the Schelde and Maas RBDs, whereas the number of water bodies failing to be of good status as a

[60] 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

[61] 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

result of pollution from specific Priority Substances have been reported for these RBDs and also the Scheldt (Brussels) and North Sea RBDs. Where reported, most of the substances causing failure are covered by KTMs, except some of the polycyclic aromatic hydrocarbons. The highest numbers of failures are due to mercury in the Schelde RBD; this is being tackled with several KTMs.

Information on gap analyses reported electronically to WISE is very limited. Only for the North Sea RBD are a few gap indicators, KTMs and gap values for diffuse pollution (transport, atmospheric deposition, and other) included, with the gap values in terms of number of water bodies affected and number of substances or water bodies requiring restrictions in 2015, 2021 and 2027 remaining the same, that is, indicating no expected improvements. For some point pollution issues (nitrogen and phosphorus) in the North Sea RBD, indicators and KTMs have been provided but no gap values, commenting that the issues need to be dealt with by competent authorities upstream.

For some RBDs (for example, Schelde, Scheldt (Brussels) and Maas) KTMs to deal with the pressures have been listed, but no gap indicators or gap values. Belgium explains that the information is not available because of the complex multi-pressure environments which do not allow disaggregation of the pressure-measure relationship.

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. A combination of qualitative and quantitative cost-effectiveness analysis was carried out in the Scheldt (Brussels and Flanders) and Maas RBDs; only a qualitative analysis only was carried out in the Wallonia region (L'Escaut, Meuse, Rhine and Seine RBDs). No separate information was included for the North Sea RBD. In the first cycle cost-effectiveness analysis had been limited; in RBDs of the Flanders region the analysis was developed based on supplementary measures and in RBDs in the Wallonia region, it was completed using expert judgement.

A critical factor in the success of the implementation of the PoM is the availability of funding to support the investments required.

Investment costs for the first cycle have been reported at RBD level for those in the Wallonia Region separately for Article 11(3)(a) requirements (measures required to implement Community legislation for the protection of water) and Articles 11(3)(b-l), 11(4) and 11(5) (all other measures): for L'Escaut €407 m and €67 m, the Meuse €689 m and €67 m, the Rhine €21 m and €15 m, and the Seine €0.008 m and €0.1 m, respectively. RBDs in the Flanders

region reported no investments for Article 11(3)(a) for the Schelde and the Maas RBDs; and €2 419 m for the Schelde RBD and €297 m for the Meuse RBD for Articles 11.3(b-l), 11.4 and 11.5 investments. For the North Sea RBD, investments have been reported as €5.8 m for the total of Articles 11(3)(a-l), 11(4) and 11(5).

In the second RBMP, investment (€837 m) and annual costs (€10 m) have been provided for Article 11(3)(a) at Regional level for the four RBDs in the Wallonia Region, as were investment (€263 m) and annual costs (€5 m) for Articles 11(3)(b-l), 11(4) and 11(5). For RBDs in the Flanders region (Schelde and Maas RBDs) and the North Sea RBD, Article 11(3)(a) investment and annual costs were reported as zero, and for Articles 11(3)(b-l), 11(4) and 11(5) as follows: the Schelde RBD €2 569 m and €12 m, the Maas RBD €156 m and €0.7 m, and the North Sea RBD €3 m and €0.5 m, respectively. The Brussels Region reported investment costs of €1.3 m for Article 11(3)(a), and annual operation and maintenance costs of €446.81 m. For Articles 11(3)(b-l), 11(4) and 11(5) investment costs were reported as €30 m and annual operation maintenance costs as €7 m. Depreciation has not been included in any calculations.

European Union investment expenditure for the first cycle has been provided by the Wallonia Region separately for L'Escaut (€0.3 m), Meuse (€3.3 m), Rhine (€3.1 m) and the Seine RBDs (zero); whilst estimates for the second cycle are €3.6 m for each of the four RBDs (this may be a total Regional figure). For RBDs in the Flanders Region, the following figures have been provided: the Schelde RBD €36 m and €31 m, the Maas RBD €3.6 m and €3.1 m for 2009-15 and 2015-21, respectively. For the North Sea RBD, zero European Union investment has been reported for both cycles. The Brussels region reported that no EU funds had been received in the Schelde RBD in the first cycle but that €3.34 m is anticipated for the second cycle.

Links to further information have been provided.

No clear financial commitments have been secured for the implementation of PoM in any of the eight RBDs. On a sectoral basis, very few commitments have been secured, that is, three commitments for Agriculture (Walloon only: Escaut, Meuse and Rhin RBDs); two for Urban (Flanders: Schelde and Maas RBDs); one for recreation (Brussels: Escaut_Schelde), and three for flood protection (Brussels: Escaut_Schelde; and Flanders: Schelde and Maas). No other commitments have been reported, even where considered applicable, for example no commitments for industry in any RBD, although considered applicable in all, and none for any applicable sectors for the North Sea and the Seine RBDs.

No coordination of the preparation of all RBMPs and PoM with the Marine Strategy Framework Directive[62] has been reported for any of the seven RBDs (Belgium does not consider it relevant for the Scheldt (Brussels) RBD, which is land-locked). Joint consultation on the RBMPs and the Marine Strategy, as well as consideration of the need for additional or more stringent measures beyond those required by the WFD in order to contribute to the achievement of the relevant Marine Strategy Framework Directive objectives in coastal and marine environments, has been indicated for the North Sea RBD only, with required additional measures given in relation to "litter" and "others". KTMs that are relevant to the Marine Strategy Framework Directive have been listed for all seven relevant RBDs, with an indication of the type of measure, but not indicating the pressures they are addressing. For the North Sea RBD, eight other KTMs have also been listed, specific to the Marine Strategy Framework Directive (no other details provided).

Whilst joint consultation of RBMPs and FD[63] Flood Risk Management Plans has been carried out in all except the North Sea RBD, the RBMPs and Flood Risk Management Plans have been integrated into a single plan for the Scheldt (Brussels) and Schelde RBDs, and for the Maas RBD, and these include (i) Consideration of the objectives and requirements of the FD in the second RBMPs and PoM, (ii) Win-win measures in terms of achieving the objectives of the WFD and FD, (iii) Drought management and use of Natural Water Retention Measures, as well as (iv) financial commitments for the implementation of PoM in the flood protection area.

The design of new and existing structural measures, such as flood defences, storage dams and tidal barriers, have been adapted to take account of WFD Environmental Objectives in all (except the North Sea RBD). WFD Article 9(4) has been applied to impoundment for flood protection in the Scheldt (Brussels), L'Escaut, Meuse, Rhine and Seine RBDs, and as such it would be an activity/use which should be subject to cost recovery under Article 9 in the Schelde and Maas RBDs).

9.1.2. Measures related to other significant pressures

Only one other significant pressure has been reported (anthropogenic - historic pollution) for 1 RBD (North Sea). Indicator values in terms of number of water bodies failing environmental quality standard are provided for 2015, 2021 and 2027 (with the gap value as one in every case) and KTM 14 – "Research, improvement of knowledge base reducing uncertainty" was reported as dealing with this pressure, with indicator values as number of water bodies

[62] 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

[63] 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

requiring the measure, and gap values also at one for 2015, 2021 and 2027, indicating no expected improvement. There is no information on any of the other RBDs.

9.1.3. Mapping of national/RBD measures to Key Types of Measure

It was expected that Member States would be able to report their PoM by associating their measures with predefined KTMs. KTMs are expected to deliver the bulk of the improvements through reduction in pressures required to achieve WFD Environmental Objectives. A KTM may be one measure, but would typically comprise more than one measure. Member States are required to report on the national measures associated with the KTMs, and whether the 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 measures that have been mapped to the relevant KTMs in Belgium[64]. 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 KTMs.

Table 9.1 Mapping of the types of measures to KTMs in Belgium

KTM	National basic measures	National supplementary measures	Number of RBDs where reported
KTM1 - Construction or upgrades of wastewater treatment plants	3	8	7
KTM10 - Water pricing policy measures for the implementation of the recovery of cost of water services from industry	1	1	1
KTM13 - Drinking water protection measures (for example, establishment of safeguard zones, buffer zones etc.)	2	7	7
KTM14 - Research, improvement of knowledge base reducing uncertainty	25	2	7
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	1	2	6
KTM16 - Upgrades or improvements of industrial wastewater treatment plants (including farms).	5	1	6
KTM17 - Measures to reduce sediment from soil erosion and surface run-off	3	1	6
KTM18 - Measures to prevent or control the adverse		1	1

[64] Due to different interpretations and implementation of KTMs in the different regions, aggregations such as in the tables in chapter should be interpreted with care.

KTM	National basic measures	National supplementary measures	Number of RBDs where reported
impacts of invasive alien species and introduced diseases			
KTM19 - Measures to prevent or control the adverse impacts of recreation including angling	1	1	5
KTM2 - Reduce nutrient pollution from agriculture	8	4	7
KTM20 - Measures to prevent or control the adverse impacts of fishing and other exploitation/removal of animal and plants	6		1
KTM21 - Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure	7	18	4
KTM23 - Natural water retention measures	2	9	3
KTM24 - Adaptation to climate change	3		6
KTM25 - Measures to counteract acidification	1		2
KTM3 - Reduce pesticides pollution from agriculture	2	4	7
KTM4 - Remediation of contaminated sites (historical pollution including sediments, groundwater, soil)	2	6	7
KTM5 - Improving longitudinal continuity (for example, establishing fish passes, demolishing old dams)		4	4
KTM6 - Improving hydromorphological conditions of water bodies other than longitudinal continuity	3	10	8
KTM7 - Improvements in flow regime and/or establishment of ecological flows	2	5	7
KTM8 - Water efficiency, technical measures for irrigation, industry, energy and households	6	6	7
KTM9 - Water pricing policy measures for the implementation of the recovery of cost of water services from households	2	2	1
KTM – Communication	1		4
KTM – Ensure coordinated implementation of water policy and exchange experiences and information	5		1
KTM – Improving ecological conditions	2		2
KTM – Improving enforcement	1	3	2
KTM – Improving hydrological conditions	2		2
KTM – Improving hydromorphological conditions		1	2
KTM26 Marine Strategy Framework Directive	2		1
KTM28 Marine Strategy Framework Directive	1		1
KTM29 Marine Strategy Framework Directive	3		1
KTM31 Marine Strategy Framework Directive	1		1
KTM35 Marine Strategy Framework Directive	1		1
KTM36 Marine Strategy Framework Directive	1		1

KTM	National basic measures	National supplementary measures	Number of RBDs where reported
KTM37 Marine Strategy Framework Directive	2		1
KTM38 Marine Strategy Framework Directive	3		1
KTM – Legal framework	8		1
KTM – Measures to improve water quality	1		2
KTM – National coordination		1	4
KTM – Water pricing policy measures for the implementation of recovery of cost of water services	1	5	2
Total Mapped Measures	155	112	

Source: Member States reports to WISE

Table 9.2 Type of basic measure mapped to KTMs in Belgium

KTM	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										4						4
KTM10 - Water pricing policy measures for the implementation of the recovery of cost of water services from industry			1													
KTM13 - Drinking water protection measures (e.g. establishment of safeguard zones, buffer zones etc)												1	6			
KTM14 - Research, improvement of knowledge base reducing uncertainty		1						1								
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															2	
KTM16 - Upgrades or improvements of industrial wastewater treatment plants (including farms).										1						
KTM17 - Measures to reduce sediment from soil erosion and surface run-off						1										
KTM18 - Measures to prevent or control the adverse impacts of invasive alien species and introduced diseases						1										
KTM19 - Measures to prevent or control the adverse impacts of recreation including angling									1							
KTM2 - Reduce nutrient pollution from agriculture								1			3					
KTM21 - Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure	1					1		2		8	6					
KTM23 - Natural water retention measures					1	6					2					
KTM3 - Reduce pesticides pollution from agriculture.											2				2	
KTM4 - Remediation of contaminated sites (historical pollution including sediments, groundwater, soil)											2	1			3	
KTM5 - Improving longitudinal continuity (e.g. establishing fish passes, demolishing old dams)						4										

KTM6 - Improving hydromorphological conditions of water bodies other than longitudinal continuity						10										
KTM7 - Improvements in flow regime and/or establishment of ecological flows		1				4										
KTM8 - Water efficiency, technical measures for irrigation, industry, energy and households				6												
KTM9 - Water pricing policy measures for the implementation of the recovery of cost of water services from households			2													
KTM99 - Other KTM reported under PoM	1	2	5			1			1							

Source: Member States reports to WISE

Key

'Urban Waste Water' = Urban Waste Water Treatment Directive (91/271/EEC) .
'Nitrates' = Nitrates Directive (91/676/EEC) .
'Habitats or Birds' = Habitats Directive (92/43/EEC) or Birds Directive (2009/147/EC)
'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.
'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.
'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.
'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.
'Hydromorphology' = Article 11(3)(i): Measures to control any other significant adverse impact on the status of water, and in particular hydromorphological impacts.
'Pollutants direct groundwater' = Article 11(3)(j): Prohibition of direct discharge of pollutants into groundwater.
'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.
'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.
'Other' = Other Directives mentioned in Part A of Annex VI of the WFD.

9.1.4. Pressures for which gaps to be filled to achieve WFD objectives and the KTM 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. This information was not reported by Belgium.

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 0 is comparable with 100 % good ecological status or potential or good chemical status. This information was not reported by Belgium.

Belgium did not provide sufficient information to WISE to allow a meaningful summary of the significant pressures on surface waters and the chemical substances causing failure of good chemical status or good ecological status/potential of surface water bodies for which gaps to the achievement of WFD environmental objectives to be presented.

9.2. Main changes in implementation and compliance since first cycle

Progress for the first cycle of PoM in Belgium was reported as “some measures completed” for 7 RBDs and “all measures started” for the North Sea RBD. Obstacles were reported for all except the North Sea RBD. The main obstacles included “Governance”, “Lack of finance”, “Lack of measures”, and “Lack of mechanisms”. The RBDs in the Wallonia Region also reported “Other obstacles” as “Difficult to answer in terms of Yes or No” for all four RBDs, and the two RBDs in the Flanders region as “More investigations and time needed”. Brief descriptions of progress were provided by the Federal Government authority for the North Sea RBD and by the Flanders region for the Schelde and Maas RBDs[65]. According to this, none of the water bodies in the Flanders region have good ecological status or potential, and the only

[65] Belgium (Brussels Region) subsequently clarified that they had provided a summary in their RBMP. However, a specific reference was not provided in the appropriate part of the electronic reporting to WISE and this information was therefore not assessed.

clear impact of measures seems to be a slight improvement in the quantitative status of groundwater bodies.

Some progress seems to have been made in carrying out cost-benefit analyses and linking some measures to pressures. The RBMP and background documents assessment indicated that for the Schelde and Scheldt (Brussels) RBDs: (i) actions were formulated in a more specific and detailed manner compared with the first cycle, and, (ii) the public consultation proposed 6 different scenarios with measures at different levels of ambition.

9.3. Progress with Commission recommendations

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

- Recommendation: *Ensure that the RBMPs clearly identify the gap to good status for individual pressures and water bodies, and that PoM are designed and implemented to close that gap since none of the three Regions carried out an assessment/analysis of how far pressures (and their corresponding sources) have to be reduced to achieve the WFD objectives.*

  Assessment: No gap analyses were carried out, except for three diffuse pressures (Diffuse - transport, - atmospheric deposition, and - other) in the North Sea RBD in terms of number of water bodies affected and number of substances or water bodies requiring restrictions, with no improvements expected by 2027 (Belgium explained that it was "not possible to identify gaps in terms of specific pressures due to multi-pressure environment" and that other tools and models were used to identify pressures and select the appropriate measures to deal with the difficulties to set up a gap analysis in a multiple pressure environment).

  It is unclear whether this recommendation has been fulfilled.

- Recommendation: *Establish a quantitative source apportionment and a link between pressures/impacts and their sources. Belgium should use these as a basis for determining Programmes of Measures.*

  Assessment: With respect to the measures aspect of this recommendation, there are some links between pressures and implemented measures, although not all pressures seem to be covered by measures and it is not clear how these were prioritised.

This recommendation has not been fulfilled.

- Recommendation: *Ensure that cost-effectiveness analyses are conducted in the Brussels and Walloon Regions to inform their next RBMPs (only Flanders has carried it out).*

  Assessment: A combination of qualitative and quantitative cost-benefit analysis of measures has now been conducted by the Brussels Region, and a qualitative analysis only in the Walloon Region, and no details of prioritisation of measures have been provided (RBMP and background documents).

  This recommendation has been partly fulfilled.

Topic 10 Measures related to abstractions and water scarcity

10.1. Assessment of implementation and compliance with WFD requirements in second cycle and main changes in implementation and compliance since first cycle

10.1.1. Water exploitation and trends

Water abstraction pressure is relevant for a few RBDs in Belgium, namely the Maas, Scheldt and the Scheldt (Brussels) RBDs. The Water Exploitation Index is only reported for RBDs within the Wallonia region with a value of 6.4 % (2011); and not for RBDs in the other regions. However, water quantity data have been reported to support the European State of the Environment Report in relation to Water Quantity. Water scarcity is not considered an issue at the international level. The RBMPs do not include a water resource allocation and management plan.

10.1.2. Main uses for water consumption

The uses of water consumption were reported to be households and industry for the Scheldt (Brussels) RBD but no data were reported for other RBDs. However, water abstraction information has previously been reported to support the European State of the Environment Report in relation to Water Quantity for the RBDs for pressures related to water quantitative that are significant.

10.1.3. Measures related to abstractions and water scarcity

The management of basic measures (Article 11(3)(e)) in Belgium varies. In the RBDs of the Wallonia region there is a concession, authorisation, and/or permitting regime to control water impoundment and a register of impoundments; and small abstractions are not exempted from these controls. Measures in relation to abstractions and water scarcity have been implemented in the previous cycle and new measures and/or significant changes are not planned for the period of the second cycle. In the Scheldt (Brussels) RBD there is a concession, authorisation, and/or permitting regime to control water impoundment, but no register of impoundments; and small abstractions are exempted from these controls, even though 33 % of surface water bodies face significant abstraction pressures. Such a system also applies to RBDs in the Flanders region (Scheldt and Maas RBDs), with the Scheldt RBD having 25 % of groundwater bodies in bad quantitative status, 15 % of surface water bodies facing significant abstraction pressures, and 11 % of surface water bodies of the Maas RBD facing such abstraction pressures. In summary, those RBDs which face significant abstraction pressures and inconsistency with

WFD-objectives (the Scheldt (Brussels), Maas and Scheldt RBDs) have a permitting systems in place which differs depending on the quantity of the abstraction (varying from a permit to general binding rules following a registration system). It should be noted that in these RBDs new measures or significant changes are foreseen in the second RBMPs. The North Sea and Scheldt RBDs have no control system in place, but no significant abstraction pressures were reported for them.

Regarding measures under Article 11(3)(c), it should be noted that in 2 of the RBDs that face water abstraction pressures (the Maas and Scheldt RBDs), new measures or significant changes are foreseen in the second RBMPs. In the Scheldt (Brussels) RBD, no new measures are foreseen, but previous measures are expected to be taken forward.

Measures for the prior authorisation of artificial recharge or augmentation of groundwater bodies - Article 11(3)(f) - have been implemented in the previous cycle, and new measures or significant changes are planned for the next period for the Maas and the Scheldt RBDs.

Complementary measures are planned to be implemented in the Scheldt (Brussels) RBD associated with urban water abstractions and KTM13 – "Drinking water protection measures" (for example, establishment of safeguard zones or buffer zones). In the Maas RBD, KTM8 – "Water efficiency, technical measures for irrigation, industry, energy and households" addresses urban and industrial uses, and in the Scheldt RBD agricultural, urban and industrial uses. However, the reported information does not detail the expected achievements in terms of closing existing gaps.

The re-use of water has been included as a measure in terms of managing water resources in the RBMPs of the Scheldt (Brussels), Maas and Scheldt RBDs.

10.2.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 cycle and main changes in implementation and compliance since first cycle

Pressures related to agriculture are clearly identified, both for surface and groundwater in the River Basin Management Plans. Nitrogen and phosphorus from diffuse sources and pesticides from point and diffuse sources are impacting water quality in surface waters in all RBDs. Altered habitats due to morphological changes resulting from agricultural practice were reported in L'Escaut RBD and the Meuse RBD. Acidification in surface waters was reported in Maas and Scheldt RBDs. Impacts due to agriculture on groundwater from nutrient and chemical pollution were reported in the Scheldt, Rhine, Meuse, Maas, and L'Escaut RBDs. Organic pollution is also reported in the Maas and Scheldt RBDs.

An assessment of the gap to the achievement of the WFD objectives is presented in the Wallonian RBMPs and in a background document from Flanders. The gap assessment of Wallonia quantifies nitrogen and phosphorus loads, including quantifications for different polluters (industry, agriculture, urban wastewater) based on the PEGASE-model. For the North Sea, the area of agricultural land to be covered by measures to achieve environmental objective was reported.

KTM 2 - "Reduce nutrient pollution from agriculture" and KTM 3 - "Reduce pesticides pollution from agriculture", are applied in all RBDs except the North Sea RBD where KTM 2 - "Reduce nutrient pollution from agriculture" is applied. Supplementary measures to reduce nutrient pollution are applied in all RBDs. In the Scheldt (Brussels) RBD, these are only applied in drinking water zones and in the vulnerable zones, the area of which, are almost the same as the drinking water safeguard zones in Brussels. KTM 12 – "Advisory services for agriculture" is applied in L'Escaut, Scheldt (Brussels), Maas, Meuse, North Sea, Rhine, Scheldt, and Seine RBDs. KTM 13 – "Drinking water protection measures" (for example, establishment of safeguard zones, buffer zones etc.) are applied in L'Escaut, Scheldt (Brussels), Maas, Meuse, North Sea, Rhine, Scheldt, and Seine RBDs. There is no indication in the RBMPs that the drinking water protection zones have been changed compared to the first RBMP. There is no indication that any additional control measures on land have been introduced (not just in safeguard zones but in the wider catchment) to prevent nitrogen, phosphorus, or pesticides from entering drinking water sources.

KTM 17 – “Measures to reduce sediment from soil erosion and surface run-off“ is applied in L’Escaut, Scheldt (Brussels), Maas, Meuse, North Sea, Rhine, Scheldt, and Seine RBDs. KTM 23 – “Natural water retention measures“ is applied in L’Escaut, Scheldt (Brussels), Maas, Meuse, North Sea, Rhine, Scheldt, and Seine RBDs. It is unclear from the RBMPs whether the above-mentioned measures are voluntary or mandatory.

No information on the area of agricultural land to be covered by measures to achieve WFD environmental objectives is provided, except for the North Sea RBD. The 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 is included for the Seine, Scheldt, Rhine, Meuse, Maas, and L’Escaut RBDs. For these RBDs, there are differentiated rules for different parts of the RBDs. Issues covered by the general binding rules to control diffuse pollution from agriculture are nitrates, organic pollution, pesticides, and phosphorus except in the North Sea RBD, where no information is provided.

Farmers/Farmers' Unions have been consulted under the Public Consultation process in all RBDs.

Financing of measures is only secured in the Wallonia RBDs using Rural Development programmes. Financing of agricultural measures is partially secured in the RBDs: it is not secured in the Maas or Scheldt RBDs.

11.2.Progress with Commission recommendations

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

- Recommendation: *The baseline for water protection in the agriculture sector needs to be very clear, so that all farmers know the rules, and the authorities in charge of the CAP funds can adequately set up Rural Development programmes and cross compliance water requirements. In particular, information on how the measures will be funded through the Rural Development programmes should be in the PoM.*

  Assessment: The recommendation has been partially fulfilled as there is no information on the area of agricultural land to be covered by measures to achieve environmental objectives except for the North Sea RBD. However, the implementation of basic measures, Article 11(3)(h), for the control of diffuse pollution from agriculture at source are set in the Seine RBD, Scheldt, Rhine, the Meuse, Maas, and L’Escaut RBDs. Issues covered by the general binding rules to control diffuse pollution from agriculture

are nitrates, organic pollution, pesticides, and phosphorus except in the North Sea RBD (no information) For these RBDs there are differentiated rules for different parts of the RBDs. Supplementary measures in relation to agricultural pressures can be found in all RBDs. Financing of agricultural measures is secured in Wallonia.

- Recommendation: *Review the degree to which the existing measures to implement the Nitrates Directive (ND) are sufficient to address agricultural pressures to allow the more stringent nutrient conditions for the WFD and MSFD to be met.*

  Assessment: A gap assessment was performed in Wallonia and Flanders but it remains unclear how much of the gap to the achievement of the WFD objectives is expected to be achieved by the measures under the Nitrates Directive. The recommendation is partially fulfilled.

- Recommendation: *Additionally, Belgium should ensure basic measures as per Article 11.3.h are put in place to control other diffuse pollutants – e.g. phosphate, pesticides, particulate matter. These measures should be specific, have a clear legal basis, and include appropriate advice, monitoring and inspection regimes to ensure their effective implementation.*

  Assessment: The implementation of basic measures, Article 11(3)(h), for the control of diffuse pollution from agriculture at source are set in the Seine, Scheldt, Rhine, Meuse, Maas, and L'Escaut RBDs. Issues covered by the general binding rules to control diffuse pollution from agriculture are nitrates, organic pollution, pesticides, and phosphorus except in the North Sea RBD (no information) For these RBDs there are differentiated rules for different parts of the RBDs.

- Recommendation: *In addition to the basic measures, it should be set out clearly what supplementary measures will be needed to bridge the gap to good status and which of these measures will be included in the second PoMs and what funding sources will be used to deliver these.*

  Assessment: Funding will only be secured in Wallonia using Rural Development Funds. This recommendation is almost fulfilled.

- Recommendation: *Clear references to expectations for the Rural Development Programmes in this regard (and to other funding sources) are expected.*

  Assessment: This recommendation has been partially fulfilled as the Rural Development Programme is clearly mentioned as a funding source in the RBMPs of Wallonia. Other aspects of funding are also mentioned.

Topic 12 Measures related to pollution from sectors other than agriculture

12.1. Assessment of implementation and compliance with WFD requirements in second cycle

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. KTMs 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 measure but 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.

KTMs relevant to non-agricultural sources of pollution causing failure of WFD objectives have been reported for all Belgian RBDs. These KTMs include:

KTM1 - “Construction or upgrades of wastewater treatment plants”,

KTM4 - “Remediation of contaminated sites (historical pollution including sediments, groundwater, soil)”

KTM6 - “Improving hydromorphological conditions of water bodies other than longitudinal continuity”

KTM8 - “Water efficiency, technical measures for irrigation, industry, energy and households”

KTM9 - “Water pricing policy measures for the implementation of the recovery of cost of water services from households”

KTM10 - “Water pricing policy measures for the implementation of the recovery of cost of water services from industry”

KTM13 - “Drinking water protection measures (e.g. establishment of safeguard zones, buffer zones etc.)”

KTM16 – “Upgrades or improvements of industrial wastewater treatment plants (including farms)” and

KTM21 - “Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure”.

However, no information was provided on the links between KTMs and significant pressures or substances causing failure of good status for the Escaut RBD, the Meuse RBD, the Rhine RBD or the Seine RBD.

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) has been provided for the 4 Belgian RBDs first mentioned above. Quantitative information on types of basic measures to tackle pollution from non-agricultural sources is provided for nine measure types for those RBDs.

Belgium provided more targeted information on basic measures required under Article 11(3)(c to k):

Authorisation and/or permitting regimes to control waste water point source discharges are in place in seven out of eight Belgian RBDs for surface and groundwater. There is no authorisation and/or permitting regime in the North Sea RBD.

Registers of waste water discharges - basic measures Article 11(3)(g) - are available in all but one Belgian RBD (the Schelde and Maas RBDs for surface and groundwater; the other 5 RBDs for surface water only). There is no register of waste water discharges in the North Sea RBD, apparently because it includes only coastal SWB. Small wastewater discharges do not require permits but are all registered in the Escaut, Meuse, Rhine and Seine RBDs. Small discharges are exempted from controls in the Schelde and Maas RBDs. Belgium clarified that the discharge conditions in permits in the Scheldt (Brussels) RBD include values not to be exceeded. Legislative adaptations with changes in emission standards for industry, or specific sectoral emission standards, are planned. There is no permitting regime in the North Sea RBD.

There is prohibition of all direct discharges to groundwater in the Schelde and Maas[66]. Some direct discharges are authorised in accordance with Article 11(3)(j) in the other five Belgian RBDs.

There are measures in place to eliminate/reduce pollution from Priority Substances and other substances in all RBDs in Belgium.

[66] Belgium subsequently stated that a prohibition is also in place in the Escaut-Schelde (Brussels) RBD

12.2. Main changes in implementation and compliance since first cycle

In the first RBMP most of the measures related to chemical pollution were general rather than substance specific. The intention was that the existing inventories would serve as a basis for defining more substance specific measures in the next RBMP.

Information reported to WISE indicates that KTMs have been reported for significant pressures from Priority Substances causing inconsistency with WFD-objectives in 4 RBDs. For example in Flanders, the Priority Substances are being monitored and a detailed emissions inventory is being compiled, with concentrations in the water column, sediment and some substances also in the biota. In addition, the following measures are included under group 7B "pollution of surface waters": legislative adaptations with changes in emission standards for industry, new specific sectoral emission standards for Integrated Pollution Prevention and Control industries, and implementation of the 2013 Directive on Priority Substances[67]. In principle, all Priority Substances are covered in Flanders. This is the same for Wallonia and Brussels, where all Priority Substances have been covered/considered in the measures.

The Schelde RBMP contains specific measures to reduce the emissions of all River Basin Specific Pollutants; an overview is available linking the pollutants and measures available. This overview and linkage is not presented in the RBMPs for the Escaut-Scheldt RBD or the RBDs in the Wallonia region, but close examination of the Programmes of Measures shows that there are measures to reduce the emissions of all identified pollutants (this is formulated in a generic way, thus covering Priority Substances and River Basin Specific Pollutants) in those RBDs.

Measures for all those pollutants causing failure of good chemical status in groundwater are planned in the Schelde RBMP. General measures are included in the Escaut-Scheldt RBMP and those for the Wallonia region, probably covering groundwater pollutants. For example, for the Wallonia region, two groundwater bodies are in bad chemical status due to past or present industrial activities; measures to reduce groundwater pollution with focus on preventing leakage from installations and activities, and on surveillance. This is supported by legislative

[67] Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32013L0039

actions in Wallonia, for example, in the decree « permis d'environnement », and under the Industrial Emissions Directive.[68]

12.3. Progress with Commission recommendations

The Commission made one relevant recommendation based on the first RBMPs and first Programmes of Measures for this topic.

- Recommendation: *"The identification of river basin specific pollutants needs to be more transparent, with clear information on how pollutants were selected, how and where they were monitored, where there are exceedances and how such exceedances have been 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."*

  Assessment: Since no KTMs are reported for four of the eight RBDs in BE, it is not possible to fully assess the level of ambition. In those RBDs for which KTMs are reported, they are quite wide ranging and include efforts to control storm-water overflows. Thus, this recommendation is considered as partially fulfilled.

[68] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0075

Topic 13 Measures related to hydromorphology

13.1. Assessment of implementation and compliance with WFD requirements in second cycle

Significant hydromorphological pressures were reported in 5 out of 8 RBDs (no significant hydromorphological pressures were reported for the North Sea, Rhine or Seine RBDs in Wallonia).

For the majority of water bodies reported to have significant hydromorphological pressures, the driver is unknown/obsolete or indicated as "other", that is, not specified as one of the key sectors indicated in the WISE reporting. For few water bodies, the sectors related to the significant hydromorphological pressures are clearly indicated (navigation, flood protection, hydropower).

Operational KTMs were reported in all five RBDs with significant hydromorphological pressures. The main KTMs made operational to reduce hydromorphological pressures are KTM 5 – “Improving longitudinal continuity (for example, establishing fish passes, demolishing old dams)”, KTM 6 – “Improving hydromorphological conditions of water bodies other than longitudinal continuity”, and KTM 7 – “Improvements in flow regime and/or establishment of ecological flows”.

Overall management objectives and quantitative objectives in terms of river continuity have been set in six out of eight RBDs. However, KTM 5 – “Improving longitudinal continuity (for example, establishing fish passes, demolishing old dams)” was only reported for three RBDs, as indicated above.

The types of specific hydromorphological measures planned include fish ladders and bypass channels, sediment management, setting of ecological flows as well as other measures such as research.

In terms of basic measures, there is an authorisation and/or permitting regime in place to control physical modifications in all RBDs, according to WFD Article 11(3)(i). This regime covers changes to the riparian area of water bodies in seven of the eight RBDs. There is a register of physical modifications of water bodies only in two of the eight RBDs.

The design of new and existing structural measures, such as flood defences, storage dams and tidal barriers, were reported to have been adapted to take into account WFD objectives in seven out of eight RBDs (not adapted in the RBD North Sea).

Win-win measures in terms of achieving the objectives of the WFD and FD[69], drought management and use of Natural Water Retention Measures were reported to be included in the PoM of three out of eight RBDs. However, the specific KTM 23 – "Natural Water Retention Measures" is not applied to tackle significant pressures in any RBD.

In the Scheldt (Brussels) RBD, ecological flows have been derived for some relevant water bodies, but the work is still ongoing. This is seen as progress from the first cycle, where it was announced that a study of base flow values would be done. Ecological flows that have been derived have not been implemented, but there are plans to do this during the second cycle. For the other seven RBDs, ecological flows have not been derived for the relevant water bodies according to WISE, but there are plans to do it during the second cycle.

Indicators on the gap to be filled for significant hydromorphological pressures by 2021 and 2027 are not reported, why it is not possible to make any conclusions regarding the level of ambition in closing the gap. Also, for the KTMs, no indicator values were reported.

13.2. Main changes in implementation and compliance since first cycle

The links between measures, pressures, and uses have been made more obvious, because of the improved WISE reporting. Nevertheless, as in the first cycle, for the majority of hydromorphological pressures, the driver is unknown/obsolete or indicated as "other" that is not specified for the sectors given in the WISE reporting.

Concerning progress since the first cycle, in the RBDs of the Flanders region, successes have included measures related to fish migration for eel and solutions for several migration barriers. In the Scheldt (Brussels) RBD no measures to improve hydromorphology have been taken so far, so no conclusion is drawn. For RBDs in the Wallonia region, no specific information on success achieved in terms of hydromorphological measures is provided.

Concerning ecological flows, these have been derived in the Scheldt (Brussels) RBD for some relevant water bodies but the work is still ongoing. This is seen as progress from the first cycle, where it was announced that a study of base flow values would be done. According to the reporting, no ecological flows have been derived for relevant water bodies in the other regions.

[69] 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

13.3. Progress with Commission recommendations

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

- Recommendation: *All three regions (Brussels, Flanders, Wallonia): Include in the second RBMP the necessary hydromorphological measures to achieve good status, including those targeting the good ecological potential for heavily modified water bodies (to broaden the scope, make the designation process clearer and ensure the necessary budget).* .

  Assessment: Operational KTMs to address the significant hydromorphological pressures were reported in all five RBDs with significant hydromorphological pressures (RBD Scheldt in all three regions, and RBD Maas/Meuse in Wallonia and Flanders). Mitigation measures for defining good ecological potential have been reported in WISE, but no description of the ecological changes that these measures are designed to achieve could be found in the RBMPs. Concerning the funding of relevant measures, no complete assessment has been carried out; however, for the Meuse RBD (Wallonia), the costs of the measures are mentioned in the RBMP but it is unclear if the funding is secured to implement/operationalise them in the Wallonia region.

  Therefore, based on the information found, this recommendation is partially fulfilled.

Topic 14 Economic analysis and water pricing policies

14.1. Assessment of implementation and compliance with WFD requirements in second cycle and main changes in implementation and compliance since first cycle

Water services are defined differently in the Belgian RBDs. Information reported to WISE indicates that Article 9(4) is used, but very differently among the RBDs.

Summary cost recovery rates per water service are provided, even if the water services considered are different.

With the exception of Scheldt (Brussels), where agriculture is a marginal sector, industry, households and agriculture are defined as water users in each RBMP and the contribution of each user group to the cost recovery rates is provided.

The calculation/consideration/internalisation of environmental and resource costs also varies among the RBDs. For the two RBDs in the Flanders region, it was reported that environmental and resource costs are being covered by the taxes on groundwater abstraction and drinking water supply, but without further information on the calculation or level of environmental and resource costs. For the Scheldt, Maas and Scheldt (Brussels) RBDs, there is no explicit reference in the RBMPs on environmental and resource costs recovery, and no data on environmental and resource costs.

The economic analysis was reported as updated.

14.2. Progress with Commission recommendations

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

- Recommendation: *Integrate environmental and resource costs into cost recovery calculations for the second RBMPs.*

  Assessment: The calculation/consideration/internalization of environmental and resource costs varies among the RBDs. For those in the Flanders region, it was reported that environmental and resource costs are being covered by the taxes on groundwater abstraction and drinking water supply, but without further information on the calculation or level of environmental and resource costs. For the Scheldt, Maas and

Scheldt (Brussels) RBDs, there is no explicit reference in the RBMPs on environmental and resource costs recovery, and no data on environmental and resource costs.

- Recommendation: *As per Article 9 requirements, Flanders should present the calculation of contribution of different water uses disaggregated at least into households, industry and agriculture to cost recovery of water services. The cost-recovery should address a broad range of water services, as specified in the definition, 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 rates of cost recovery should be transparently presented by user sector, and environment and resource costs should be included in the costs recovered.*

  Assessment: Water services are defined differently in the Belgian RBDs. Some have water supply and sewage services combined, others separated. In Flanders, the water services are categorized as "others" in WISE. In the RBMPs, they are defined as public water supply, public sewage treatment, self-service water supply, and self-service sewage treatment. Self-services are not included in most RBDs, except in Flanders, where self-services for the treatment of waste water and for production are included, but without financial costs and environmental and resource costs (but indicating a financial cost recovery of 100 %).

  Information reported to WISE indicates that Article 9(4) is used, but very differently among the RBDs.

  Summary cost recovery rates per water service are provided, even if the water services considered are different.

  With the exception of Scheldt (Brussels), where agriculture is a marginal sector, industry, households and agriculture are defined as water users in each RBMP, and the contribution of each user group to the cost recovery rates is provided.

- Recommendation: *Flanders should provide precise information concerning the incentive function of water pricing policy, especially in the respect of application of metering, volumetric charging or efficiency promoting tariffs within different water uses.*

  In WISE, it is stated for Flanders that volumetric charging is applied to all water services, except for self-service sewage treatment.

Topic 15 Considerations specific to Protected Areas (identification, monitoring, objectives and measures)

15.1. Assessment of implementation and compliance with WFD requirements in second cycle

Belgium identified Protected Areas of all types associated with surface and groundwaters in the second second RBMPs, except sensitive areas designated under the Urban Waste Water Treatment Directive, which is justified as Belgium has applied the whole territory approach in the implementation of this Directive, and no specific protected area needs to be reported in this case[70,71]. Belgium did not report any protected areas for economically significant species (fish or shellfish).

Belgium also identified RAMSAR[72] sites in the Protected Area category 'other.' The number of Protected Areas is shown in Table 15.1.

[70] 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

[71] Belgium subsequently informed the Commission that a whole territory approach was taken to designation under the Urban Waste Water Treatment Directive. The entire territory of Flanders is designated as sensitive area (urban wastewater) and vulnerable zone (Nitrates directive) so no specific protected areas needed were reported for specific areas.

[72] Sites identified under the Ramsar Convention on Wetlands of International Importance - https://www.ramsar.org/about/the-ramsar-convention-and-its-mission

Table 15.1 Number of Protected Areas of all types in Belgium for surface and groundwater

Protected Area type	Number of Protected Areas associated with				
	Rivers	Lakes	Transitional[73]	Coastal	Groundwater
Abstraction of water intended for human consumption under Article 7	223	2			352
Recreational waters, including areas designated as bathing waters under the Bathing Water Directive[74]	37	2			
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 the Birds Directive[75]	202		1	3	172
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 Habitats Directive[76]	241		1	1	235
Nutrient-sensitive areas, including areas designated as vulnerable zones under the Nitrates Directive[77]	Whole territory	Whole territory	Whole territory	Whole territory	Whole territory
Areas designated for the protection of economically significant aquatic species					
Other	5				5

Source: WISE electronic reporting

[73] Belgium subsequently clarified that Flanders have reported protected area's designated under the Bird and habitat directive for transitional water

[74] 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

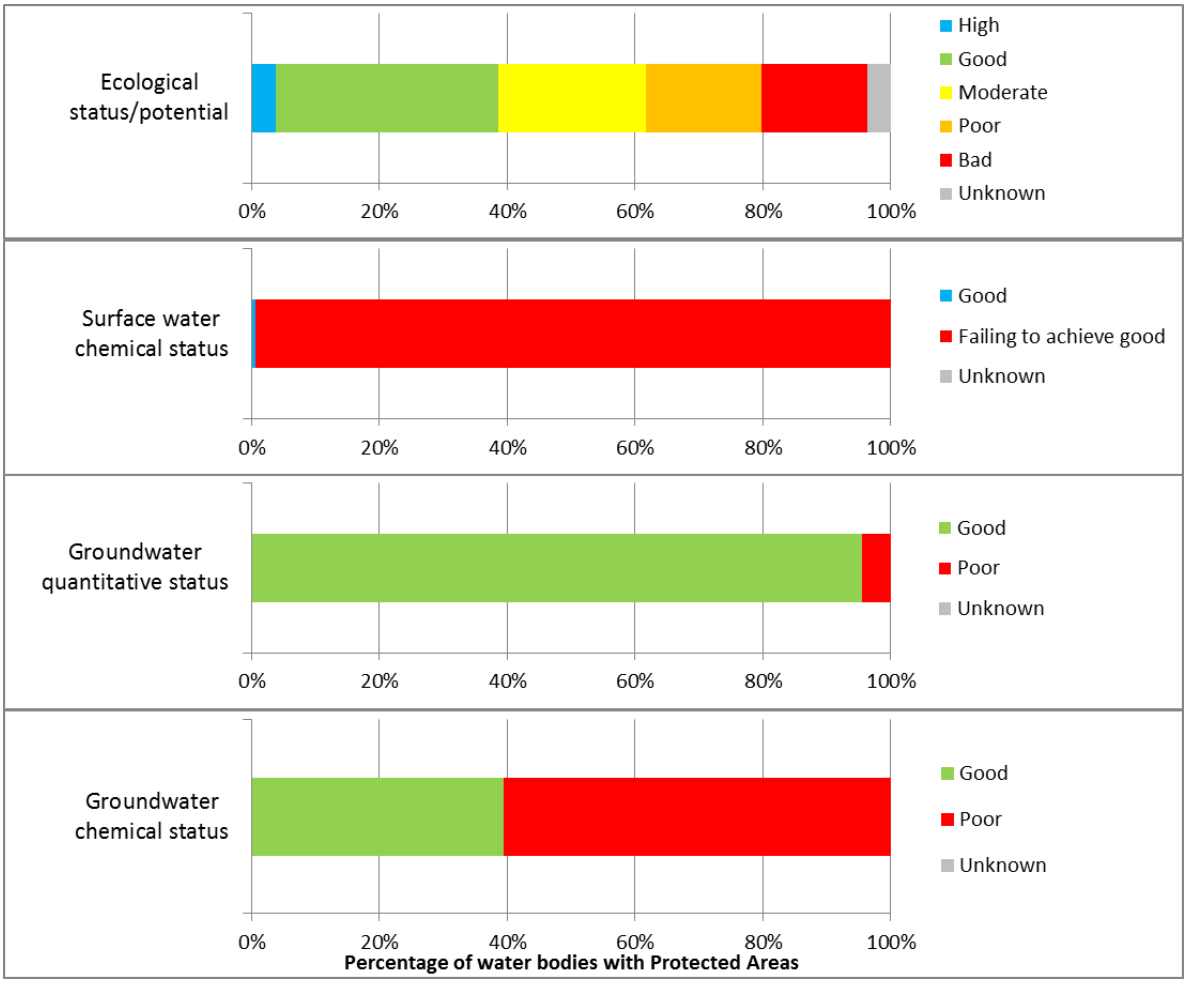
[75] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147

[76] 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

[77] 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

An overview of the status assessment of all water bodies within Protected Areas is shown in Figure 15.1. A high proportion of the classifications of ecological status have been assigned high confidence with widespread use of monitoring as the basis for the classification.

Figure 15.1 Status of water bodies associated with the Protected Areas report for Belgium. Note: based on status/potential aggregated for all water bodies associated with all Protected Areas



Source: WISE electronic reporting

For additional objectives, the situation differs depending on the type of the Protected Area. For the Habitats Directive, additional objectives have been set for approximately 25 % of the Protected Areas. For two-thirds of the Protected Areas, no specific water objectives have been set to protect dependent habitats and species, because the achievement of WFD good ecological status is sufficient to achieve favourable conservation status. For the remaining Protected Areas, no objectives have been set because the additional needs are not known.

For the Birds Directive, no specific objectives have been set because additional needs are not known for around half of the Protected Areas, for 21 % objectives have been set and, for the remaining 23 %, the achievement of the WFD objective is sufficient also to reach favourable conservation status.

For drinking water Protected Areas, the picture differs between surface water and groundwater abstraction. Specific objectives have only been set for 14 % of the surface water Protected Areas, whereas for groundwater areas it is 62 %.

For the other types of Protected Area, no information is provided on whether additional objectives have been set. Belgium reports some instances where additional objectives have been met and some where they have reported no information or where they were considered not-relevant.

Monitoring of surface waters has only been reported in relation to Article 7 for drinking water, Habitats, Nitrate and Urban Waste Water Directive related Protected Areas; and then only in rivers and not, for the few Protected Areas, in lakes and coastal waters[78]. No specific monitoring for Drinking Water, Bathing Water or Birds Protected Areas has been reported. Monitoring of Urban Waste Water Treatment Directive related Protected Areas was reported.

Monitoring of groundwaters was reported in relation to Article 7 drinking water, Nitrates and Habitats related Protected Areas; none was reported for Birds related Protected Areas.

Where monitoring is undertaken, the extent of the monitoring programme, in terms of the number of monitoring sites compared to the number of Protected Areas, is limited for drinking water in groundwaters and for habitats-related Protected Areas in rivers.

Table 15.2 Number of monitoring sites associated with Protected Areas in Belgium - Wallonia (reported information only available for the Walloon region)

Protected Area type	Number of monitoring sites associated with Protected Areas in				
	Groundwater	Rivers	Lakes	Transitional	Coastal
Abstraction of water intended for human consumption under Article 7	107		NR	NR	NR
Nutrient-sensitive areas, including areas designated as vulnerable zones under the Nitrates Directive	272	43	NR	NR	NR
Nutrient sensitive area under the Urban Waste Water		426	NR	NR	NR

[78] Belgium subsequently informed the Commission that this has been the case only for the Walloon region.

Treatment Directive - WFD Annex IV.1.iv[79]					
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 Habitats Directive	11	204	NR	NR	NR

Source: WISE electronic reporting
NR – Not reported to WISE

In the Scheldt and the Maas RBDs, safeguard zones are in place but there will be significant changes made as a result of the second RBMP. In the other four RBDs, there are safeguard zones, but there are no plans to change the regulations as a result of the second RBMP. Very little information can be found in the RBMPs about measures to be implemented in the safeguard zones – only some initiatives to reduce the impact of abstraction on habitats (reduce the abstracted amount of water).

No information was found in the RBMPs regarding measures to reach the additional objectives according to, for example, the Habitat or Birds Directives.

Exemptions to additional objectives have been applied for approximately 12 % of the habitat areas related to surface waters. Exemptions are justified by either disproportionate costs, natural conditions or technical feasibility.

For groundwaters, very few exemptions to additional objectives (<2 % of Article 7 drinking water Protected Areas) have been applied, these are justified by either disproportionate costs or natural conditions.

15.2. Main changes in implementation and compliance since first cycle

Belgium reported Protected Areas of all types in the first cycle including those for sensitive areas designated under the Urban Waste Water Treatment Directive and those for economically significant species (fish or shellfish) which were not reported for the second cycle.

Belgium subsequently informed the Commission that the spatial data of protected areas under other Directives (UWWTD, Habitats, etc.) had not been reported. However, Belgium has

[79] 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

included in the reporting of surface and groundwater bodies whether these are associated to any protected area.

For the Protected Areas common to both cycles, there was a significant increase in the number of Protected Areas reported for Article 7 Drinking Water (from 379 to 587), Habitats (from 263 to 499) and for Birds (from 218 to 386). For the remaining types, the numbers were similar.

In the second cycle, a groundwater monitoring programme for nitrate sensitive areas was reported for the first time. For the reported monitoring programmes common to both cycles, the scale of monitoring of groundwater Article 7 drinking water areas is reduced by half with the remainder at a comparable scale in terms of the number of monitoring sites[80].

Additional objectives for surface water Drinking Water Protected Areas and Protected Areas under the Habitats and Birds Directives, and the RAMSAR Convention were set in some RBDs in the first cycle and, for drinking water and Habitats areas, these are also set in the second cycle. In both cycles, for some Habitats areas, the default objective of good status is considered sufficient, although it has not been assessed in detail.

The use of additional measures in relation to Article 7 Drinking Water Protected Areas is comparable between cycles with indications for some areas that safeguard zones will change and in others that they will not in both cycles.

Exemptions to additional objectives for Protected Areas have been applied for the first time in the second cycle.

15.3. Progress with Commission recommendations

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

- Recommendation: *Include in the second RBMPs additional objectives for protected areas and measures to achieve these objectives.*

  Assessment: For all Protected Areas related to the Habitats Directive (both surface water and groundwater dependent areas), it has been reported that either specific objectives have been set, or that the good ecological status is assumed to be sufficient

[80] Belgium subsequently informed the Commission that this has been the case only for the Walloon region.

to meet the objectives of other Directives. For a few areas, objectives have not been set because the needs are not known.

For surface water Protected Areas, related to the Birds Directive more than 90% of Protected Areas do not have specific objectives because the additional needs are not known.

For Drinking Water Protected Areas (abstraction from surface water), specific objectives have only been set in second RBDs representing approximately 15% of the total number of drinking water areas. For the remaining areas, no objectives have been set.

For groundwater dependent Birds and Habitats related Protected Areas, the same differentiated approach as for surface water has been applied. It should be noted that for all areas with a specific objective, the objective is also met.

No information was reported about specific objectives for the Bathing Water Directive.

The RBDs have not reported any information about the implementation of measures to reach the additional objectives set[81].

The recommendation has been partially fulfilled as objectives have been set, but not for all Protected Areas (needs not known) or have been set but work is still on-going to determine the needs. This is probably also the reason why no additional measures have been included.

[81] Belgium subsequently clarified that no additional objectives have been set but in some cases measures specific to protected areas are in place, as detailed in the RBMP for Scheldt Brussels and the Flemish Programme of Measures which contains measures for both groundwater and surface water.

Topic 16 Adaptation to drought and climate change

16.1. Assessment of implementation and compliance with WFD requirements in second cycle

Climate change was considered only in the Scheldt (Brussels), Maas, and Scheldt RBDs but it is stated that the guidance on how to adapt to climate change (Common Implementation Strategy Guidance Document No. 24[82]) was only used in the Maas and the Scheldt RBDs. Climate change aspects have been considered in flood risk management in all RBDs. Climate change in relation to drought management and water scarcity has been considered in the Maas and Scheldt RBDs. Detecting climate change signals is an issue in the Scheldt (Brussels) RBD. KTM 24 – "Adaptation to climate change" is not applied[83]. No specific sub-plans addressing climate change were reported for Belgium[84]. According to the 2012 Topic report on: Assessment of Water Scarcity and Drought aspects in a selection of European Union RBMPs[85], droughts are not relevant for Belgium and no exemptions have been applied 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. No Drought Management Plan has been reported for Belgium in the second cycle.

16.2. Main changes in implementation and compliance since first cycle

For climate change, no significant changes have been identified.

The situation on whether Drought Management Plans are in place in Belgium is unclear. These were not reported to WISE for the second cycle.

16.3. Progress with Commission recommendations

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

[82] 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
[83] Belgium subsequently clarified, that Wallonia did use the KTM 24 for its 4 RBMPs.
[84] Member State Belgium subsequently clarified, that Energy Air Climate Plan was applicable in Brussels, but was not reported in the WFD context.
[85] http://ec.europa.eu/environment/water/quantity/pdf/Assessment%20WSD.pdf