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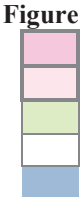
List of acronyms

AWB	Artificial Water Body
BQE	Biological Quality Element
CW	Coastal waters
CWB	Coastal Water Bodies
DMP	Drought Management Plans
DWPA	Drinking Water Protected Areas
Eflows	Ecological flows
GEP	Good Ecological Potential
GWB	Groundwater Bodies
HMWB	Heavily Modified Water Body
IPH	Instrucción de Planificación Hidrológica (Hydrological Planning Instruction)
LSO	Less Stringent Objectives
LW	Lakes
LWB	Lake Water Bodies
PA	Protected area
PoM	Programme of Measures
QE	Quality Element
RBD	River Basin District
RBMP	River Basin Management Plan
RPH	Reglamento de Planificación Hidrológica (Hydrological Planning Regulation)
RW	Rivers
RWB	River Water Bodies
SEA	Strategic Environmental Assessment
SWB	Surface Water Bodies
TW	Transitional waters
TWB	Transitional Water Bodies
WFD	Water Framework Directive
WISE	Water Information System for Europe

1 GENERAL INFORMATION

Figure 1.1: Map of River Basin Districts



International River Basin Districts (within EU)
International River Basin Districts (outside EU)
National River Basin Districts (within EU)
Countries (outside EU)
Coastal Waters

Source: WISE, Eurostat (country borders)

The transposition of the WFD (Directive 2000/60/EC) into Spanish law was made by Article 129 of Law 62/2003 regarding fiscal, administrative and social measures (Spanish Official Gazette (BOE) No. 313 of 31 December 2003) which amended the consolidated text of the Water Act, approved by Royal Legislative Decree 1/2001. A number of minor regulations closed transposition gaps and enabled the planning process in the first cycle. In this context, the following Royal Decrees (RDs) are of relevance:

- Regulation of Hydrological Planning (Reglamento de Planificación Hidrológica (RPH) (Real Decreto 907/2007, de 6 julio, por el que se aprueba el Reglamento de la Planificación Hidrológica, BOE 07-07-2007); and its subsequent modification by RD 1161/2010 de 17 de septiembre).

- Definition of the limits of River Basin Districts (RBDs) (by RD 125/2007, de 2 de febrero, que fija el ámbito territorial de las demarcaciones hidrográficas (artículo 16 bis 5 del TRLA)).

- Competent Authorities (RD 126/2007, de 2 de febrero, que regula la composición, funcionamiento y atribuciones de los Comités de Autoridades Competentes de las demarcaciones hidrográficas con cuencas intercomunitarias (artículo 36 bis del TRLA)).

The Ministerial Order for Hydrological Planning (ORDEN ARM/2656/2008 sobre Instrucción de Planificación Hidrológica (IPH)) is a complementary intra-ministerial regulation tool that defines precisely the procedures for the planning process and other substantial obligations such as the conditions for granting exceptions and the monitoring and classification of the ecological and chemical status of surface waters. However, the IPH applies only –to rivers that flow through different regions[1] (ES010, ES017, ES018, ES020, ES030, ES040, ES050, ES070, ES080, ES091), and not to rivers that are completely within the territory of one region[2] (ES014, ES060, ES063, ES064, ES100, ES110 and ES12X). This is due to the distribution of competences between State and regions established by the Spanish Constitution (Articles 149.1.22 and 148.1.10), where catchments shared by more than one Region are the exclusive competence of the State, and intra-community catchments are the exclusive competence of the Regions. National Laws and Decrees are considered (in full or in part) as basic rules that apply across the country, but Ministerial Orders do not bind Regions. Additional legislation at Regional level is therefore needed to ensure that Spanish legislation fully complies with the Directive[3]. Nevertheless, the IPH has been used as a "guidance document" in the development of intra-community RBMPs. Further guidance documents have been developed and are either available as draft or final versions, both at National or Regional levels, in particular for ES100.

At Regional level, several Water Laws have been approved in the past decade to adapt legislation to comply with the WFD, including Catalonia (2003), Basque Country (2006), Andalusia (2010) and Galicia (2010 and 2015).

Spain has a long track record of water quantity focused Hydrological Planning, aimed at ensuring adequate water supply for existing and future demands. This process delivered RBMPs for all RBDs (different from the current delimitation) in the late 1990s, plus a National Hydrological Plan approved in 2001. This Plan was partially derogated (Ebro-Segura inter-basin transfer) in 2004.

[1] Called inter-community RBDs.

[2] Called intra-community RBDs.

[3] On this subject see judgement of the EU Court of Justice of 24 October 2013 on case C-512/12 available at http://curia.europa.eu/juris/liste.jsf?language=en&num=C-151/12

RBD	Name	Size (km^2)*	Countries sharing borders
ES010	Minho-Sil	17619	PT
ES014	Galician Coast	12988	-
ES017	Cantábrico Oriental	6405	FR
ES018	Cantábrico Occidental	19002	-
ES020	Duero	78889	PT
ES030	Tagus	55781	PT
ES040	Guadiana	55528	PT
ES050	Guadalquivir	57228	-
ES060	Andalusia Mediterranean Basins	20010	-
ES063	Guadalete and Barbate	5969	-
ES064	Tinto, Odiel and Piedras	4729	-
ES070	Segura	19025	-
ES080	Jucar	42735	-
ES091	Ebro	85570	AD, FR
ES100	Internal Basins of Catalonia	16438	FR
ES110	Balearic Islands	4968	-
ES120	Gran Canaria	1558	-
ES122	Fuerteventura	1660	-
ES123	Lanzarote	836	-
ES124	Tenerife	2033	-
ES125	La Palma	706	-
ES126	La Gomera	370	-
ES127	El Hierro	269	-
ES150	Ceuta	20	MA
ES160	Melilla	24	MA

Table 1.1: Overview of Spain's River Basin Districts
* Area in Spanish territory.
Source: WISE, River Basin Management Plans and information provided by Spain (2014)[4]

[4] References to 'information provided by Spain in 2014' in this document relate to information received in the context of the bilateral meeting held between the Commission services and the Spanish authorities on 10 November 2014 and its follow-up.

Name international river basin	National RBD	Countries sharing borders	Co-ordination category			
			2		4	
			km²	%	km²	%
Miño/Minho	ES010	PT	16226	95.0		
Duero/Douro	ES020	PT	78859	80.7		
Guadiana	ES040	PT	55454	82.7		
Ebro	ES091	AD, FR	85534	99		
Segre (Sub-Basin Ebro/Rhone)	ES091	AD, FR	18750	95.2		
Catalan	ES100	FR	16438	99,9		
Lima/Limia	ES010	PT	1326	52.9		
Tajo/Tejo	ES030	PT	55772	78.3		
Garonne	ES017/ES091	FR	555	0.7		
Nive (Sub-Basin Adour-Garonne RBD)	ES017	FR	121	19.0		
Nivelle (Sub-Basin Adour-Garonne RBD)	ES017	FR	70	12.0		
Bidasoa (Sub-Basin Adour-Garonne RBD)	ES017	FR	689	97.0		
Ceuta	ES150	MA			20	100
Melilla	ES160	MA			24	100

Table 1.2: Transboundary river basins by category (see CSWD section 8.1) and % share in Spain[5]
Category 1: Co-operation agreement, co-operation body, RBMP in place.
Category 2: Co-operation agreement, co-operation body in place.
Category 3: Co-operation agreement in place.
Category 4: No co-operation formalised.
Source: EC Comparative study of pressures and measures in the major river basin management plans in the EU, and Information provided by Spain.

Regarding the shared catchments with other MS/third countries, the following overview information can be provided:

- With Portugal – Miño (ES010), Duero (ES020), Tagus (ES030) and Guadiana (ES040); regulated by the Albufeira Convention[6].

- With France – Cantábrico Oriental (ES017), Ebro (ES091) and Catalonia (ES100). Since 2003 annual co-ordination meetings have taken place, and since 2006 the Toulouse Agreement is in place according to Art 3 WFD. ES017 provides information that there is no need to establish a common international RBMP. A Co-ordination Committee for the follow-up of the WFD implementation and water management in transboundary rivers is in place.

- With Andorra – Ebro (ES091).

- With Morocco – Ceuta (ES150) and Melilla (ES160).

[5] Categorisation determined under the EC Comparative study of pressures and measures in the major river basin management plans in the EU (Task 1b: International co-ordination mechanisms).

[6] http://www.cadc-albufeira.eu/

2 STATUS OF REPORTING AND COMPLIANCE

At the time of compiling this report, Spain has adopted and reported the following 18 RBMPs to the European Commission (by year of adoption): ES100 (2011); ES014, ES060, ES063 and ES064 (2012); ES010, ES017, ES018, ES020, ES040, ES050, ES110, ES150, and ES160 (2013); and ES030, ES070, ES080 and ES091 (2014)[7]. RBMPs have not yet been adopted (December 2014) for the following 7 RBDs: ES120, ES122, ES123, ES124, ES125, ES126 and ES127. Full details are provided in the following table.

RBD	RBMP Date of Adoption	RBMP Date of Reporting
ES010	19/04/2013	28/06/2013
ES014	14/09/2012	28/06/2013
ES017	07/06/2013	12/02/2014
ES018	07/06/2013	21/10/2013
ES020	21/06/2013	15/11/2013
ES030	11/04/2014	03/11/2014
ES040	17/05/2013	01/07/2013
ES050	17/05/2013	16/07/2013
ES060	14/09/2012	01/08/2013
ES063	14/09/2012	01/08/2013
ES064	14/09/2012	28/06/2013
ES070	11/07/2014	20/10/2014
ES080	11/07/2014	05/11/2014
ES091	28/02/2014	30/10/2014
ES100	05/09/2011[8]	24/02/2014
ES110	06/09/2013	17/10/2014
ES120	Not yet adopted	
ES122	Not yet adopted	
ES123	Not yet adopted	
ES124	Not yet adopted	
ES125	Not yet adopted	
ES126	Not yet adopted	
ES127	Not yet adopted	
ES150	27/09/2013	29/10/2014
ES160	27/09/2013	29/10/2014

Table 2.1: Adoption and reporting to the Commission of Spain's RBMPs.
Source: RBMPs, Official Public Gazette and River Basin Autorities' websites, WISE and Information provided by Spain (2014).

[7] A full list is provided at: http://www.magrama.gob.es/es/agua/temas/planificacion-hidrologica/planificacion-hidrologica/planes-cuenca/default.aspx

[8] The ES100 plan was definitely adopted by a royal decree on 5 September 2011 and published in the Spanish Official Gazette (BOE) on 22 September 2011. Afterwards the decree approving the Catalan RBMP was annulled by the High Court of Catalonia on 16 May 2013 on procedural grounds. The RBMP and the PoMs were adopted again by the Regional Government on 23 December 2014. Adoption by the National Government is pending.

A summary of the main strengths and weaknesses of the Spanish RBMPs is presented below:

2.1 Main strengths

- There has been an extensive technical work carried out by the river basin authorities in the preparation of the RBMPs.
- The RBMPs are complete and structured documents, which generally include numerous annexes with a significant amount of detailed information and background documents.
- Quantitative aspects are considered, with water balances done for each RBD and ecological flows calculated for many river stretches.
- Significant efforts have been made to ensure a broad public participation in the process of development of the RBMP.
- All RBMPs have gone through a strategic environmental assessment.

2.2 Main weaknesses

- The late approval of RBMPs[9] (Canary Islands not approved yet – December 2014). Spain should ensure the timely adoption of the next RBMPs.
- Further work is needed to ensure WFD is fully transposed in all intra-community RBDs.
- The gaps on characterisation, the deficiencies in monitoring programmes and in the status assessment methods have resulted in an important number of water bodies with unreliable or unknown status. This undermines the whole planning process and compromises the definition of the necessary measures and the achievement of environmental objectives. Furthermore, environmental objectives are missing for a relatively high number of water bodies, or are delayed until 3rd planning cycle (2027) without proper justification.
- Quantitative management of water is linked to quality objectives through the establishment of ecological flows in many river stretches, but these are generally not clearly linked to the achievement of good status.
- High number of new infrastructure projects are planned, but the conditions for application of exemptions (WFD Article 4(7)) have not been included in the RBMPs and the potential impacts on the status are generally not reflected in the environmental objectives of water bodies.
- Cost recovery instruments have not been adapted to the WFD requirements. As a consequence, there is a lack of adequate incentives for efficient use of the resource and the adequate contribution to the recovery from different users is not guaranteed. Environmental and resource costs are high but not included in the recovery. River basin authorities do not have sufficient resources to exert an effective control of water uses in the RBDs.
- Despite its importance for management and planning purposes, the register of water abstractions is not yet completed in Spain. Metering of water uses should be generalised.

[9] On this subject see judgement of the EU Court of Justice of 4 October 2012 on case C-403/11 available at http://curia.europa.eu/juris/liste.jsf?language=en&jur=C,T,F&num=C-403/11&td=ALL

- The consideration of water dependent protected areas should be improved. Specific objectives, monitoring and measures need to be included in the RBMPs in order to ensure the favourable conservation status of water-dependent protected habitats and species.

3 GOVERNANCE

3.1 River Basin Management Plans (RBMPs) – Structure, completeness, legal status

RBMPs are adopted by the Government through a Royal Decree, which is published in the Spanish Official Gazette, except for the Canary Islands (RBDs ES12X), for which the RBMPs are finally adopted by a Decree of the regional government. Regionally-managed RBDs are preceded by approval by the Regional Government. The legal part of the RBMPs is therefore binding for third parties.

The RBMPs consist of a package of documents including the main text (several hundreds of pages), and a varying number and length of Annexes and Appendices, that sometimes include preparatory or background documents (e.g. detailed characterisation studies of certain groundwater bodies (GWB)), thus often amounting several thousands of pages. They are usually well structured, with different degrees of technical detail between the main text and the Appendices.

Nonetheless, some information is missing or has not been identified in the screening assessment of some of the RBMPs, such as the result of the public consultation and its integration in the RBMP; links between pressures, objectives and measures; information at water body level (pressures, status, objectives and measures); or the results of the tasks/studies carried out (e.g. status classification by different quality elements, modelling exercises, cost-effectiveness analysis).

3.2 Consultation

Though Spain had previous experience in managing water at the river basin level and establishing RBMPs, the WFD process started late in all RBDs.

The establishment of RBDs and competent authorities (due in 2003) was done late and the Commission took Spain to Court[10]. The case was not closed until 2011.

Table 3.2.1 provides an overview of the dates of the WFD Article 14 consultation steps and the dates of adoption of the RBMPs. The dates reflect the delay in implementation in respect to the deadlines foreseen in the WFD.

Regarding the publication of the final RBMPs, the first plan (ES100) was formally approved on 02/09/2011, almost 2 years late compared to the deadlines set in the WFD (December 2009). The rest of the RMPs have been approved since then, with increasing delay regarding the deadlines and the public consultation process (more than 2 years difference in many cases). The adoption of the Canary Islands RBMPs (ES12X) is still pending at the time of finalising this report (December 2014).

[10] On this subject see judgement of the EU Court of Justice of 7 May 2009 on case C-516/07 available at http://curia.europa.eu/juris/liste.jsf?language=en&jur=C,T,F&num=c-516/07&td=ALL

RBD	Timetable, work programme and statement on consultation measures	Significant water management issues	Draft RBMP	Final adoption RBMP
Due dates	**22/12/2006**	**22/12/2007**	**22/12/2008**	**22/12/2009**
ES010	26/07/2007	31/07/2008	15/12/2010	19/04/2013
ES014	28/04/2008	28/01/2009	20/08/2010	14/09/2012
ES017	26/07/2007	31/07/2008	04/05/2011	07/06/2013
ES018	26/07/2007	31/07/2008	04/05/2011	07/06/2013
ES020	26/07/2007	31/07/2008	15/12/2010	21/06/2013
ES030	26/07/2007	31/07/2008	20/03/2013	11/04/2014
ES040	26/07/2007	31/07/2008	25/05/2011	17/05/2013
ES050	26/07/2007	31/07/2008	15/12/2010	17/05/2013
ES060	02/07/2008	28/05/2009	22/05/2010	14/09/2012
ES063	01/02/2008 and 22/05/2010	28/05/2009	22/05/2010	14/09/2012
ES064	01/02/2008 and 22/05/2010	28/05/2009	22/05/2010	14/09/2012
ES070	26/07/2007	31/07/2008	07/06/2013	11/07/2014
ES080	26/07/2007	18/12/2009	07/08/2013	11/07/2014
ES091	26/07/2007	31/07/2008	12/05/2012	28/02/2014
ES100	01/11/2006	01/12/2007	16/12/2009	02/09/2011
ES110	10/2006	06/2007	01/09/2008 09/11/2011	06/09/2013
ES120	03/2009	21/12/2009	10/10/2013	
ES122	25/12/2009		04/12/2013	
ES123	20/05/2009		09/10/2013	
ES124			05/05/2010	
ES125	28/11/2008	22/05/2010	07/08/2012	
ES126	12/03/2009	15/05/2012	09/08/2013	
ES127	18/12/2009	2011	15/12/2012	
ES150	30/10/2012	01/12/2012	28/12/2012	27/09/2013
ES160	30/10/2012	30/11/2012	28/12/2012	27/09/2013

Table 3.2.1: Timeline of the different steps of the consultation process
Source: WISE, RBMPs and ES websites and Information provided by Spain (2014). Note that the dRBMP ES110 has been consulted twice.

Though the timing of consultation has in general been delayed, all RBMPs have respected the 6 months required length of consultation during the drafting process. All RBMPs provide details of the consultation process, and some (e.g. ES100, ES010, ES020, ES050, ES080) publish also overviews and summary data on the key impact of public consultation on the contents of the RBMP. During the consultation, usually several hundreds of formal comments have been received on the consulted documents, and many plans provide a sub-classification of items within each of the comments. Some RBMPs (e.g. ES080, ES100) provide a clear and transparent response on whether and how each individual comment has been integrated within the plans, but others do not.

During the RBMP drafting process, many RBDs started significant processes of active involvement directed at the public (e.g. brochures, campaigns), stakeholders (geographical, sector or topic

workshops) and other meetings. The efforts in ES091 to develop events at local level and in ES100 to draft plans/PoMs at river-stretch level should be noted.

Some RBMPs (e.g. ES091, ES110 – with two consultation periods) have significantly changed the content of their draft versions, and changes in information, criteria and text have been reported for several RBMPs, though not necessarily documented in WISE or corresponding summaries (e.g. ES020).

All RBMPs have undergone a SEA process.

In addition to the formal public consultation, the Spanish legislation foresees a number of consultation and decision making steps before adoption of the RBMPs. The Committee of Competent Authorities[11], aimed at promoting co-operation between national, regional and local organisations in the application of the WFD, approves the RBMPs before submission to the RBD Water Advisory Boards for their opinion. These RBD Boards are composed by representatives of authorities, water users and stakeholders[12]. It should be noted that despite a majority supporting the plans, significant votes against the RBMPs occurred in ES050 (by the Regional Government of Andalusia) and ES091 (by the Regional Government of Catalonia) at the respective RBD Board meetings (see Figure 3.2.1). Reports of the Board meetings are neither included in the RBMPs nor available at the RBDs websites.

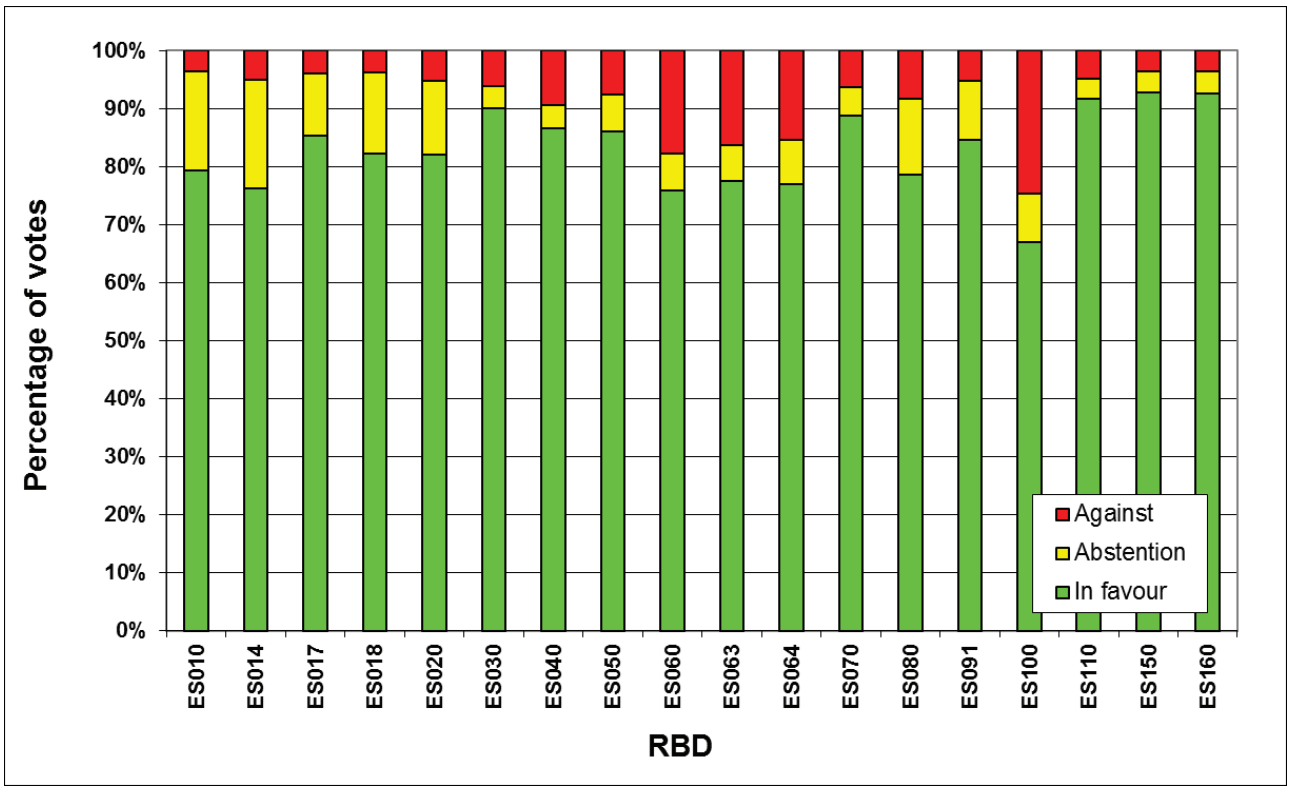


Figure 3.2.1: Support within the National Water Advisory Board to RBMPs
Source: Information provided by Spain (2014).

[11] As a result of the ruling of the European Court of Justice of 7 May 2009, Royal Decree 29/2011 created an additional coordination body for the purpose of elaborating the RBMP for the Cantábrico Oriental RBD ES017, composed of representatives of Central Administration and Basque Country regional Administration.

[12] There is also a National Water Advisory Board which informs the plans before adoption by the Government.

4 CHARACTERISATION OF RIVER BASIN DISTRICTS

4.1 Typology of Surface Water

The general methodology for the establishment of types and reference conditions has been regulated by the IPH (section 2.2.1.3 and 2.2.1.4 and Annexes II and III) following a spatially-based technical proposal by Spanish Research Centre CEDEX. The IPH establishes 32 river types, 30 lake types, 13 transitional water types and 20 coastal water types.

Additional types have been established by River Basin Authorities (RBAs) (e.g. coastal types in ES070 and river types in ES110 - this latter still in process). The following number of surface water (SW) types has been considered in the RBMPs:

RBD	Rivers	Lakes	Transitional	Coastal
ES010	9	3	1	1
ES014	7	0	3	7
ES017	6	3	3	1
ES018	12	5	6	3
ES020	17	7		
ES030	27	8		
ES040	14	12	1	2
ES050	17	12	3	2
ES060	13	7	4	4
ES063	7	4	2	3
ES064	6	1	3	2
ES070	10	4	2	5
ES080	12	7	2	6
ES091	9	19	2	1
ES100	15	12	3	8
ES110	2	0	4	4
ES120	0	0	0	
ES122	0	0	0	
ES123	0	0	0	
ES124	0	0	0	
ES125	0	0	0	
ES126	0	0	0	
ES127	0	0	0	
ES150	0	0	0	2
ES160	1	0	0	2
Sum	*32*	*30*	*13*	*21*

Table 4.2.1: Surface water body types at RBD level
Source: WISE and Information provided by Spain.

For river type water bodies, system B has been chosen for all categories based on a variety of data (hydrological, geological, physical, climatic, etc.) and it is not clear if they have been tested against biological data. Occasionally, system A has also been used.

Tabulated values for reference conditions and class boundaries have been established by the IPH for rivers but not for all surface water body types. The IPH does not include values for lake and transitional water body types[13]. It is also unclear how the IPH reference conditions and class boundaries have been established. After the IPH approval, the Spanish Ministry of the Environment carried out complementary work to preliminarily establish reference conditions for additional types.

4.2 Delineation of Surface Water Bodies

General criteria for the delineation of water bodies are also included in the IPH (section 2.2.1.1), again based on work performed by CEDEX (river and lake water categories). Each RBD has applied the criteria depending on its particular conditions.

The following overview table 4.3.1 gives information on the number of water bodies. ES122 and ES123 share a common coastal water body (Eastern Islands), but this has only be assigned to ES122 in the table 4.3.1 (and in the following ones) to avoid double counting.

[13] Spain informed in 2014 that some RBDs have developed reference conditions and class boundaries for additional quality elements.

RBD	Surface Water								Groundwater	
	Rivers		Lakes		Transitional		Coastal			
	Number	Average Length (km)	Number	Average Area (sq km)	Number	Average Area (sq km)	Number	Average Area (sq km)	Number	Average Area (sq km)
ES010	270	16.49	3	0.48	4	6.33	1	15.98	6	2934.1
ES014	411	10.63	0	0	22	4.77	29	110.26	18	729.5
ES017	109	14.23	11	0.41	14	3.46	4	144.43	28	205.0
ES018	250	15.39	7	0.23	21	4.37	15	103.75	20	693.6
ES020	696	19.95	14	0.89					64	1232.6
ES030	308	29.44	16	0.95					24	910.1
ES040	249	35.95	58	1.05	4	12.85	2	31.31	20	1124.1
ES050	392	27.68	35	27.11	13	10.64	3	163.56	60	624.6
ES060	133	16.79	8	2.59	7	2.14	27	76.53	67	155.2
ES063	65	17.19	10	0.23	10	12.26	12	44.65	14	304.5
ES064	48	19.57	5	0.25	11	14.33	4	43.69	4	257.5
ES070	90	19.13	6	6.39	1	25.17	17	71.13	63	243.8
ES080	304	18.60	19	2.22	4	3.69	22	97.09	90	453.6
ES091	700	19.10	110	0.74	8	19.42	3	103.40	105	521.5
ES100	261	15.28	27	0.15	25	0.08	33	48.47	39	288.6
ES110	94	6.16	0	0	36	1.23	42	89.18	90	52.6
ES120	0	0	0	0	0	0	6	549.90	10	155.8
ES122	0	0	0	0	0	0	5	444.70	4	413.2
ES123	0	0	0	0	0	0	6	375.70	1	846.1
ES124	0	0	0	0	0	0	11	72.68	4	508.2
ES125	0	0	0	0	0	0	5	55.00	5	142.0
ES126	0	0	0	0	0	0	4	41.00	5	73.6
ES127	0	0	0	0	0	0	3	261.48	3	89.7
ES150	0	0	0	0	0	0	3	13.48	1	11.2
ES160	1	5.35	0	0	0	0	3	3.54	3	5.0
Total	**4.381**	**19.76**	**329**	**3.76**	**180**	**5.54**	**260**	**105.88**	**748**	**482.8**

Table 4.3.1: Surface water bodies, groundwater bodies and their dimensions
Source: WISE, RBMPs and information provided by Spain (2014).

Spain has delineated 4,381 River Water Bodies (RWB), 329 Lake Water Bodies (LWB), 180 Transitional Water Bodies (TWB) and 260 Coastal Water Bodies (CWB). The average length of RWB is 19 km, and the average surface of LWB is 3 km^2, of TWB 5 km^2 and of CWB 105 km^2. Significant larger averages have been identified for RWBs in ES030, ES040 and ES050. The reasons for such differences are not clear.

Spain has delineated 748 GWB, with an average size of 482 km^2; a significantly larger average size has been applied in ES010. The reasons for these differences are not clear.

The minimum size of small water bodies has been set at 5 km length for RWB, 0.5 km^2 for LWB (or 0.08 km^2 if the lake is deeper than 3 metres, or whatever dimensions if protected in the Ramsar list), 0.5 km^2 for TWB and 5 km length of coastline for CWB.

Following the National CEDEX guidance, minor lakes are frequently aggregated to conform a LWB (e.g. lagoon complex), thus reflecting much better the large number of small LWB in Spain. Similarly, small river stretches of different typology may be added to connecting larger ones.

In the case of TWB, limits are established following geographical parameters (public coastal maritime domain), but consider also chemical aspects such as the salinity gradient in the river, and the penetration of freshwater into the sea, and other criteria associated with the description of the status of the TWB.

4.3 Identification of significant pressures and impacts

The identification of the pressures and impacts of human activity on water bodies was done for the first time in the context of the IMPRESS study on the basis of the "Guidance to identifying pressures and impact analysis in surface waters (2005)" (hereinafter in this chapter referred to as the Guidance). This study included the identification and the assessment of pressures and impacts associated with point and non-point pollution, significant water withdrawals and returns, regulation works, hydromorphological alterations, and other significant anthropogenic impacts on water bodies. The approach relied first on a qualitative assessment and, in a second stage, on a quantitative assessment based on a simplified model. The objective of this study was to identify the water bodies at risk of failing the WFD environmental objectives.

For the purpose of the qualitative assessment, the Guidance included thresholds of significance for the various pressure categories. The impact was estimated or measured and assessed as "confirmed" "probable", "no impact" or "no data". On this basis the final assessment of risk of failing environmental objectives was established, which depended on the characteristics of each water body.

The 2008 IPH[14], on the basis of which the RBMPs were to be developed, included further thresholds for the purpose of including a comprehensive inventory of pressures in the RBMPs. The link to significance in terms of risk, however, is no longer evident, as there is no reference to impact or risk assessment in the IPH. Indeed the Spanish legislation (RPH, IPH) does not require for surface water the identification of water bodies at risk of failing the environmental objectives due to significant pressures. According to the WFD this risk assessment should be based on all available information on pressures, impacts and status as well as trends in the water uses. The result of this assessment should then be used to inform the design of the monitoring programmes and the programmes of measures. The risk assessment is essential to complement the information on status

[14] It is not clear to what extent the Guidance and the IPH was used in intra-community RBDs.

gathered in the previous cycle, to identify potential risk of deterioration of water bodies due to increasing pressures and to target effectively the monitoring efforts.

Abstractions larger than 20000 m^3/yr are defined as significant. Cumulative abstractions in rivers are being dealt with by assessing upstream abstractions compared with natural flows, considering a 40% (or other RBD-specific) threshold as significant. Prolonged drought periods are considered as the natural flow is calculated using long term averages.

Thresholds for the inventory of hydromorphological pressures (dams, transfers, dikes, etc.) are defined in the IPH. Other pressures like the introduction of invasive species, polluted sediments, or land drainage (or angling, recreation, ES020) are listed for identification, but no guidance is given for when considering them as "significant" pressures and they are judged on a case by case basis at RBD level.

The IPH establishes a list of categories of point and diffuse sources that need to be included in the inventory. Thresholds are provided for a few of these categories (for example discharges from aquaculture facilities larger than 100000 m^3/yr)[15]. Criteria for the main diffuse sources are generally not given in the IPH, but have been defined by each RBMPs. However, the method used to establish the significance is not clear.

In general, for the preparation of the RBMPs, and in order to consider cumulative effects, the inventory of pressures was used as input for modelling tools.

The identification of (significant) impacts is generally well linked to pressures (e.g. water uses) when dealing with water abstractions and point source pollution, and some plans provide comprehensive overviews on all pressures related to water bodies (e.g. ES080). In the case of diffuse pollution (e.g. ES070) or hydromorphological alterations (e.g. ES030, ES070), the picture is often more complicated, and no clear relationship with impacts has been described for these pressures within many RBMPs at water body level.

Significant point source pressures have been identified for more than 1750 water bodies, namely for ES014, ES018, ES020, ES050, ES091 and ES100 which are RBDs with significant urban and industrial developments.

Significant diffuse source pressures have been identified in more than 1200 water bodies. The pressures are particularly prevalent in the RBDs ES014, ES080, ES091 and ES100. Some agricultural land-use intensive RBDs, however, like ES040 and ES070 have not reported significant diffuse source pressures.

High percentages of water bodies subject to significant water abstraction have been identified in one northern river basin district (ES018) and some southern river basin districts (ES040, and ES050). Despite water quantity being a significant problem in some of the river basins, these have not identified large numbers of water bodies affected by significant abstraction pressures (e.g. ES063, ES064, ES070, ES080, ES091, and ES110).

According to the Spanish authorities, this apparent mismatch between the relatively low percentages of water bodies reported as subject to significant pressures and the severity of the perceived problem is, at least in part, due to the fact that Spain reported to WISE only the result of the qualitative pressure and impact assessment, which is not accurate in case of diffuse sources of pollution or water abstraction. However, this casts doubt about the reliability of the thresholds of significance used for the pressure inventories and the usability of the information reported. It is not clear why there are so large differences across the different basins if they were supposed to use the same thresholds (as included in the IPH). And it is also unclear why Spain did not report to WISE

[15] According to information provided by Spain, the application of thresholds has been done on a case by case basis.

the result of the final and complete assessment of pressures and impacts, although it may have to do with the fact that the risk assessment resulting from the pressure and impact analysis is not required by the Spanish legislation, as explained above, and is therefore wrongly seen as a one-off exercise that was due only in 2005 as part of the preparation of the first RBMP.

Significant water flow regulations and hydromorphological alterations have been identified for more than 1550 surface water bodies most likely caused by the high number of large dams in Spain (1350), and many other hydromorphological alterations. A high proportion of surface water bodies (>60%) affected by such pressures can be found in ES017, ES018, and ES020. Relatively low values (<20%) have been reported for ES010, ES014, ES030, ES050, ES060, and ES091, despite the large number of dams and river infrastructure existing in most of these basins. Again, there is no plausible explanation for these large differences unless approaches used in the RBDs were significantly different.

River management as a significant pressure appears to be interpreted in different ways in the RBDs, as a few of the RBMPs report significant pressures (e.g. ES017, ES018) and others no single significant pressure (e.g. ES010, ES020, ES030, ES040, ES063, ES064, ES080, ES091 and ES100).

Transitional and coastal water management have been identified as significant pressures for 117 water bodies (40 % of TW and CW). Significant pressures have been reported mainly for ES018, ES060, and ES070. No such pressures were identified for ES010, ES040, ES050, ES063 ES064, ES080, ES091 and ES110, though ports and navigation, as well as recreational activities and sand dredging are present in the RBDs, and despite the fact that inventories of pressures include as relevant connectivity alterations, channelling, sluices, land occupation, dredging and beach regeneration.

Other pressures have been identified for a large number of surface water bodies (more than 1000), in particular in ES014, ES018, ES080 and ES100.

No pressures have been identified in more than 1900 Spanish surface water bodies. ES018 and ES070 report only less than 20 surface water bodies with no significant pressure; and large numbers of surface water bodies with no pressures are reported from ES010, ES030, ES050 and in particular ES091 (77% of the surface water bodies have no pressure). When compared to the status, it is nonetheless surprising that in ES030, ES091 and ES110 there appears to be a much lower number of surface water bodies in good status in 2009 than the number of water bodies with no pressure (ES030: 243 water bodies without pressure vs. 170 water bodies in good status; ES091: 635 water bodies without pressure vs. 226 water bodies in good status; and ES110: 129 water bodies without pressure vs. 73 water bodies in good status). This comparison indicates an inconsistency in the planning process, either within the identification of pressures or the classification of status. And again, figures show significant differences in approach that questions the effectiveness of the harmonisation efforts.

There is a significant difference between data included in many of the RBMPs and provided via WISE, hampering a good understanding of the challenges faced in the RBDs, e.g. ES020 RBMP develops a significant analysis of diffuse pollution, meanwhile according to WISE no water body is affected by such type of pressures. This may be due to the fact that only the qualitative analysis was reported but it is unclear and confusing.

RBD	No pressures		Point source		Diffuse source		Water abstraction		Flow regulations and morphological alterations		River management		Transitional and coastal water management		Other morphological alterations		Other pressures	
	No.	%	No.	%	No.	%	No.	%	No	%	No.	%	No.	%	No.	%	No.	%
ES010	200	71.9	58	20.9	34	12.2	49	17.6	47	16.9	0	0.0	0	0.0	0	0.0	30	10.8
ES014	63	13.6	178	38.5	181	39.2	3	0.6	54	11.7	22	4.8	18	3.9	0	0.0	277	60.0
ES017	25	18.1	75	54.3	33	23.9	74	53.6	89	64.5	77	55.8	12	8.7	0	0.0	59	42.8
ES018	12	4.1	177	60.4	17	5.8	189	64.5	198	67.6	156	53.2	31	10.6	0	0.0	175	59.7
ES020	160	22.5	264	37.2	92	13	74	10.4	439	61.8	0	0.0			0	0.0	1	0.1
ES030	243	75.0	67	20.7	18	5.6	45	13.9	20	6.2	0	0.0			0	0.0	0	0.0
ES040	36	11.5	136	43.5	23	7.3	166	53.0	113	36.1	0	0.0	0	0.0	0	0.0	68	21.7
ES050	210	47.4	163	36.8	78	17.6	147	33.2	84	19.0	57	12.9	0	0.0	0	0.0	29	6.5
ES060	20	11.4	119	68.0	87	49.7	86	49.1	32	18.3	12	6.9	28	16.0	0	0.0	11	6.3
ES063	54	55.7	33	34.0	40	41.2	26	26.8	35	36.1	0	0.0	0	0.0	0	0.0	1	1.0
ES064	38	55.9	22	32.4	25	36.8	17	25.0	26	38.2	0	0.0	0	0.0	0	0.0	10	14.7
ES070	14	12.3	38	33.3	73	64.0	40	35.1	34	29.8	32	28.1	13	11.4	0	0.0	42	36.8
ES080	64	18.3	122	35.0	201	57.6	78	22.3	140	40.1	0	0.0	0	0.0	0	0.0	145	41.5
ES091	635	77.3	147	17.9	155	18.9	39	4.8	120	14.6	0	0.0	0	0.0	5	0.6	1	0.1
ES100	54	15.6	159	46.0	117	33.8	62	17.9	109	31.5	0	0.0	14	4.0	17	4.9	185	53.5
ES110	129	75.0	18	10.5	32	18.6	9	5.2	11	6.4	10	5.8	0	0.0	0	0.0	13	7.6
ES120																		
ES122																		
ES123																		
ES124																		
ES125																		
ES126																		
ES127																		
ES150																		
ES160	1	25.0	2	50.0	0	0.0	0	0.0	2	50.0	0	0.0	1	25.0	0	0.0	0	0.0
Total	**1958**	**38.3**	**1778**	**34.8**	**1206**	**23.4**	**1104**	**21.4**	**1553**	**30.4**	**366**	**7.2**	**117**	**2.3**	**22**	**0.4**	**1047**	**20.5**

Table 4.4.1: Number and percentage of surface water bodies affected by significant pressures.
Source: WISE and information provided by Spain (2014). No data available for ES12X, and ES150.

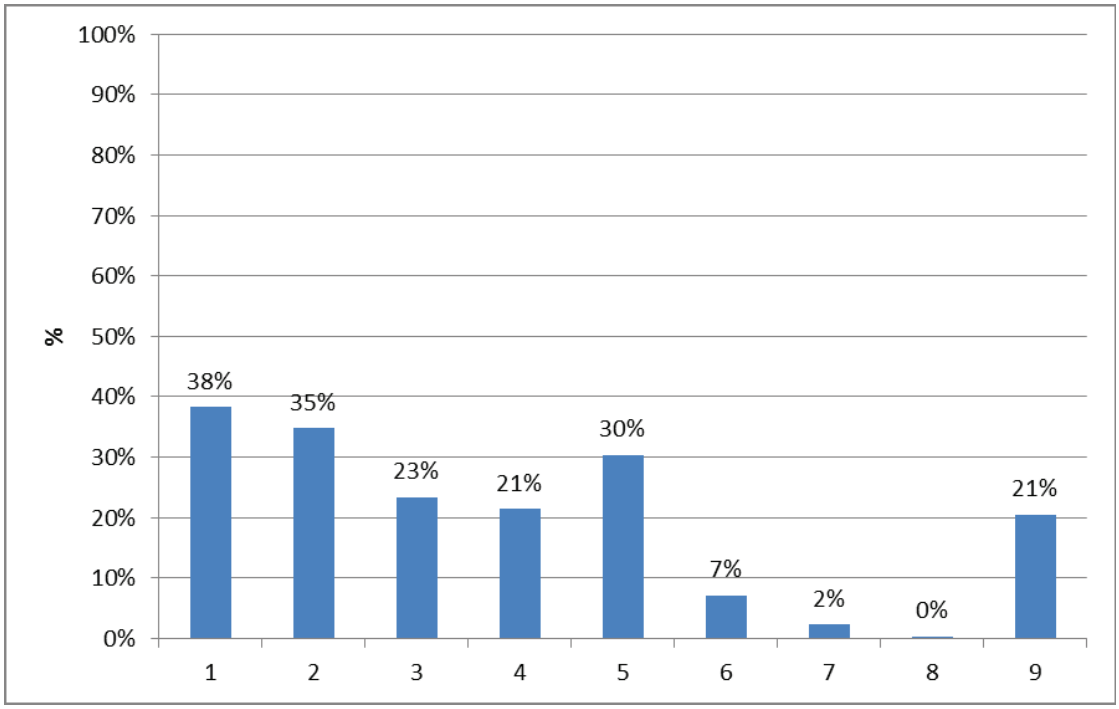


Figure 4.4.1: Graph of percentage of surface water bodies affected by significant pressures
1 = No pressures
2 = Point source
3 = Diffuse source
4 = Water abstraction
5 = Water flow regulations and morphological alterations
6 = River management
7 = Transitional and coastal water management
8 = Other morphological alterations
9 = Other pressures
Source: WISE. No data available for ES12X, and ES150.

4.4 Protected areas

More than 28800 Protected Areas have been reported for those RBDs with WISE data available, an average of 5 Protected Areas per water body.

Of these, by far the largest number corresponds to the more than 21000 Protected Areas for abstraction for drinking water, an average of 4.9 such Protected Areas per water body. The Ebro (ES091) is the RBD with the largest number of such areas.

More than 1600 bathing water Protected Areas have been reported, mainly for ES014, ES060 and ES100.

More than 1100 areas protected for their habitats and more than 500 for their birds are reported. They account for an average of 0.28 protected area for every water body, with higher values in ES150, ES070, ES091 and ES030.

401 Nitrate Vulnerable Zones have been reported, 218 shellfish areas (mainly in ES014), and 462 UWWT Protected Areas (especially relevant for ES110 and ES100).

The information included in the RBMPs regarding Protected Areas usually refers to a list of the Protected Areas, their classification, and an overview map of their location within the RBD, displayed as points. Nonetheless, in general no information is provided on the

following features: the specific protection elements (e.g. shellfish, habitats and birds), the conservation status of the protected area, the pressures or threats that affect the protected area, and the overlap of Protected Areas with water bodies (e.g. for use in the delimitation of water bodies). Exceptionally, some additional information might be found on specific Protected Areas in the Appendices (e.g. ES040 regarding the Tablas de Daimiel protected area and the underlying GWBs).

RBD	Number of PAs											
	Article 7 Abstraction for drinking water	Bathing	Birds	European Other	Fish	Habitats	Local	National	Nitrates	Shellfish	UWWT	Total
ES010	754	32	11	0	8	20	83	166	0	1	6	**1081**
ES014	2183	448	9	7	8	37	142	12	0	95	2	**2943**
ES017	106	36	4	0	9	36	80	80	0	3	12	**366**
ES018	123	99	16	3	14	79	152	111	0	17	8	**622**
ES020	3518	26	53	2	21	78	0	493	10	0	36	**4237**
ES030	476	32	63	0	15	85	0	60	7	0	53	**791**
ES040	1521	26	43	11	23	61	0	168	10	6	19	**1888**
ES050	954	32	13	12	16	38	0	152	9	6	13	**1245**
ES060	882	237	21	10	3	70	39	72	14	36	3	**1387**
ES063	109	53	14	3	3	25	0	37	3	7	3	**257**
ES064	86	25	6	2	0	19	0	38	3	5	3	**187**
ES070	119	116	33	0	1	73	0	141	9	7	7	**506**
ES080	1980	176	44	0	4	83	8	96	280	7	30	**2708**
ES091	7072	43	132	11	15	292	0	143	23	5	29	**7765**
ES100	1292	208	24	66	19	56	261	85	20	18	113	**2162**
ES110	80	26	24	0	0	71	316	0	13	4	125	**659**
ES120												**0**
ES122												**0**
ES123												**0**
ES124												**0**
ES125												**0**
ES126												**0**
ES127												**0**
ES150	5	7	2	0	0	2	0	0	0	1	0	**17**
ES160	21	8	2	0	0	0	0	0	0	0	0	**31**
Total	**21281**	**1630**	**514**	**127**	**159**	**1125**	**1081**	**1854**	**401**	**218**	**462**	**28852**

Table 4.5.1: Number of Protected Areas of all types in each RBD and for the whole country, for surface and groundwater[16]
Source: WISE and Information provided by Spain. No data available for ES12X.

[16] This information corresponds to the reporting of Protected Areas under the WFD. More/other information may have been reported under the obligations of other Directives.

5 MONITORING

Some estimated 18000 monitoring sites have been reported by Spain, mainly for rivers and groundwater bodies. The average number of monitoring sites per water body is 18 for GWB, 4.3 for CWB, 4(4) for TWB, 1.5 for RWB and 0.8 for LWB.

The information provided in the RBMPs and WISE regarding monitoring systems is not always fully consistent. The RBMPs usually include the legal texts and maps showing the monitoring sites, but no information on the methodology for the design of the network (e.g. how pressure and impact analysis has been used to design the monitoring programmes). Information on gaps or the status of implementation is also missing, although it appears a significant issue given the high percentage of water bodies with unknown status (see next chapter).

In fact, additional information gathered through the bilateral meeting held in November 2014 shows that monitoring programmes are not being implemented as reported and, due to budgetary cuts, monitoring efforts have significantly reduced since 2010.

No information on operational monitoring sites has been provided for several RBDs/water categories (ES010 and ES070 re CW; ES019, ES017, ES050 re LW operational sites; ES060, ES063 and ES064 re GW quantitative sites). In some cases operational monitoring is not in place because there are no water bodies identified at risk (ES040, ES050 re CW; ES014 and ES018 re GW quantitative sites).

Generally, there is no or unclear information about grouping of water bodies (e.g. ES014, ES017, ES018, ES040, ES100), despite larger number of RWB and LWB than monitoring sites (in the overall figures). Differences exist between the number of water bodies monitored for each quality element as indicated in the monitoring programmes and the number of water bodies where information on status of each quality element is provided (e.g. ES017, ES018 for fish, ES020). The reason for these differences is not clear.

International monitoring programmes are set up for ES020 and ES040 with PT, and though they have not been established for ES010 with PT or for ES017 with FR, transboundary coordination is in place.

RBD	Rivers		Lakes		Transitional		Coastal		Groundwater		
	Surv	Op	Surv	Op	Surv	Op	Surv	Op	Surv	Op	Quant
ES010	86	74	0	0	5	0	0	0	44	18	8
ES014	519	29	0	0	68	0	70	0	51	0	51
ES017	165	239	6	0	25	4	11	1	38	21	28
ES018	505	204	8	3	187	73	106	64	53	0	36
ES020	819	726	32	2	0	0	0	0	486	140	555
ES030	466	169	20	4	0	0	0	0	214	59	202
ES040	165	217	18	17	8	6	5	0	121	33	207
ES050	274	114	4	0	41	20	9	0	155	78	266
ES060	48	72	3	2	9	9	46	18	98	98	0
ES063	30	79	4	4	21	21	35	35	75	36	0
ES064	30	64	5	6	42	42	16	16	42	15	0
ES070	101	78	6	1	7	0	31	104	45	368	172
ES080	154	101	20	17	31	12	226	113	218	99	287
ES091	358	286	40	22	42	41	36	36	1693	0	377
ES100	301	111	29	7	28	7	31	16	613	867	446
ES110	63	33	0	0	31	20	72	15	328	123	126
ES120											
ES122											
ES123											
ES124											
ES125											
ES126											
ES127											
ES150	0	0	0	0	0	0	7	7	0	0	0
ES160	0	1	0	0	0	0	4	0	0	0	0
Total by type of site	**4084**	**2597**	**195**	**85**	**545**	**255**	**705**	**425**	**4274**	**1955**	**2761**
Total number of monitoring sites[17]	**6681**		**280**		**800**		**1130**		**8990**		
Total number compared to the number of corresponding WBs	**1,5**		**0,8**		**4,4**		**4,3**		**18**		

Table 5.2: Number of monitoring sites by water category
Surv = Surveillance, Op = Operational, Quant = Quantitative
Source: WISE and Information provided by Spain. No data available for ES12X. There are large differences between the figures reported in WISE and those corrected by Spanish authorities in 2014.

[17] The total number of monitoring sites may differ from the sum of monitoring sites by type because some sites are used for more than one purpose.

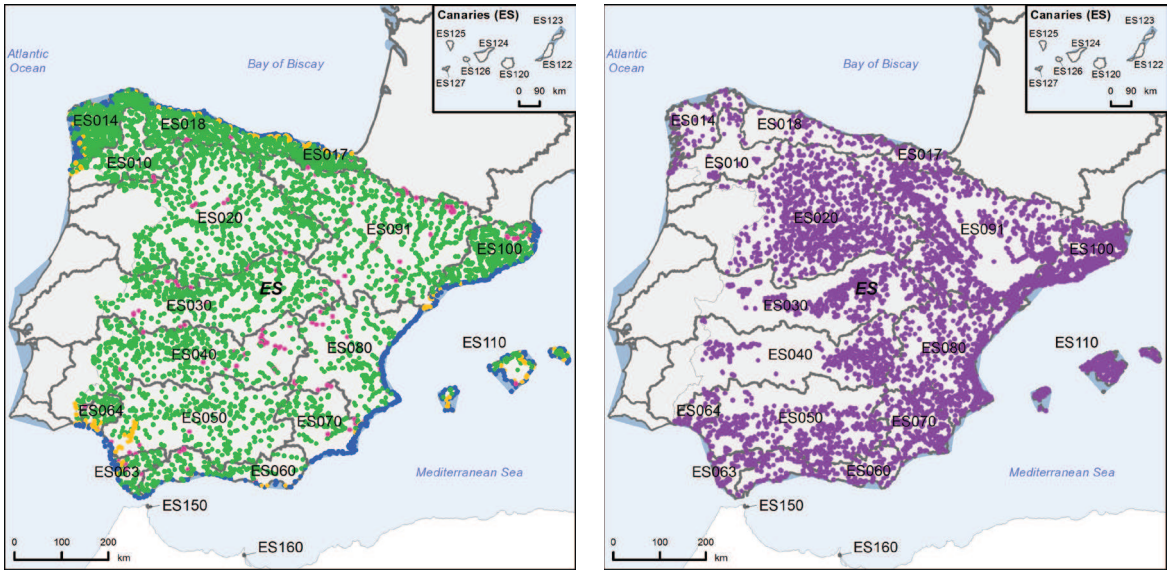


Figure 5.1: Maps of surface water (left) and groundwater (right) monitoring stations

- River monitoring stations
- Lake monitoring stations
- Transitional water monitoring stations
- Coastal water monitoring stations
- Unclassified surface water monitoring stations
- Groundwater monitoring stations
- River Basin Districts
- Countries outside EU

Source: WISE (2010), Eurostat (country borders)**.** No data available for ES12X.

5.1 Monitoring of Surface Waters

As shown in Figure 5.1 and Table 5.2, a monitoring programme has been set up.

The following monitoring design and implementation gaps relating to surveillance monitoring can be identified for some of the RBDs[18]:

- RW: Lack of monitoring QE1-2, QE1-4 and QE3-3
- LW: Lack of monitoring in general (e.g. ES010), QE1-2, QE1-3, QE1-4, QE2, QE3-1 and QE3-3.

One important gap is the lack of monitoring for fish in most of the RBDs.

[18] The acronyms for the WFD Quality Elements follow the coding adopted for WISE: QE1 Biological, QE1-1 Phytoplankton, QE1-2 Other aquatic flora, QE1-3 Benthic invertebrates, QE1-4 Fish, QE1-5 Other species, QE2 Hydromorphological Quality Elements, QE2-1 Hydrological regime-rivers, QE2-2 River continuity, QE2-3 Morphological conditions-Rivers, QE2-4 Hydrological regime-lakes, QE2-5 Morphological conditions-lakes, QE2-6 Morphological conditions-transitional and coastal waters, QE2-7 Tidal regime-transitional waters, QE2-8 Tidal regime-Coastal waters, QE3 Chemical and physico-chemical, QE3-1 General parameters, QE3-2 Priority substances, QE3-3 Non priority specific pollutants, QE3-4 Other national pollutants.

In terms of operational monitoring, information on the relationship between pressures, impacts and monitored biological quality elements (BQEs) is scarce. It can be noted that in ES017 and ES018 (RW) altered habitats due to abstractions or water flow are not monitored/related to QE1-4. Information is lacking on how chemical pollution due to atmospheric deposition will be detected, and it has not been considered in the design of pollutant sampling in river basins.

Monitoring of sediments and biota is not specified in most of the RBMPs (e.g. ES017, ES018, ES020, ES040, ES050) but additional information received from Spain indicates that monitoring of sediments and biota is being undertaken in all RBDs.

5.2 Monitoring of Ground Waters

Significant monitoring networks have been built up to control groundwater status, in particular based on the existing quantitative (piezometric) networks, and on average 10 monitoring sites exist per GWB. The monitoring network is particular dense in the areas with intensive abstractions. The exception is ES060, ES063 and ES064 where no quantitative monitoring is reported despite intensive water use.

The groundwater chemical status monitoring programmes are designed in order to detect significant and sustained upward trends in pollutants, even though a detailed justification is lacking in the documents of the RBMPs.

5.3 Monitoring of Protected Areas

Monitoring in protected areas is required under WFD Article 8 and section 1.3.5 of Annex V.

A total of 679 monitoring sites have been reported for Protected Areas (PAs), this is one site per 24 PAs. Most of them relate to bathing water, drinking water and nitrates.

It is however not clear whether the reported monitoring sites are the result of just the geographical overlay of monitoring sites and protected areas or are genuine sites for the monitoring of the specific objectives of the relevant protected areas. Generally WISE reporting identifies specific programmes for the monitoring of some types protected areas (water bodies for the production of drinking water, bathing water, shellfish, etc.).

Regarding Drinking Water PA, monitoring covers only a very small percentage of the total number of such PAs. It is unclear if all relevant parameters of the Drinking Water Directive are monitored.

Monitoring of shellfish PAs is focused on shellfish as economically relevant species, and covers heavy metals and toxic pollutants. It is reported for only 3 RBDs, although shellfish is a relevant economic activity in other RBDs as well.

Monitoring in Nature PAs is not mentioned in the RBMPs. In general, RBMPs include only a geographic reference of PAs under the Habitats Directive, without further referring to the specific conservation status and/or objectives.

RBD	Surface waters								Ground-water drinking water
	Surface drinking water abstraction	Bathing water	Fish	Birds sites	Habitats sites	Nitrates	Shell-fish	UWWT	
ES010	55	27	21	0	0	0	0	7	9
ES014	104	0	13	0	0	138	0	0	44
ES017	104	55	10	0	0	0	5	5	10
ES018	103	99	14	16	78	0	17	0	20
ES020	143	27	21	268		38	NA	151	144
ES030	109	31	15	*	*	*	NA	*	
ES040	63	19	16	32	56	67	1	0	0
ES050	50	0	18	0	0	0	0	0	80
ES060	33	0	3	0	0	0	0	0	0
ES063	0	0	3	0	0	0	0	0	0
ES064	0	0	0	0	0	0	0	0	0
ES070	8	55	2	58	63	28	0	0	28
ES080	16	5	8	-	-	107	-	-	-
ES091	132		15	-	-	NA	-	25	348
ES100	45	242	0	19	0	556	0	99	138
ES110	76	63	0	54	82	19	8	41	204
ES120									
ES122									
ES123									
ES124									
ES125									
ES126									
ES127									
ES150	4	0	0	0	0	0	0	0	0
ES160	0	0	0	0	0	0	0	0	20

Table 5.3.1: Number of monitoring stations in Protected Areas.
Source: Information provided by Spain (2014). *: No network defined, but parameters are being controlled by other monitoring networks.

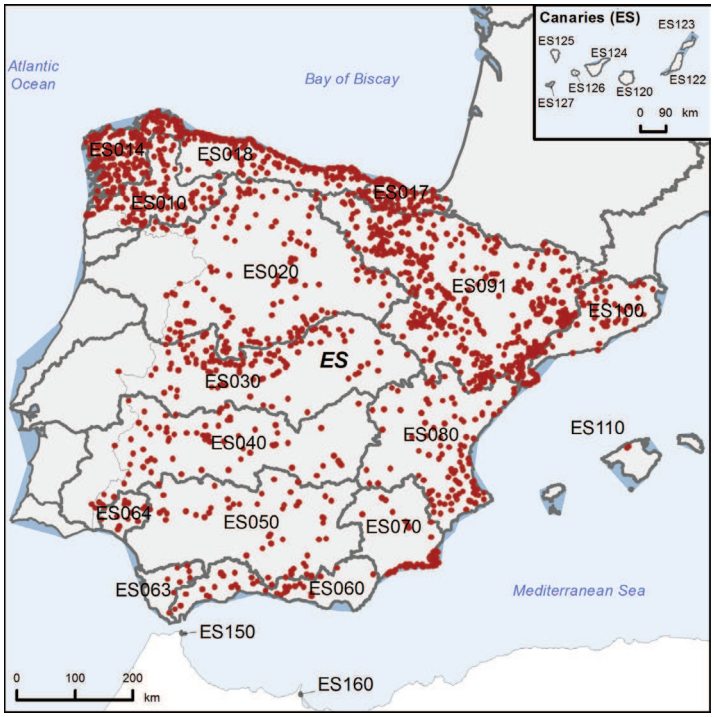


Figure 5.2: Map of monitoring stations for Protected Areas
Source: WISE (2010)

NB. For Groundwater, no information was supplied by ES020, ES030, ES040, ES050, ES060, ES063, ES064, ES070, ES100 and ES110 on Protected Area Monitoring Points. For surface waters, information was supplied about Drinking Water Protected Areas only for ES020, ES030, ES050, ES060, ES100 and ES110. Partial information on other Protected Areas was supplied by ES018, ES040, ES063, ES064, ES070, ES080 and ES091. The remaining RBDs supplied information on all types of Protected Area. Monitoring for Drinking water PAs has been established in all RBDs, although the information is unclear/contradictory for ES014.

RBD	Rivers											Lakes										
	QE1.1 Phytoplankton [19]	QE1.2 Other aquatic flora	QE1.2.3 Macrophytes	QE1.2.4 Phytobenthos	QE1.3 Benthic invertebrates	QE1.4 Fish	QE1.5 Other species	QE2 Hydromorphological QEs	QE3.1 General Parameters	QE3.3 Non priority specific Pollutants	QE3.4 Other national pollutants	QE1.1 Phytoplankton	QE1.2 Other aquatic flora	QE1.2.3 Macrophytes	QE1.2.4 Phytobenthos	QE1.3 Benthic invertebrates	QE1.4 Fish	QE1.5 Other species	QE2 Hydromorphological QEs	QE3.1 General Parameters	QE3.3 Non priority specific pollutants	QE3.4 Other national pollutants
ES010							-												-			-
ES014											-	-	-	-	-	-	-	-	-	-	-	-
ES017																						
ES018																						
ES020							-											-				
ES030							-											-				
ES040																						
ES050							-											-				-
ES060							-				-							-				-
ES063																		-				-
ES064																		-				-
ES070							-															-
ES080							-				-							-				
ES091																						-
ES100							-															
ES110							-				-	-	-	-	-	-	-	-	-	-	-	-
ES120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES126	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES160												-	-	-	-	-	-	-	-	-	-	-

[19] The use of phytoplankton as an indicator in rivers is limited in Spain to reservoirs only.

RBD	Transitional											Coastal										
	QE1.1 Phytoplankton	QE1.2 Other aquatic flora	QE1.2.1 Microalgae	QE1.2.2 Angiosperms	QE1.3 Benthic invertebrates	QE1.4 Fish	QE1.5 Other species	QE2 Hydromorphological QEs	QE3.1 General Parameters	QE3.3 Non priority specific pollutants	QE3.4 Other national pollutants	QE1.1 Phytoplankton	QE1.2 Other aquatic flora	QE1.2.1 Microalgae	QE1.2.2 Angiosperms	QE1.3 Benthic invertebrates	QE1.4 Fish	QE1.5 Other species	QE2 Hydromorphological QEs	QE3.1 General Parameters	QE3.3 Non priority specific pollutants	QE3.4 Other national pollutants
ES010							-											-	-				-
ES014							-				-							-	-				-
ES017							-											-	-				
ES018																		-					
ES020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES040																		-	-				
ES050							-											-	-				
ES060							-											-	-				
ES063							-											-	-				-
ES064							-											-	-				
ES070							-				-							-	-				
ES080							-											-	-				
ES091							-											-	-				
ES100											-							-	-				
ES110							-				-							-	-				-
ES120	-	-	-	-	-	-	-	-	-	-	-							-					
ES122	-	-	-	-	-	-	-	-	-	-	-							-	-				
ES123	-	-	-	-	-	-	-	-	-	-	-							-	-				
ES124	-	-	-	-	-	-	-	-	-	-	-												
ES125	-	-	-	-	-	-	-	-	-	-	-							-	-				-
ES126	-	-	-	-	-	-	-	-	-	-	-				-	-		-	-				
ES127	-	-	-	-	-	-	-	-	-	-	-							-	-				
ES150	-	-	-	-	-	-	-	-	-	-	-							-	-				-
ES160	-	-	-	-	-	-	-	-	-	-	-							-	-				

Table 5.1: Quality elements monitored - **Source:** Information provided by Spain (2014).

QE Monitored

QE Not monitored

\- Not Relevant

6 STATUS

The ecological status of natural SWBs presented in the RBMPs shows that 43% are either in high or good status. Several RBDs have a relatively high proportion (>15%) of water bodies in high ecological status (ES010, ES014, ES018, ES050, ES070) or in good status (e.g. ES030, ES050 and ES060).

A significant number/proportion (>5%) of water bodies in bad ecological status has been identified in some RBDs (ES030, ES040, ES050, ES060, ES063 and ES070).

The overall number (727 WBs) and proportion (17%) of water bodies with unknown ecological status is very high; and in particular the following RBDs should be mentioned: ES014, ES063, ES064, ES080, ES091, ES100, ES110, ES123; ES091 presents the largest number of water bodies with unknown ecological status (322 water bodies).

Large differences exist in the status results between RBDs. The following shows the percentage of natural SWB in good or better status in some of the main RBDs:

ES030 Tagus	61
ES050 Guadalquivir	59
ES060 Andalucía Med	54
ES070 Segura	48
ES080 Jucar	42
ES091 Ebro	34
ES040 Guadiana	28
ES020 Duero	21

There is no plausible explanation for these differences other than the lack of harmonisation of the status assessment. The figures question the reliability of the status assessments and the use that has been made of the EU intercalibration results.

RBD	Total	High		Good		Moderate		Poor		Bad		Unknown	
		No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
ES010	227	69	30,4	101	44,5	37	16,3	13	5,7	2	0,9	5	2,2
ES014	422	74	17,5	137	32,5	67	15,9	19	4,5	3	0,7	122	28,9
ES017	101	4	4,0	49	48,5	29	28,7	15	14,9	2	2,0	2	2,0
ES018	258	51	19,8	143	55,4	51	19,8	7	2,7	3	1,2	3	1,2
ES020	620	28	4,5	105	16,9	441	71,1	39	6,3	7	1,1	0	0,0
ES030	198	10	5,1	111	56,1	46	23,2	9	4,5	10	5,1	12	6,1
ES040	244	6	2,5	63	25,8	131	53,7	25	10,2	19	7,8	0	0,0
ES050	325	52	16,0	140	43,1	71	21,8	33	10,2	29	8,9	0	0,0
ES060	130	11	8,5	60	46,2	37	28,5	11	8,5	9	6,9	2	1,5
ES063	67	0	0,0	13	19,4	6	9,0	16	23,9	5	7,5	27	40,3
ES064	51	2	3,9	16	31,4	15	29,4	5	9,8	1	2,0	12	23,5
ES070	84	13	15,5	28	33,3	25	29,8	6	7,1	12	14,3	0	0,0
ES080	289	3	1,0	120	41,5	61	21,1	19	6,6	14	4,8	72	24,9
ES091	705	71	10,1	169	24,0	107	15,2	29	4,1	7	1,0	322	45,7
ES100	268	5	1,9	62	23,1	76	28,4	26	9,7	12	4,5	87	32,5
ES110	158	22	13,9	47	29,7	12	7,6	17	10,8	4	2,5	56	35,4
ES120	5	1	20,0	4	80,0	0	0,0	0	0,0	0	0,0	0	0,0
ES122	5	0	0,0	5	100,0	0	0,0	0	0,0	0	0,0	0	0,0
ES123	5	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	5	100,0
ES124	6	0	0,0	6	100,0	0	0,0	0	0,0	0	0,0	0	0,0
ES125	5	0	0,0	5	100,0	0	0,0	0	0,0	0	0,0	0	0,0
ES126	4	0	0,0	4	100,0	0	0,0	0	0,0	0	0,0	0	0,0
ES127	3	0	0,0	3	100,0	0	0,0	0	0,0	0	0,0	0	0,0
ES150	2	0	0,0	2	100,0	0	0,0	0	0,0	0	0,0	0	0,0
ES160	2	0	0,0	2	100,0	0	0,0	0	0,0	0	0,0	0	0,0
TOTAL	**4184**	**422**	**10,1**	**1395**	**33,3**	**1212**	**29,0**	**289**	**6,9**	**139**	**3,3**	**727**	**17,4**

Table 6.1: Ecological status of natural surface water bodies
Source: WISE and RBMPs; information provided by Spain (2014).

Regarding the ecological potential of HMWB or AWB, 32% is evaluated as high or good status overall, with significant differences between low values (<15%; ES100) and high percentages (approx. 50%; ES010, ES050, ES070). 185 water bodies still have unknown status (19%), with especially significant high values in ES091 (110 water bodies, 95%).

RBD	Total	High		Good		Moderate		Poor		Bad		Unknown	
		No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
ES010	51	0	0,0	25	49,0	15	29,4	9	17,6	2	3,9	0	0,0
ES014	40	0	0,0	11	27,5	20	50,0	3	7,5	3	7,5	3	7,5
ES017	37	0	0,0	7	18,9	15	40,5	8	21,6	6	16,2	1	2,7
ES018	35	0	0,0	15	42,9	12	34,3	2	5,7	4	11,4	2	5,7
ES020	90	0	0,0	28	31,1	55	61,1	5	5,6	1	1,1	1	1,1
ES030	126	0	0,0	49	38,9	32	25,4	25	19,8	12	9,5	8	6,3
ES040	69	0	0,0	18	26,1	17	24,6	8	11,6	12	17,4	14	20,3
ES050	118	0	0,0	63	53,4	32	27,1	16	13,6	7	5,9	0	0,0
ES060	45	0	0,0	20	44,4	16	35,6	1	2,2	8	17,8	0	0,0
ES063	30	0	0,0	9	30,0	11	36,7	3	10,0	0	0,0	7	23,3
ES064	17	0	0,0	7	41,2	7	41,2	0	0,0	0	0,0	3	17,6
ES070	30	0	0,0	14	46,7	11	36,7	2	6,7	2	6,7	1	3,3
ES080	60	0	0,0	26	43,3	9	15,0	7	11,7	4	6,7	14	23,3
ES091	116	0	0,0	0	0,0	4	3,4	2	1,7	0	0,0	110	94,8
ES100	78	0	0,0	11	14,1	29	37,2	14	17,9	15	19,2	9	11,5
ES110	14	0	0,0	4	28,6	1	7,1	1	7,1	0	0,0	8	57,1
ES120	1	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	1	100,0
ES122	0	-	-	-	-	-	-	-	-	-	-	-	-
ES123	1	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	1	100,0
ES124	5	2	40,0	2	40,0	0	0,0	0	0,0	0	0,0	1	20,0
ES125	0	-	-	-	-	-	-	-	-	-	-	-	-
ES126	0	-	-	-	-	-	-	-	-	-	-	-	-
ES127	0	-	-	-	-	-	-	-	-	-	-	-	-
ES150	1	0	0,0	0	0,0	0	0,0	0	0,0	1	100,0	0	0,0
ES160	2	0	0,0	0	0,0	0	0,0	1	50,0	0	0,0	1	50,0
TOTAL	**966**	**2**	**0,2**	**309**	**32,0**	**286**	**29,6**	**107**	**11,1**	**77**	**8,0**	**185**	**19,2**

Table 6.2: Ecological potential of artificial and heavily modified water bodies
Source: WISE and RBMPs; information provided by Spain.

Regarding the chemical status of natural SWB, a number of RBMPs have classified a large proportion of water bodies in good status. Some RBDs have significant work to do to improve the assessment of chemical status of natural SWBs (ES064, ES063). In several other RBDs a significant number of water bodies still need to be classified (ES010, ES018, ES091 y ES110 with > 75% unknown), thus the status assessment can be considered as insufficient to inform adequately the rest of the WFD planning process.

RBD	Total	Good		Poor		Unknown	
		No.	%	No.	%	No.	%
ES010	227	39	17,2	7	3,1	181	79,7
ES014	422	356	84,4	34	8,1	32	7,6
ES017	101	62	61,4	9	8,9	30	29,7
ES018	258	62	24,0	4	1,6	192	74,4
ES020	620	599	96,6	21	3,4	0	0,0
ES030	198	192	97,0	6	3,0	0	0,0
ES040	244	215	88,1	2	0,8	27	11,1
ES050	325	282	86,8	11	3,4	32	9,8
ES060	130	116	89,2	2	1,5	12	9,2
ES063	67	30	44,8	10	14,9	27	40,3
ES064	51	22	43,1	15	29,4	14	27,5
ES070	84	77	91,7	7	8,3	0	0,0
ES080	289	159	55,0	8	2,8	122	42,2
ES091	705	0*	0,0	32	4,5	673	95,5
ES100	268	140	52,2	14	5,2	114	42,5
ES110	158	0	0,0	0	0,0	158	100,0
ES120	5	2	40,0	0	0,0	3	60,0
ES122	5	5	100,0	0	0,0	0	0,0
ES123	5	0	0,0	0	0,0	5	100,0
ES124	6	6	100,0	0	0,0	0	0,0
ES125	5	5	100,0	0	0,0	0	0,0
ES126	4	4	100,0	0	0,0	0	0,0
ES127	3	3	100,0	0	0,0	0	0,0
ES150	2	0	0,0	0	0,0	2	100,0
ES160	2	2	100,0	0	0,0	0	0,0
TOTAL	**4184**	**2378**	**56,8**	**182**	**4,3**	**1624**	**38,8**

Table 6.3: Chemical status of natural surface water bodies
Source: WISE and RBMPs; information provided by Spain (2014)

* The map on page 163 of the Ebro RBMP (figure 84) shows surface water bodies in good chemical status and it is therefore inconsistent with the WISE reporting reflected on this table.

A similar assessment can be made regarding the chemical status assessment of AWB/HMWB. 60% are reported as being in good status but several RBDs include high percentages of "unknown" status: ES010, ES018, ES080, ES091, ES110). ES091 reports as

unknown 114 out of 116 water bodies. These large percentages of water bodies with unknown status undermine the subsequent planning process.

RBD	Total	Good		Poor		Unknown	
		No.	%	No.	%	No.	%
ES010	51	17	33,3	0	0,0	34	66,7
ES014	40	26	65,0	11	27,5	3	7,5
ES017	37	19	51,4	10	27,0	8	21,6
ES018	35	19	54,3	2	5,7	14	40,0
ES020	90	87	96,7	3	3,3	0	0,0
ES030	126	121	96,0	5	4,0	0	0,0
ES040	69	53	76,8	0	0,0	16	23,2
ES050	118	101	85,6	14	11,9	3	2,5
ES060	45	40	88,9	0	0,0	5	11,1
ES063	30	20	66,7	2	6,7	8	26,7
ES064	17	6	35,3	8	47,1	3	17,6
ES070	30	20	66,7	9	30,0	1	3,3
ES080	60	22	36,7	9	15,0	29	48,3
ES091	116	0	0,0	2	1,7	114	98,3
ES100	78	37	47,4	16	20,5	25	32,1
ES110	14	0	0,0	0	0,0	14	100,0
ES120	1	0	0,0	0	0,0	1	100,0
ES122	0	0	-	0	-	0	-
ES123	1	0	0,0	0	0,0	1	100,0
ES124	5	4	80,0	0	0,0	1	20,0
ES125	0	0	-	0	-	0	-
ES126	0	0	-	0	-	0	-
ES127	0	0	-	0	-	0	-
ES150	1	0	0,0	0	0,0	1	100,0
ES160	2	0	0,0	1	50,0	1	50,0
Total	**966**	**592**	**61,3**	**92**	**9,5**	**282**	**29,2**

Table 6.4: Chemical status of artificial and heavily modified surface water bodies
Source: WISE and RBMPs; information provided by Spain (2014).

According to information provided by the Spanish authorities, in general chemical monitoring has been carried out in those water bodies receiving industrial discharges or subject to potential discharges from use of pesticides in agriculture. For the rest good chemical status has been assumed, or can be assumed in case they have been classified as "unknown" status. However, this overlooks other relevant sources of chemical pollution such as urban wastewater and atmospheric deposition.

The information on chemical status of GWB is much more complete, with only 8 water bodies in "unknown" status, and 33% of these GWBs in poor status.

RBD	Good		Poor		Unknown	
	No.	%	No.	%	No.	%
ES010	5	83,3	1	16,7	0	0,0
ES014	18	100,0	0	0,0	0	0,0
ES017	26	92,9	2	7,1	0	0,0
ES018	20	100,0	0	0,0	0	0,0
ES020	50	78,1	14	21,9	0	0,0
ES030	18	75,0	6	25,0	0	0,0
ES040	7	35,0	13	65,0	0	0,0
ES050	44	73,3	16	26,7	0	0,0
ES060	32	47,8	35	52,2	0	0,0
ES063	5	35,7	7	50,0	2	14,3
ES064	2	50,0	2	50,0	0	0,0
ES070	39	61,9	24	38,1	0	0,0
ES080	63	70,0	27	30,0	0	0,0
ES091	82	78,1	23	21,9	0	0,0
ES100	16	41,0	23	59,0	0	0,0
ES110	55	61,1	35	38,9	0	0,0
ES120	2	20,0	8	80,0	0	0,0
ES122	0	0,0	4	100,0	0	0,0
ES123	0	0,0	0	0,0	1	100,0
ES124	3	75,0	1	25,0	0	0,0
ES125	4	80,0	0	0,0	1	20,0
ES126	3	60,0	2	40,0	0	0,0
ES127	0	0,0	0	0,0	3	100,0
ES150	0	0,0	0	0,0	1	100,0
ES160	0	0,0	3	100,0	0	0,0
Total	**494**	**66,0**	**246**	**32,9**	**8**	**1,1**

Table 6.5: Chemical status of groundwater bodies
Source: WISE and RBMPs; information provided by Spain (2014).

The data on quantitative status is also largely complete, with the important exception of ES063, where a large percentage of groundwater bodies are in unknown quantitative status. This is consistent with the lack of quantitative monitoring reported for this RBD.

RBD	Good		Poor		Unknown	
	No.	%	No.	%	No.	%
ES010	6	100,0	0	0,0	0	0,0
ES014	18	100,0	0	0,0	0	0,0
ES017	28	100,0	0	0,0	0	0,0
ES018	20	100,0	0	0,0	0	0,0
ES020	59	92,2	5	7,8	0	0,0
ES030	24	100,0	0	0,0	0	0,0
ES040	9	45,0	11	55,0	0	0,0
ES050	42	70,0	18	30,0	0	0,0
ES060	35	52,2	32	47,8	0	0,0
ES063	3	21,4	3	21,4	8	57,1
ES064	3	75,0	0	0,0	1	25,0
ES070	22	34,9	41	65,1	0	0,0
ES080	60	66,7	30	33,3	0	0,0
ES091	104	99,0	1	1,0	0	0,0
ES100	33	84,6	6	15,4	0	0,0
ES110	53	58,9	37	41,1	0	0,0
ES120	1	10,0	9	90,0	0	0,0
ES122	0	0,0	4	100,0	0	0,0
ES123	0	0,0	0	0,0	1	100,0
ES124	0	0,0	4	100,0	0	0,0
ES125	5	100,0	0	0,0	0	0,0
ES126	5	100,0	0	0,0	0	0,0
ES127	3	100,0	0	0,0	0	0,0
ES150	0	0,0	0	0,0	1	100,0
ES160	0	0,0	3	100,0	0	0,0
TOTAL	**533**	**71,3**	**204**	**27,3**	**11**	**1,5**

Table 6.6: Quantitative status of groundwater bodies
Source: WISE and RBMPs; information provided by Spain.

3159 SWB are expected to achieve good or better global status by 2015, with significant increases (>25 %) in 4 RBDs. Note that most likely a major number of these water bodies will simply be re-classified from currently "unknown" status. Application of exemptions according to WFD Article 4(4) affects 30% of SWB with particularly high numbers in ES040, ES080, ES070 and ES020. Article 4(5) is applied in 8 RBDs affecting 3% of the total number of SWB, with highest percentages in ES020 and ES030.
The forecast for status improvement in 2021 and 2027 is shown in table 6.7 to 6.13.

RBD	Total	Global status (ecological and chemical)					Good ecological status 2021		Good chemical status 2021		Good ecological status 2027		Good chemical status 2027		Global exemptions 2009 (% of all SWBs)			
		Good or better 2009		Good or better 2015		Increase 2009-2015									Art 4(4)	Art 4(5)	Art 4(6)	Art 4(7)
		No.	%	No.	%	%	No.	%	No.	%	No.	%	No.	%	%	%	%	%
ES010	278	196	70,5	232	83,5	12,9	247	88,8	271	97,5	275	98,9	278	100	15,5	1,1	0,0	0,0
ES014	462	320	69,3	397	85,9	16,7	453	98,1	451	97,6	462	100	455	98,5	12,6	1,5	0,0	0,0
ES017	138	58	42,0	96	69,6	27,5	138	100	138	100	138	100	138	100	30,4	0,0	0,0	0,0
ES018	293	210	71,7	253	86,3	14,7	290	99,0	292	99,7	293	100	293	100	13,7	0,0	0,0	0,7
ES020	710	161	22,7	293	41,3	18,6	299	42,1	710	100	627	88,3	710	100	47,0	11,7	0,0	0,0
ES030	324	170	52,5	228	70,4	17,9	262	80,9	324	100	296	91,4	324	100	21,0	5,6	0,0	0,0
ES040	313	88	28,1	88	28,1	0,0	88	28,1	313	100	312	99,7	313	100	71,6	0,0	0,0	0,0
ES050	443	252	56,9	299	67,5	10,6	391	88,3	441	99,5	434	98,0	442	99,8	30,5	2,0	0,0	0,0
ES060	175	91	52,0	137	78,3	26,3	155	88,6	175	100	168	96,0	175	100	17,7	4,0	4,0	0,0
ES063	97	35	36,1	40	41,2	5,2	51	52,6	78	80,4	79	81,4	87	89,7	40,2	1,0	0,0	0,0
ES064	68	25	36,8	28	41,2	4,4	35	51,5	41	60,3	56	82,4	63	92,6	41,2	0,0	0,0	0,0
ES070	114	52	45,6	58	50,9	5,3	95	83,3	101	88,6	114	100	114	100	49,1	0,0	0,0	0,0
ES080	349	149	42,7	152	43,6	0,9	196	56,2	332	95,1	349	100	349	100	56,4	0,0	0,0	0,0
ES091	821	226	27,5	552	67,2	39,7	553	67,4	624	76,0	628	76,5	636	77,5	9,0	1,5	0,0	0,0
ES100	346	76	22,0	195	56,4	34,4	197	56,9	318	91,9	346	100	346	100	43,6	0,0	0,0	0,0
ES110	172	73	42,4	73	42,4	0,0	73	42,4	0	0,0	73	42,4	0	0,0	0,0	0,0	0,0	0,0
ES120	6	5	83,3	5	83,3	0,0	5	83,3	2	33,3	6	100	6	100	0,0	0,0	0,0	0,0
ES122	5	5	100	5	100	0,0	5	100	5	100	5	100	5	100	0,0	0,0	0,0	0,0
ES123	6	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES124	11	10	90,9	11	100	9,1	11	100	11	100	11	100	11	100	0,0	0,0	0,0	0,0
ES125	5	5	100	5	100	0,0	5	100	5	100	5	100	5	100	0,0	0,0	0,0	0,0
ES126	4	4	100	4	100	0,0	4	100	4	100	4	100	4	100	0,0	0,0	0,0	0,0
ES127	3	3	100	3	100	0,0	3	100	3	100	3	100	3	100	0,0	0,0	0,0	0,0
ES150	3	2	66,7	2	66,7	0,0	3	100	3	100	3	100	3	100	33,3	0,0	0,0	0,0
ES160	4	2	50,0	3	75,0	25,0	4	100	4	100	4	100	4	100	25,0	0,0	25,0	0,0
Total	**5150**	**2218**	**43,1**	**3159**	**61,3**	**18,3**	**3563**	**69,2**	**4646**	**90,2**	**4691**	**91,1**	**4764**	**92,5**	**29,6**	**2,7**	**0,2**	**0,0**

Table 6.7: Surface water bodies: overview of status in 2009 and expected status in 2015, 2021 and 2027.
Water bodies with good status in 2009 are those where ecological status is high or good and the chemical status is good, and exemptions are not considered. Water bodies expected to achieve good status in 2015 fall into the following categories: ecological status is high or good and the chemical status is good, exemptions are not considered; chemical status is good, and the ecological status is moderate or below but no ecological exemptions; ecological status is high or good, and the chemical status is failing to achieve good but there are no chemical exemptions; and ecological status is moderate or below, and chemical status is failing to achieve good but there are no ecological nor chemical exemptions. Note: Water bodies with unknown/unclassified/Not applicable in either ecological or chemical status are not considered
Source: WISE and RBMPs; information provided by Spain (2014).

RBD	Total	Ecological status					Good ecological status 2021		Good ecological status 2027		Ecological exemptions (% of all SWBs)			
		Good or better 2009		Good or better 2015		Increase 2009 -2015					Art 4(4)	Art 4(5)	Art 4(6)	Art 4(7)
		No.	%	No.	%	%	No.	%	No.	%	%	%	%	%
ES010	227	170	74,9	189	83,3	8,4	198	87,2	225	99,1	15,9	0,9	0,0	0,0
ES014	422	211	50,0	398	94,3	44,3	422	100,0	422	100,0	5,7	0,0	0,0	0,0
ES017	101	53	52,5	77	76,2	23,8	101	100,0	101	100,0	23,8	0,0	0,0	0,0
ES018	258	194	75,2	234	90,7	15,5	257	99,6	258	100,0	9,3	0,0	0,0	0,0
ES020	620	133	21,5	253	40,8	19,4	258	41,6	556	89,7	48,9	10,3	0,0	0,0
ES030	198	121	61,1	165	83,3	22,2	178	89,9	190	96,0	12,6	2,5	0,0	0,0
ES040	244	69	28,3	67	27,5	-0,8	67	27,5	243	99,6	72,1	0,0	0,0	0,0
ES050	325	192	59,1	200	61,5	2,5	281	86,5	316	97,2	35,7	2,8	0,0	0,0
ES060	130	71	54,6	107	82,3	27,7	120	92,3	127	97,7	15,4	2,3	2,3	0,0
ES063	67	13	19,4	29	43,3	23,9	34	50,7	54	80,6	37,3	1,5	0,0	0,0
ES064	51	18	35,3	19	37,3	2,0	24	47,1	39	76,5	39,2	0,0	0,0	0,0
ES070	84	41	48,8	44	52,4	3,6	76	90,5	84	100,0	47,6	0,0	0,0	0,0
ES080	289	123	42,6	126	43,6	1,0	165	57,1	289	100,0	56,4	0,0	0,0	0,0
ES091	705	240	34,0	551	78,2	44,1	551	78,2	626	88,8	10,6	1,4	0,0	0,0
ES100	268	67	25,0	173	64,6	39,6	173	64,6	268	100,0	35,4	0,0	0,0	0,0
ES110	158	69	43,7	69	43,7	0,0	69	43,7	69	43,7	0,0	0,0	0,0	0,0
ES120	5	5	100,0	5	100,0	0,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES122	5	5	100,0	5	100,0	0,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES123	5	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES124	6	6	100,0	6	100,0	0,0	6	100,0	6	100,0	0,0	0,0	0,0	0,0
ES125	5	5	100,0	5	100,0	0,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES126	4	4	100,0	4	100,0	0,0	4	100,0	4	100,0	0,0	0,0	0,0	0,0
ES127	3	3	100,0	3	100,0	0,0	3	100,0	3	100,0	0,0	0,0	0,0	0,0
ES150	2	2	100,0	2	100,0	0,0	2	100,0	2	100,0	0,0	0,0	0,0	0,0
ES160	2	2	100,0	2	100,0	0,0	2	100,0	2	100,0	0,0	0,0	0,0	0,0
Total	**4184**	**1817**	**43,4**	**2733**	**65,3**	**21,9**	**3006**	**71,8**	**3899**	**93,2**	**27,9**	**2,2**	**0,1**	**0,0**

Table 6.8: Natural surface water bodies: ecological status in 2009 and expected status in 2015, 2021 and 2027.
Source: WISE and RBMPs; information provided by Spain (2014).

RBD	Total	Chemical status					Good chemical status 2021		Good chemical status 2027		Chemical exemptions (% of all SWBs)			
		Good or better 2009		Good or better 2015		Increase 2009 -2015					Art 4(4)	Art 4(5)	Art 4(6)	Art 4(7)
		No.	%	No.	%	%	No.	%	No.	%	%	%	%	%
ES010	227	39	17,2	220	96,9	79,7	220	96,9	227	100,0	3,1	0,0	0,0	0,0
ES014	422	356	84,4	391	92,7	8,3	422	100,0	422	100,0	7,3	0,0	0,0	0,0
ES017	101	62	61,4	95	94,1	32,7	101	100,0	101	100,0	5,9	0,0	0,0	0,0
ES018	258	62	24,0	256	99,2	75,2	258	100,0	258	100,0	0,8	0,0	0,0	0,0
ES020	620	599	96,6	620	100,0	3,4	620	100,0	620	100,0	0,0	0,0	0,0	0,0
ES030	198	192	97,0	198	100,0	3,0	198	100,0	198	100,0	0,0	0,0	0,0	0,0
ES040	244	215	88,1	244	100,0	11,9	244	100,0	244	100,0	0,0	0,0	0,0	0,0
ES050	325	282	86,8	324	99,7	12,9	324	99,7	324	99,7	0,0	0,3	0,0	0,0
ES060	130	116	89,2	130	100,0	10,8	130	100,0	130	100,0	0,0	0,0	0,0	0,0
ES063	67	30	44,8	52	77,6	32,8	52	77,6	59	88,1	10,4	0,0	0,0	0,0
ES064	51	22	43,1	31	60,8	17,6	31	60,8	46	90,2	29,4	0,0	0,0	0,0
ES070	84	77	91,7	79	94,0	2,4	79	94,0	84	100,0	6,0	0,0	0,0	0,0
ES080	289	159	55,0	281	97,2	42,2	281	97,2	289	100,0	2,8	0,0	0,0	0,0
ES091	705	0	0,0	622	88,2	88,2	622	88,2	634	89,9	1,7	0,3	0,0	0,0
ES100	268	140	52,2	258	96,3	44,0	258	96,3	268	100,0	3,7	0,0	0,0	0,0
ES110	158	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES120	5	2	40,0	2	40,0	0,0	2	40,0	5	100,0	0,0	0,0	0,0	0,0
ES122	5	5	100,0	5	100,0	0,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES123	5	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES124	6	6	100,0	6	100,0	0,0	6	100,0	6	100,0	0,0	0,0	0,0	0,0
ES125	5	5	100,0	5	100,0	0,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES126	4	4	100,0	4	100,0	0,0	4	100,0	4	100,0	0,0	0,0	0,0	0,0
ES127	3	3	100,0	3	100,0	0,0	3	100,0	3	100,0	0,0	0,0	0,0	0,0
ES150	2	0	0,0	2	100,0	100,0	2	100,0	2	100,0	0,0	0,0	0,0	0,0
ES160	2	2	100,0	2	100,0	0,0	2	100,0	2	100,0	0,0	0,0	0,0	0,0
Total	**4184**	**2378**	**56,8**	**3830**	**91,5**	**34,7**	**3869**	**92,5**	**3936**	**94,1**	**2,5**	**0,1**	**0,0**	**0,0**

Table 6.9: Natural surface water bodies: chemical status in 2009 and expected status in 2015, 2012 and 2027

Source: WISE and RBMPs; information provided by Spain (2014). As regards the increase of the number of Natural SWB in good chemical status by 2015, the figures of Table 6.9 might be misleading, as they include the expected re-classification of the currently "unknown" status of water bodies (see Table 6.3).

RBD	Total	GW chemical status					Good chemical status 2021		Good chemical status 2027		GW chemical exemptions (% of all GWBs)			
		Good or better 2009		Good or better 2015		Increase 2009 -2015					Art 4(4)	Art 4(5)	Art 4(6)	Art 4(7)
		No.	%	No.	%	%	No.	%	No.	%	%	%	%	%
ES010	6	5	83,3	5	83,3	0,0	6	100,0	6	100,0	16,7	0,0	0,0	0,0
ES014	18	18	100,0	18	100,0	0,0	18	100,0	18	100,0	0,0	0,0	0,0	0,0
ES017	28	26	92,9	27	96,4	3,6	28	100,0	28	100,0	3,6	0,0	0,0	0,0
ES018	20	20	100,0	20	100,0	0,0	20	100,0	20	100,0	0,0	0,0	0,0	0,0
ES020	64	50	78,1	48	75,0	-3,1	48	75,0	50	78,1	3,1	21,9	0,0	0,0
ES030	24	18	75,0	18	75,0	0,0	22	91,7	24	100,0	25,0	0,0	0,0	0,0
ES040	20	7	35,0	7	35,0	0,0	7	35,0	20	100,0	65,0	0,0	0,0	0,0
ES050	60	44	73,3	49	81,7	8,3	55	91,7	60	100,0	18,3	0,0	0,0	0,0
ES060	67	32	47,8	46	68,7	20,9	55	82,1	62	92,5	23,9	7,5	0,0	0,0
ES063	14	5	35,7	7	50,0	14,3	7	50,0	12	85,7	35,7	14,3	0,0	0,0
ES064	4	2	50,0	2	50,0	0,0	4	100,0	4	100,0	50,0	0,0	0,0	0,0
ES070	63	39	61,9	37	58,7	-3,2	38	60,3	53	84,1	25,4	15,9	0,0	0,0
ES080	90	63	70,0	63	70,0	0,0	72	80,0	87	96,7	26,7	3,3	0,0	0,0
ES091	105	82	78,1	82	78,1	0,0	82	78,1	103	98,1	20,0	1,9	0,0	0,0
ES100	39	16	41,0	18	46,2	5,1	18	46,2	39	100,0	53,8	0,0	0,0	0,0
ES110	90	55	61,1	64	71,1	10,0	75	83,3	87	96,7	25,6	3,3	0,0	0,0
ES120	10	2	20,0	2	20,0	0,0	2	20,0	2	20,0	0,0	80,0	0,0	0,0
ES122	4	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	100,0	0,0	0,0
ES123	1	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES124	4	3	75,0	3	75,0	0,0	4	100,0	4	100,0	25,0	0,0	0,0	0,0
ES125	5	4	80,0	4	80,0	0,0	4	80,0	5	100,0	20,0	0,0	0,0	0,0
ES126	5	3	60,0	5	100,0	40,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES127	3	0	0,0	0	0,0	0,0	0	0,0	3	100,0	100,0	0,0	0,0	0,0
ES150	1	0	0,0	0	0,0	0,0	1	100,0	1	100,0	100,0	0,0	0,0	0,0
ES160	3	0	0,0	0	0,0	0,0	3	100,0	3	100,0	100,0	0,0	0,0	0,0
Total	**748**	**494**	**66,0**	**525**	**70,2**	**4,1**	**574**	**76,7**	**696**	**93,0**	**22,9**	**6,8**	**0,0**	**0,0**

Table 6.10: Groundwater bodies: chemical status in 2009 and expected status in 2015, 2012 and 2027
Source: WISE and RBMPs; information provided by Spain (2014).

RBD	Total	Groundwater quantitative status					Good quantitative status 2021		Good quantitative status 2027		GW quantitative exemptions (% of all GWBs)			
		Good or better 2009		Good or better 2015		Increase 2009 -2015					Art 4(4)	Art 4(5)	Art 4(6)	Art 4(7)
		No.	%	No.	%	%	No.	%	No.	%	%	%	%	%
ES010	6	6	100,0	6	100,0	0,0	6	100,0	6	100,0	0,0	0,0	0,0	0,0
ES014	18	18	100,0	18	100,0	0,0	18	100,0	18	100,0	0,0	0,0	0,0	0,0
ES017	28	28	100,0	28	100,0	0,0	28	100,0	28	100,0	0,0	0,0	0,0	0,0
ES018	20	20	100,0	20	100,0	0,0	20	100,0	20	100,0	0,0	0,0	0,0	5,0
ES020	64	59	92,2	59	92,2	0,0	59	92,2	60	93,8	1,6	6,3	0,0	0,0
ES030	24	24	100,0	24	100,0	0,0	24	100,0	24	100,0	0,0	0,0	0,0	0,0
ES040	20	9	45,0	9	45,0	0,0	9	45,0	20	100,0	55,0	0,0	0,0	0,0
ES050	60	42	70,0	43	71,7	1,7	52	86,7	60	100,0	28,3	0,0	0,0	0,0
ES060	67	35	52,2	45	67,2	14,9	54	80,6	67	100,0	32,8	0,0	0,0	0,0
ES063	14	3	21,4	14	100,0	78,6	14	100,0	14	100,0	0,0	0,0	0,0	0,0
ES064	4	3	75,0	4	100,0	25,0	4	100,0	4	100,0	0,0	0,0	0,0	0,0
ES070	63	22	34,9	22	34,9	0,0	24	38,1	63	100,0	65,1	0,0	0,0	0,0
ES080	90	60	66,7	60	66,7	0,0	63	70,0	90	100,0	33,3	0,0	0,0	0,0
ES091	105	104	99,0	104	99,0	0,0	104	99,0	105	100,0	1,0	0,0	0,0	0,0
ES100	39	33	84,6	37	94,9	10,3	37	94,9	39	100,0	5,1	0,0	0,0	0,0
ES110	90	53	58,9	88	97,8	38,9	89	98,9	90	100,0	2,2	0,0	0,0	0,0
ES120	10	1	10,0	1	10,0	0,0	10	100,0	10	100,0	90,0	0,0	0,0	0,0
ES122	4	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	100,0	0,0	0,0
ES123	1	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES124	4	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	100,0	0,0	0,0
ES125	5	5	100,0	5	100,0	0,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES126	5	5	100,0	5	100,0	0,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES127	3	3	100,0	3	100,0	0,0	3	100,0	3	100,0	0,0	0,0	0,0	0,0
ES150	1	0	0,0	0	0,0	0,0	1	100,0	1	100,0	100,0	0,0	0,0	0,0
ES160	3	0	0,0	0	0,0	0,0	3	100,0	3	100,0	100,0	0,0	0,0	0,0
Total	**748**	**533**	**71,3**	**595**	**79,5**	**8,3**	**632**	**84,5**	**735**	**98,3**	**18,7**	**1,6**	**0,0**	**0,1**

Table 6.11: Groundwater bodies: quantitative status in 2009 and expected status in 2015, 2012 and 2027
Source: WISE and RBMPs; information provided by Spain (2014).

RBD	Total HMWB and AWB	Ecological potential					Good ecological potential 2021		Good ecological potential 2027		Ecological exemptions (% of all HMWB/AWB)			
		Good or better 2009		Good or better 2015		Increase 2009 -2015					Art 4(4)	Art 4(5)	Art 4(6)	Art 4(7)
		No.	%	No.	%	%	No.	%	No.	%	%	%	%	%
ES010	51	25	49,0	43	84,3	35,3	49	96,1	50	98,0	13,7	2,0	0,0	0,0
ES014	40	11	27,5	25	62,5	35,0	31	77,5	40	100,0	37,5	0,0	0,0	0,0
ES017	37	7	18,9	19	51,4	32,4	37	100,0	37	100,0	48,6	0,0	0,0	0,0
ES018	35	15	42,9	20	57,1	14,3	33	94,3	35	100,0	42,9	0,0	0,0	5,7
ES020	90	28	31,1	40	44,4	13,3	41	45,6	71	78,9	34,4	21,1	0,0	0,0
ES030	126	49	38,9	63	50,0	11,1	84	66,7	106	84,1	34,1	10,3	0,0	0,0
ES040	69	18	26,1	21	30,4	4,3	21	30,4	69	100,0	69,6	0,0	0,0	0,0
ES050	118	63	53,4	99	83,9	30,5	110	93,2	118	100,0	16,1	0,0	0,0	0,0
ES060	45	20	44,4	30	66,7	22,2	35	77,8	41	91,1	24,4	8,9	8,9	0,0
ES063	30	9	30,0	11	36,7	6,7	17	56,7	25	83,3	46,7	0,0	0,0	0,0
ES064	17	7	41,2	11	64,7	23,5	11	64,7	17	100,0	35,3	0,0	0,0	0,0
ES070	30	14	46,7	15	50,0	3,3	19	63,3	30	100,0	50,0	0,0	0,0	0,0
ES080	60	26	43,3	26	43,3	0,0	31	51,7	60	100,0	56,7	0,0	0,0	0,0
ES091	116	0	0,0	2	1,7	1,7	2	1,7	2	1,7	0,0	0,0	0,0	0,0
ES100	78	11	14,1	24	30,8	16,7	24	30,8	78	100,0	69,2	0,0	0,0	0,0
ES110	14	4	28,6	4	28,6	0,0	4	28,6	4	28,6	0,0	0,0	0,0	0,0
ES120	1	0	0,0	0	0,0	0,0	0	0,0	1	100,0	0,0	0,0	0,0	0,0
ES122	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ES123	1	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES124	5	4	80,0	5	100,0	20,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES125	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ES126	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ES127	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ES150	1	0	0,0	0	0,0	0,0	1	100,0	1	100,0	100,0	0,0	0,0	0,0
ES160	2	0	0,0	1	50,0	50,0	2	100,0	2	100,0	50,0	0,0	50,0	0,0
Total	**966**	**311**	**32,2**	**459**	**47,5**	**15,3**	**557**	**57,7**	**792**	**82,0**	**34,4**	**3,8**	**0,5**	**0,2**

Table 6.12: Heavily modified and artificial water bodies: ecological potential in 2009 and expected ecological potential in 2015, 2012 and 2027
Source: WISE and RBMPs; information provided by Spain (2014).

RBD	Total HMWB and AWB	Chemical status					Good chemical status 2021		Good chemical status 2027		Chemical exemptions (% of all HMWB/AWB)			
		Good or better 2009		Good or better 2015		Increase 2009 -2015					Art 4(4)	Art 4(5)	Art 4(6)	Art 4(7)
		No.	%	No.	%	%	No.	%	No.	%	%	%	%	%
ES010	51	17	33,3	51	100,0	66,7	51	100,0	51	100,0	0,0	0,0	0,0	0,0
ES014	40	26	65,0	29	72,5	7,5	29	72,5	33	82,5	10,0	17,5	0,0	0,0
ES017	37	19	51,4	30	81,1	29,7	37	100,0	37	100,0	18,9	0,0	0,0	0,0
ES018	35	19	54,3	33	94,3	40,0	34	97,1	35	100,0	5,7	0,0	0,0	0,0
ES020	90	87	96,7	90	100,0	3,3	90	100,0	90	100,0	0,0	0,0	0,0	0,0
ES030	126	121	96,0	126	100,0	4,0	126	100,0	126	100,0	0,0	0,0	0,0	0,0
ES040	69	53	76,8	69	100,0	23,2	69	100,0	69	100,0	0,0	0,0	0,0	0,0
ES050	118	101	85,6	117	99,2	13,6	117	99,2	118	100,0	0,8	0,0	0,0	0,0
ES060	45	40	88,9	45	100,0	11,1	45	100,0	45	100,0	0,0	0,0	0,0	0,0
ES063	30	20	66,7	26	86,7	20,0	26	86,7	28	93,3	6,7	0,0	0,0	0,0
ES064	17	6	35,3	10	58,8	23,5	10	58,8	17	100,0	41,2	0,0	0,0	0,0
ES070	30	20	66,7	22	73,3	6,7	22	73,3	30	100,0	26,7	0,0	0,0	0,0
ES080	60	22	36,7	51	85,0	48,3	51	85,0	60	100,0	15,0	0,0	0,0	0,0
ES091	116	0	0,0	2	1,7	1,7	2	1,7	2	1,7	0,0	0,0	0,0	0,0
ES100	78	37	47,4	60	76,9	29,5	60	76,9	78	100,0	23,1	0,0	0,0	0,0
ES110	14	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES120	1	0	0,0	0	0,0	0,0	0	0,0	1	100,0	0,0	0,0	0,0	0,0
ES122	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ES123	1	0	0,0	0	0,0	0,0	0	0,0	0	0,0	0,0	0,0	0,0	0,0
ES124	5	4	80,0	5	100,0	20,0	5	100,0	5	100,0	0,0	0,0	0,0	0,0
ES125	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ES126	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ES127	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ES150	1	0	0,0	0	0,0	0,0	1	100,0	1	100,0	100,0	0,0	0,0	0,0
ES160	2	0	0,0	2	100,0	100,0	2	100,0	2	100,0	0,0	0,0	0,0	0,0
Total	**966**	**592**	**61,3**	**768**	**79,5**	**18,2**	**777**	**80,4**	**828**	**85,7**	**6,1**	**0,7**	**0,0**	**0,0**

Table 6.13: Heavily modified and artificial water bodies: chemical status in 2009 and expected status in 2015, 2012 and 2027.
Source: WISE and RBMPs; information provided by Spain (2014).

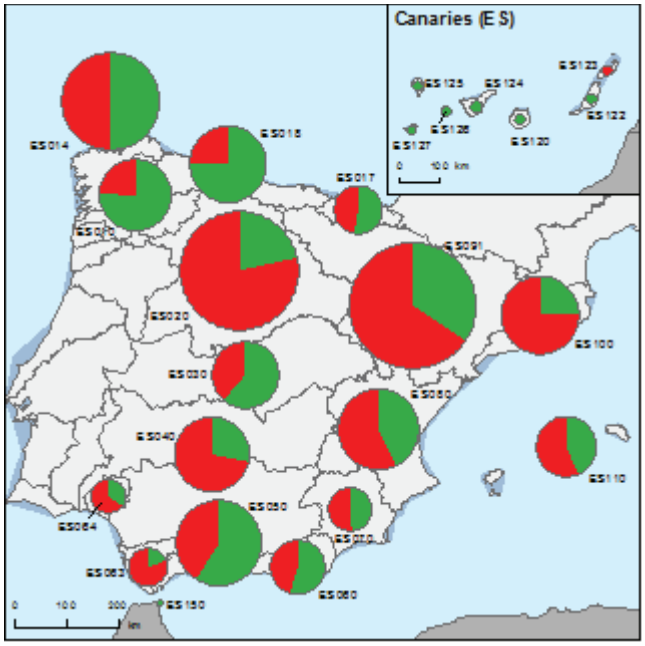


Figure 6.1: Map of ecological status of natural surface water bodies 2009

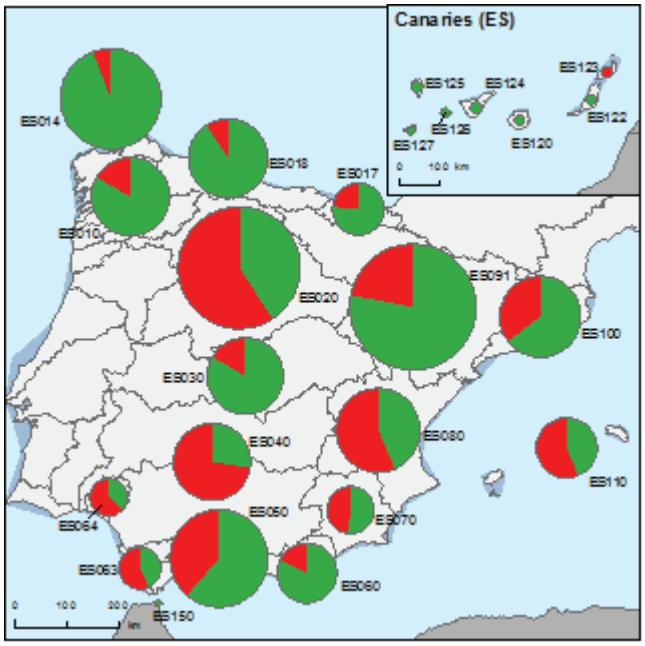


Figure 6.2: Map of ecological status of natural surface water bodies 2015

Good or better
Less than Good or Unknown
River Basin Districts
Countries outside EU

Source: WISE, RBMPs, Eurostat (country borders); information provided by Spain.

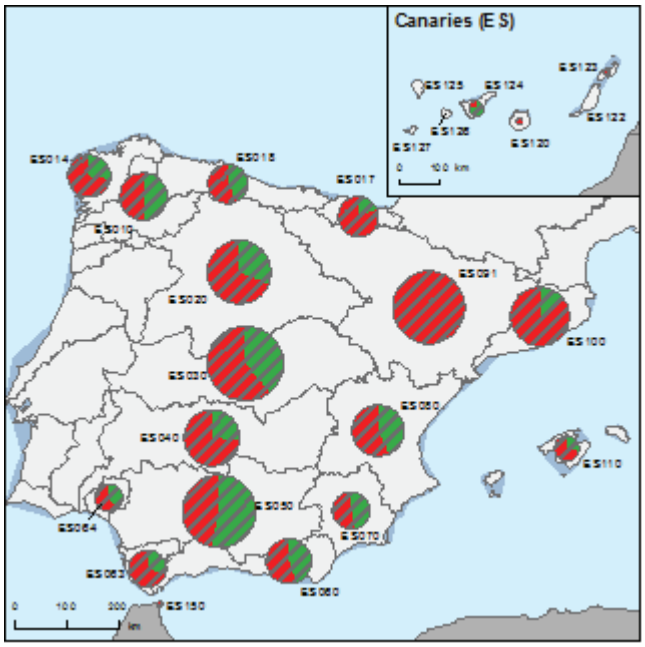


Figure 6.3: Map of ecological potential of artificial and heavily modified water bodies 2009

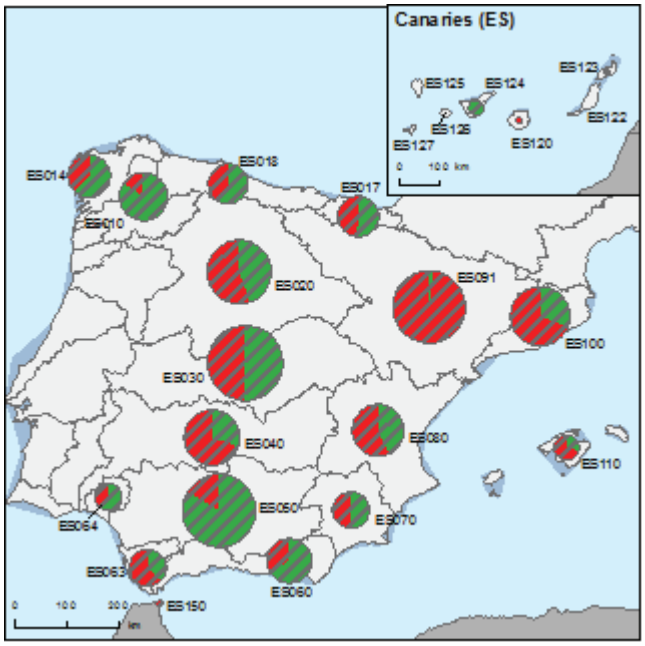


Figure 6.4: Map of ecological potential of artificial and heavily modified water bodies 2015

Good or better
Less than Good or Unknown
River Basin Districts
Countries outside EU

Source: WISE, RBMPs, Eurostat (country borders); information provided by Spain.

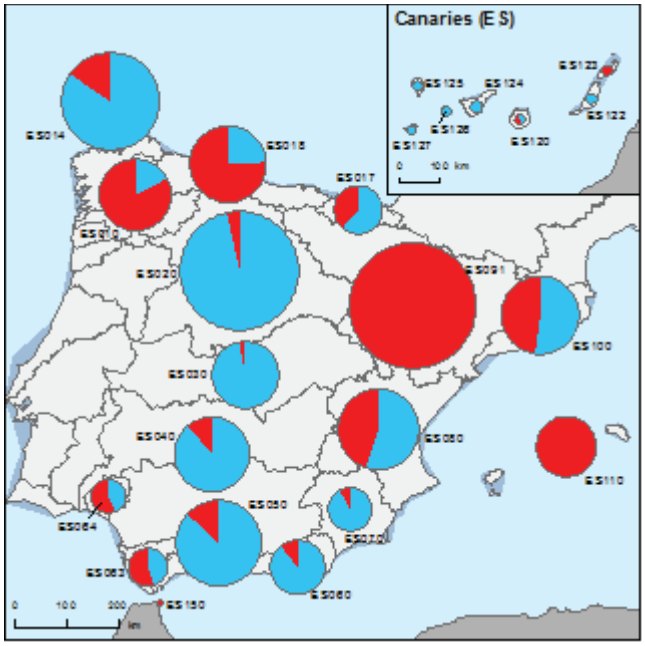


Figure 6.5: Map of chemical status of natural surface water bodies 2009

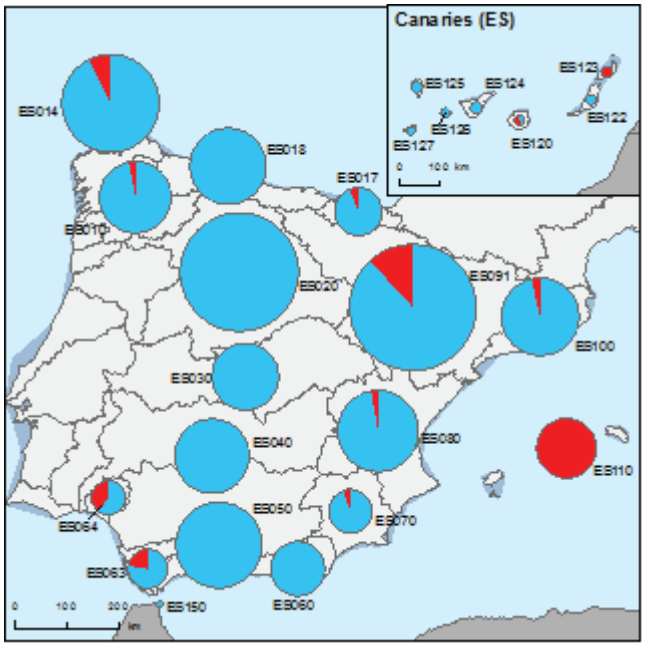


Figure 6.6: Map of chemical status of natural surface water bodies 2015

Good

Failing to achieve good or Unknown

River Basin Districts

Countries outside EU

Source: WISE, RBMPs, Eurostat (country borders); information provided by Spain.

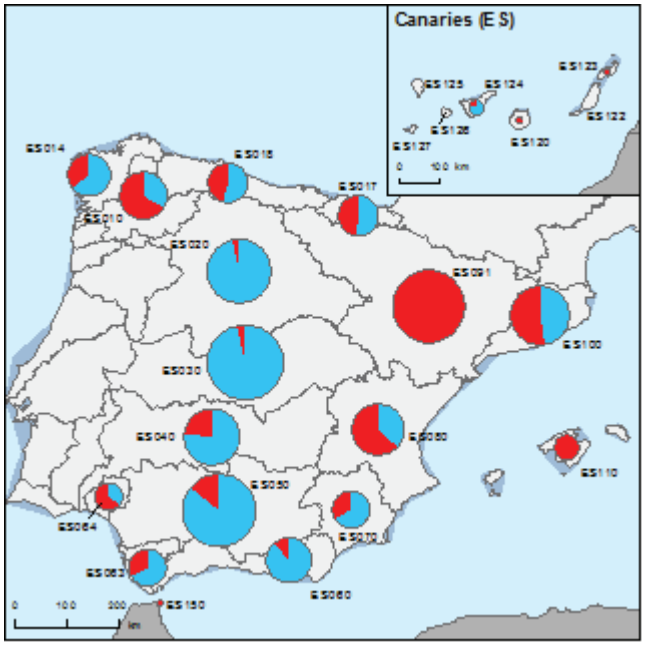


Figure 6.7: Map of chemical status of artificial and heavily modified water bodies 2009

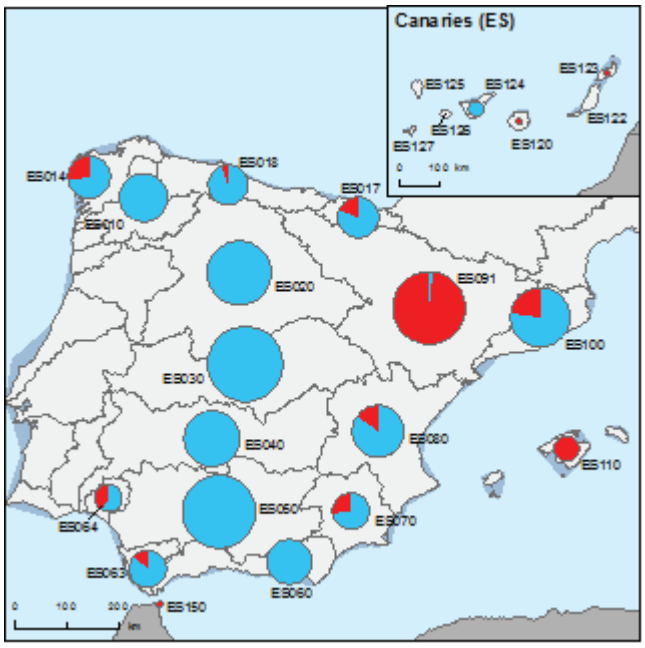


Figure 6.8: Map of chemical status of artificial and heavily modified water bodies 2015

Good

Failing to achieve good or Unknown

River Basin Districts

Countries outside EU

Source: WISE, RBMPs, Eurostat (country borders); information provided by Spain.

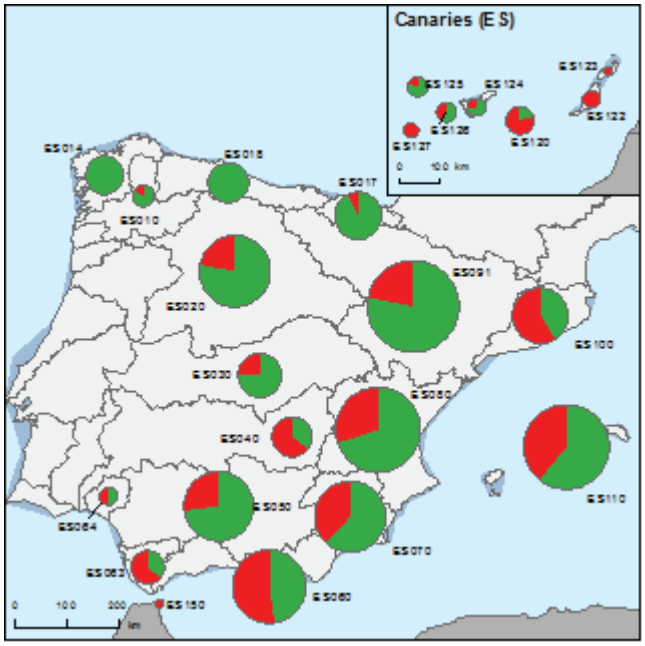


Figure 6.9: Map of chemical status of groundwater bodies 2009

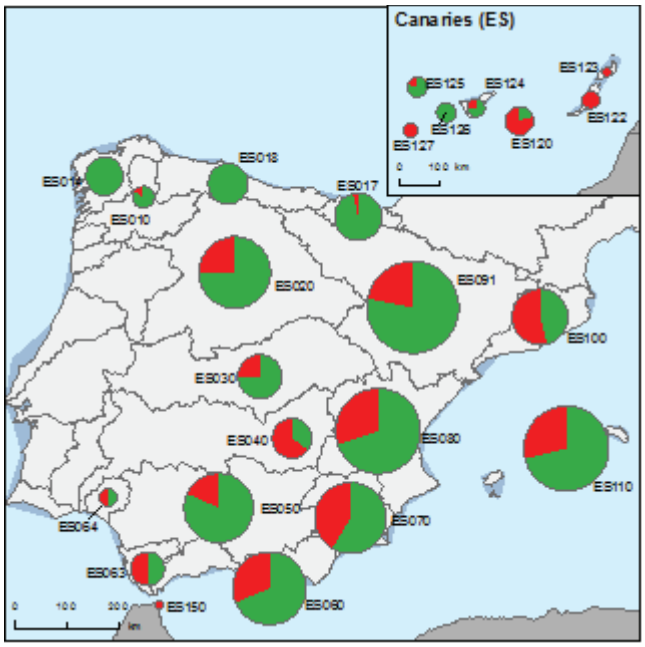


Figure 6.10: Map of chemical status of groundwater bodies 2015

Good

Less than Good or Unknown

River Basin Districts

Countries outside EU

Source: WISE, RBMPs, Eurostat (country borders); information provided by Spain.

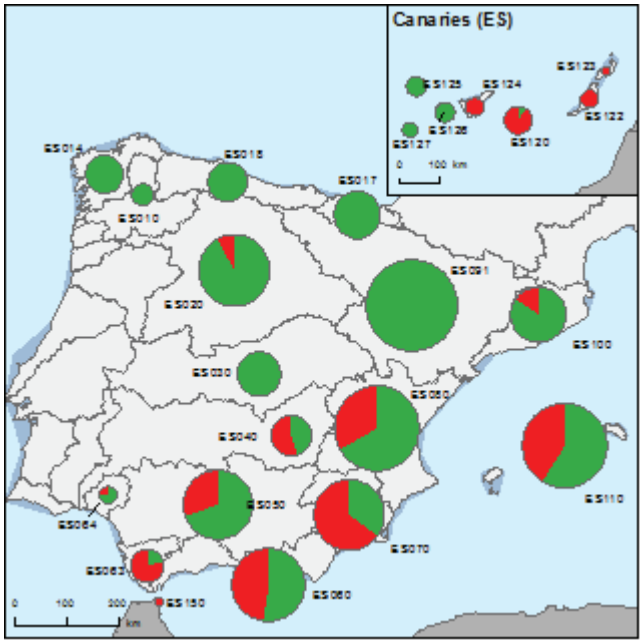


Figure 6.11: Map of quantitative status of groundwater bodies 2009

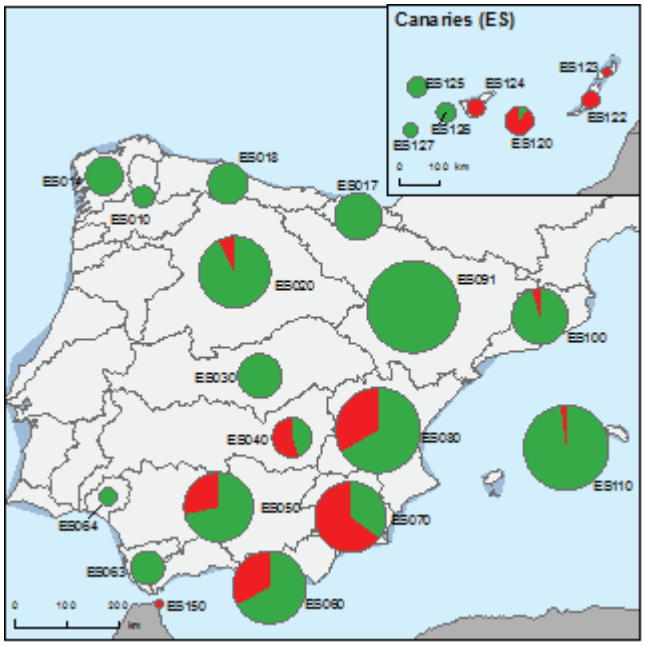


Figure 6.12: Map of quantitative status of groundwater bodies 2015

Good

Less than Good or Unknown

River Basin Districts

Countries outside EU

Source: WISE, RBMPs, Eurostat (country borders); information provided by Spain.

7 ASSESSMENT OF ECOLOGICAL STATUS OF SURFACE WATERS

The IPH (5.1.2) establishes a common baseline for the status assessment which has been implemented, in general, in all RBDs[20]. The assessment framework for ecological status is however incomplete as the IPH does not include boundary values for all quality elements, water categories and types. Moreover, the way the boundaries are set is not binding for RBDs. The IPH states that the boundaries included have to be used "in general" and RBDs can depart from them if justified in the RBMP. In addition, the IPH exempt the application of the boundaries for biological quality elements in case of prolonged drought, which is not in line with the WFD and ignores the mechanisms that the WFD includes to handle such exceptional meteorological situations (Article 4(6)). Finally, the values can be different depending on the sampling protocol. All these flexibilities built in the IPH lead to lack of transparency and clarity on what is actually the assessment framework applied by each RBD[21].

In principle the normative part of the RBMPs include the boundaries for good status for the types in each RBD. In some cases the use of the boundaries are qualified in a way that is not in line with WFD, such as in ES070 (Article 20.2: "the reference conditions will not be considered in the assessment of good status if failure is due only to natural conditions"; one-out all-out is not applied to the IPS diatom index). In ES030 Tajo and ES040 Guadiana some boundaries in the normative part of the RBMP have been significantly changed to less protective values than the IPH values (e.g. for types 5 and 8). On the other hand ES091 Ebro and ES070 Segura use stricter values for some types (e.g. type 12) than ES080 Jucar and ES030 Tajo. The good-moderate boundary values for ES100 are also different for the same types.

It has not been possible to find a coherent justification for such discrepancies. The values used should have reflected the legally binding boundaries of the 2008 Commission Decision on Intercalibration[22]. The translation of the intercalibration results into the Spanish classification scheme is unclear. The purpose of the typology is to group water bodies with the same abiotic characteristics and therefore sharing reference conditions and boundaries. The discrepancies appear to indicate that either typology is not adequate for the purpose (it should be tested against biological data to ensure consistency) or the boundaries used by the RBDs are not consistent. The reference conditions seem to vary as well between RBDs for the same types.

In general, all RBMPs include (standardised) general statements on the legal and theoretical framework for the classification of ecological status; but not necessarily information on the practical steps undertaken (e.g. the non-consideration of certain BQEs, like fish) or detailed information on classification per water body.

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[20] As indicated earlier for other aspects of implementation, it is not clear to what extent the intra-community RBDs have used the IPH.

[21] The Spanish authorities informed that work is on-going on a draft Royal Decree to consolidate the framework for the assessment of status.

[22] In the meantime additional results of the intercalibration process became available and the Commission Decision 2008/915/EC has been replaced by a new Decision 2013/480/EU, to be considered for the 2015 update of the RBMPs.

7.1 Assessment methods

The IPH (5.1.2 and Annex III) shows that there are some important gaps in the classification system:

- For RW there is no classification system for macrophytes (QE1-2-3) and fish (QE1-4); phytoplankton (QE1-1) has been considered as not relevant for Spanish river types, although the technical justification provided has not been considered sufficient to discard this quality element from all Spanish rivers[23];
- For LW only phytoplankton (QE1-1) is developed for reservoirs; fish (QE1-4) has been considered as not relevant for Spanish lakes, although the technical justification provided has not been considered sufficient to discard this quality element[23].
- For TW only benthic fauna is developed (QE1-3, M-AMBI) and phytoplankton (QE1-1) is partly developed (chlorophyll a);
- For CW the system is fully developed.

Of the above-mentioned, it is particularly worrying that QE1-4 (fish) has not been developed, as this BQE is particularly relevant for assessing many of the pressures, in particular water abstraction, hydrological alteration, morphological changes and pollution.

[23] Discussed at the ECOSTAT Working Group in 2014.

	Rivers							Lakes							Transitional							Coastal					
	Phytoplankton	Macrophytes	Phytobenthos	Benthic invertebrates	Fish	Physico-Chemical	Hydromorphological	Phytoplankton	Macrophytes	Phytobenthos	Benthic invertebrates	Fish	Physico-Chemical	Hydromorphological	Phytoplankton	Macroalgae	Angiosperms	Benthic invertebrates	Fish	Physico-Chemical	Hydromorphological	Phytoplankton	Macroalgae	Angiosperms	Benthic invertebrates	Physico-Chemical	Hydromorphological
ES010																										
ES014																										
ES017																										
ES018																										
ES020															-	-	-	-	-	-	-	-	-	-	-	-
ES030															-	-	-	-	-	-	-	-	-	-	-	-
ES040																										
ES050																										
ES060																										
ES063																										
ES064																										
ES070																										
ES080																										
ES091																										
ES100																										
ES110								-	-	-	-	-	-	-												
ES120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
ES122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
ES123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
ES124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
ES125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
ES126	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
ES127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
ES150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
ES160								-	-	-	-	-	-	-	-	-	-	-	-	-	-					

Table 7.1.1 Availability of biological assessment methods as reflected in the RBMPs. Notes: based on the information presented in the RBMPs and reported in WISE. Green means that a method is available but it does not necessarily mean that it is WFD compliant. If a method is presented but not used the cell is marked in yellow. Spain provided in 2014 updated information showing the progress in the development of some of the methods but it is not reflected here.

Assessment methods developed

Assessment methods partially developed or under development

Assessment methods not developed for BQEs, no information provided on the assessment methods, unclear or inconsistent information provided

\- Water category not relevant

Source: RBMPs and WISE.

There is no homogeneous methodology for grouping of water bodies and the extrapolation of status for non-monitored water bodies. It is not clear how this is done.

The assessment methodology for supporting physico-chemical quality elements has been developed by the IPH Chapter 5.1.2, but still requires further work for being type-specific (including standards for reservoirs, such as on phosphorous) and consistent with the biological boundaries.

The following BQEs have been considered sensitive to the indicated impacts in the RBMPs:

	RW	LW	TW	CW
Nutrient enrichment	1-1 (ES014, ES017, ES018, ES020, ES030, ES040, ES050, ES060, ES070, ES080, ES100) 1-2 (ES014, ES017, ES030, ES040, ES050, ES060, ES070, ES080, ES091, ES100) 1-3 (ES014, ES017, ES030, ES040, ES050, ES060, ES070, ES080, ES091, ES100) 1-4 (ES014, ES017, ES020, ES040, ES060, ES070, ES080, ES100) 1-5 (ES014)	1-1 (ES017, ES030, ES060, ES070, ES080) 1-2 (ES070) 1-3 (ES060) 1-4 (ES017) 1-5 (ES100)	1-1 (ES014, ES060, ES063, ES064, ES070) 1-2 (ES014) 1-3 (ES060, ES064, ES070) 1-4 (ES014) 1-5 (ES100)	1-1 (ES014, ES017, ES060, ES070, ES100) 1-2 (ES014, ES017, ES070) 1-3 (ES017, ES060, ES070)
Organic enrichment	1-1 (ES014, ES017, ES030, ES040, ES050, ES060, ES070, ES100) 1-2 (ES014, ES017, ES030, ES040, ES050, ES060, ES070, ES080, ES091, ES100) 1-3 (ES014, ES017, ES018, ES030, ES040, ES050, ES060, ES070, ES080, ES091, ES100) 1-4 (ES014, ES017, ES040, ES060, ES070, ES080, ES100) 1-5 (ES014, ES018)	1-1 (ES018, ES030, ES070) 1-2 (ES070)	1-1 (ES014, ES018, ES063, ES064, ES070) 1-2 (ES014, ES018) 1-3 (ES018, ES064, ES070) 1-4 (ES014, ES018)	1-1 (ES014, ES017, ES018, ES070, ES100) 1-2 (ES014, ES017, ES018, ES070) 1-3 (ES017, ES018, ES070)
Contamination by priority substances	1-1 (ES014, ES017, ES030, ES050, ES060, ES070) 1-2 (ES014, ES017, ES020, ES030, ES050, ES060, ES070, ES091, ES100) 1-3 (ES014, ES017, ES018, ES020, ES030, ES050, ES060, ES070, ES080, ES091, ES100) 1-4 (ES014, ES017, ES020, ES060, ES070, ES080, ES100) 1-5 (ES014, ES017)	1-1 (ES070) 1-2 (ES070)	1-1 (ES014, ES017, ES018, ES064, ES070) 1-2 (ES014, ES017, ES018) 1-3 (ES017, ES018, ES064, ES070) 1-4 (ES014, ES017, ES018)	1-1 (ES014, ES064, ES070) 1-2 (ES014, ES070) 1-3 (ES064, ES070)
Contaminated sediments	1-1 (ES070) 1-2 (ES070) 1-3 (ES070) 1-4 (ES070)	1-3 (ES080)	1-1 (ES014, ES017) 1-2 (ES014, ES017) 1-3 (ES017) 1-4 (ES014, ES017)	1-1 (ES014, ES070) 1-2 (ES014, ES070) 1-3 (ES070)
Acidification	1-2 (ES080) 1-3 (ES014, ES080) 1-4 (ES080) 1-5 (ES014)			
Saline intrusion	1-1 (ES060) 1-2 (ES060, ES070) 1-3 (ES060, ES070) 1-4 (ES060)	1-2 (ES070)	1-3 (ES070)	1-2 (ES070) 1-3 (ES070)
Elevated temperatures	1-1 (ES080) 1-3 (ES080) 1-4 (ES080)	1-1 (ES080)		

	RW	LW	TW	CW
Altered habitats[24]	1-1 (ES014, ES017, ES030, ES040, ES050, ES060, ES070, ES080) 1-2 (ES014, ES017, ES020, ES030, ES040, ES050, ES060, ES070, ES080, ES100) 1-3 (ES014, ES017, ES018, ES020, ES030, ES040, ES050, ES060, ES070, ES080, ES100) 1-4 (ES014, ES017, ES020, ES040, ES060, ES070, ES080, ES100) 1-5 (ES014, ES017, ES070, ES080)	1-1 (ES018, ES020, ES040, ES060, ES070, ES080) 1-2 (ES020, ES070) 1-3 (ES020, ES040, ES060) 1-4 (ES018, ES020, ES040) 1-5 (ES100)	1-1 (ES014, ES017, ES040) 1-2 (ES014, ES017, ES040) 1-3 (ES017, ES040) 1-4 (ES014, ES017, ES040) 1-5 (ES100)	1-1 (ES014, ES070, ES100) 1-2 (ES014, ES070) 1-3 (ES070)
Other impacts	1-1 (ES030, ES050, ES060, ES070) 1-2 (ES014, ES030, ES040, ES050, ES060, ES070, ES080, ES091, ES100) 1-3 (ES014, ES017, ES018, ES030, ES040, ES050, ES060, ES070, ES080, ES091, ES100) 1-4 (ES014, ES060, ES070, ES080, ES100) 1-5 (ES014, ES017, ES070)	1-1 (ES018, ES030, ES060, ES070) 1-2 (ES070) 1-3 (ES060)	1-1 (ES050) 1-3 (ES050)	1-1 (ES070, ES100) 1-2 (ES070) 1-3 (ES070)

Table 7.1.2: Summary of the BQEs used in operational monitoring in relation to the significant pressures and main impacts on water bodies in RBDs**.** Information provided by Spain (2014).

The linkages established comparing the different RBMPs are varied. It appears that there is no common understanding on how the different quality elements respond to impacts.

7.2 Results

The results show the following distribution of status (see Table 6.8): 1817 natural SWB (43%) are considered in good or better status in 2009; with better than average results in some RBDs (ES010, ES014, ES017, ES018, ES050 and ES060) and even better results in a couple of RBDs (75%: ES010 y ES018). Low percentages of SWB in good or better status (≤25%) are found in ES063, ES020 and ES100.

In general, there is a lack of information about the uncertainties in classification (in particular in the RBMPs, where no RBD raises uncertainty issues) and disparity regarding the confidence on the classification results (reported under WISE). One RBD (ES040) reports 100% classifications as high confidence, despite the fact that its RBMP mentions how lack of data on a specific QE or lack of data on all QE in a specific water body have been handled, e.g. referring to an expert judgment meeting in May 2009, assessing available data, developing trend analyses and thus proposing a classification. ES020 distributes confidence 50:50 between high and low, without providing further information on uncertainties. ES018 classifies almost all water bodies with medium confidence. Other RBDs do not provide any information on confidence.

Though official co-ordination mechanisms are in place and technical co-operation is taking place (explicitly described in the RBMP ES040, and implicitly for ES010, ES020, and ES030), transboundary co-ordination can be improved for classification of status, e.g. the

[24] Note in some RBMPs (e.g. ES014, ES017, ES020, ES050, ES060) the "altered habitats" impacts are related to pollution pressures and not to pressures from "hydromorphological alterations" as originally intended.

Bidasoa river estuary shared between Spain and France reflects how neighbouring water bodies (e.g. ES111T012010 and French Estuarie Bidasoa) are classified with different results (in Spanish plan it fails due to biological status and in French plan due to chemical), leading to different measures.

8 DESIGNATION OF HMWB AND SETTING OF GOOD ECOLOGICAL POTENTIAL (GEP)

8.1 Designation of HMWB

Designation of heavily modified water bodies (HMWB) has generally followed a complete three stepwise approach as established in the national regulation (IPH), based on CIS Guidance Document nº 4. However, some exceptions and gaps should be noted:

- One RBMP (ES110) only provides brief overview information on the results of the final designation, without adding any complementary information on the methodology, and the stepwise assessment.

- In one RBMP (ES014), HMWBs have been established after verification of the preliminary identification (step 2 of 3), and step 3 is still missing. In fact, the RBMP states that "the final designation will be completed when the programme of measures is fully developed".

- In most RBMPs, criteria (or thresholds) for defining significant adverse effects on the use are not clearly stated (though adverse effects are listed; ES080 recognises in one case lack of data to support this test) and expert judgment has been extensively used. ES091 does not provide the results of the assessment of significant adverse effects for transitional water bodies.

- Similarly, the identification of “better environmental options” and analysis criteria for this step are not always clear, may be absent (e.g. ES100, ES110), or too generic and poorly developed (most of the RBMPs include only a few lines of generic statements).

Some RBMPs (e.g. ES040) classify water bodies to be affected by dams currently under construction (Alcollarín, Búrdalo) as HMWBs, instead of justifying a derogation according to WFD Article 4(7).

8.2 Methodology for Good Ecological Potential (GEP)

In most RBMPs, good ecological potential (GEP) has been defined following a general methodology established at national level in the IPH which, in turn, follows the reference-based approach suggested by the Common Implementation Strategy Guidance document number 4. The IPH sets some quality elements, indicators and thresholds for two types of HMWBs:

- Reservoirs: phytoplankton boundaries are given (biomass and composition) for different types of monomictic reservoirs
- Coastal and transitional water bodies affected by ports: boundary values are given for some types of water bodies for phytoplankton (biomass only), pollution by nutrients

and organic matter (same values for all types), turbidity, dissolved oxygen and total hydrocarbons.

The indicators chosen are more linked to water quality than sensitive to the physical modification of the water bodies. Therefore, it is unclear how this scheme can be used to set objectives and drive improvements to ecological condition in HMWBs beyond water quality considerations. From the available information it is not possible to understand the setting of reference values nor to assess how mitigation measures to achieve GEP have been considered.

Some RBMPs establish additional boundaries for HMWBs. For example ES070 includes boundary values for biological quality elements in channelled rivers (although without differentiating typologies). ES080 establishes different values for diatoms IPS index in heavily modified rivers. The rationale of this is again questionable as the IPS index is mainly responding to water quality alterations, and not to physical modification.

More work has apparently been developed for reservoirs that for other categories of HMWBs. In conclusion, a full methodology is still missing.

8.3 Results HMWB and AWB

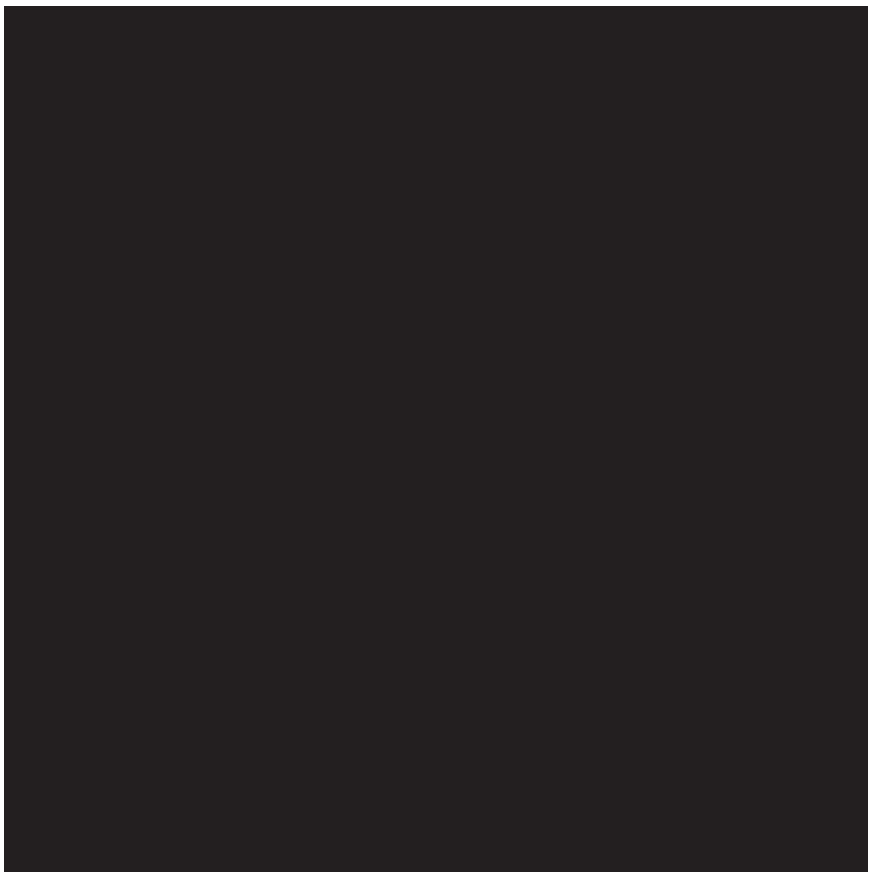

Figure 8.1: Map of percentage Heavily Modified and Artificial water bodies by River Basin District

0 – 5 %
5 – 20 %
20 – 40 %
40 – 60%
60 – 100 %
No data reported

River Basin Districts
Countries outside EU

Source: WISE, Eurostat (country borders).

The overall number of HMWBs is 908. The total number of river HMWBs is 737, 17% of all RWBs (though still significantly below the overall number of large dams in Spain); and the overall number of artificial water bodies (AWBs) is 58 (1% of total SWB). HMWB are relatively important in TW (33%), and several RBDs classify all their TWB as HMWB. AWB refer mainly to the LW category, considering e.g. small reservoirs or ponds that are not connected to rivers.

	RBD	Water category									
		Rivers		Lakes		Transitional water		Coastal water		All water bodies	
		No	% of category	No	% of category	No	% of category	No	% of category	No	%
HMWB	ES010	49	18,1	0	0,0	0	0,0	0	0,0	49	17,6
	ES014	33	8,0	-	-	0	0,0	7	24,1	40	8,7
	ES017	23	21,1	8	72,7	4	28,6	0	0,0	35	25,4
	ES018	27	10,8	0	0,0	5	23,8	1	6,7	33	11,3
	ES020	80	11,5	2	14,3	-	-	-	-	82	11,5
	ES030	116	37,7	0	0,0	-	-	-	-	116	35,8
	ES040	54	21,7	1	1,7	1	25,0	0	0,0	56	17,9
	ES050	102	26,0	1	2,9	13	100,0	0	0,0	116	26,2
	ES060	31	23,3	0	0,0	4	57,1	8	29,6	43	24,6
	ES063	14	21,5	0	0,0	10	100,0	4	33,3	28	28,9
	ES064	8	16,7	0	0,0	6	54,5	2	50,0	16	23,5
	ES070	21	23,3	2	33,3	1	100,0	3	17,6	27	23,7
	ES080	43	14,1	3	15,8	4	100,0	6	27,3	56	16,0
	ES091	63	9,0	43	39,1	3	37,5	0	0,0	109	13,3
	ES100	69	26,4	1	3,7	3	12,0	5	15,2	78	22,5
	ES110	3	3,2	-	-	6	16,7	5	11,9	14	8,1
	ES120	-	-	-	-	-	-	1	16,7	1	16,7
	ES122	-	-	-	-	-	-	0	0,0	0	0,0
	ES123	-	-	-	-	-	-	1	16,7	1	16,7
	ES124	-	-	-	-	-	-	5	45,5	5	45,5
	ES125	-	-	-	-	-	-	0	0,0	0	0,0
	ES126	-	-	-	-	-	-	0	0,0	0	0,0
	ES127	-	-	-	-	-	-	0	0,0	0	0,0
	ES150	-	-	-	-	-	-	1	33,3	1	33,3
	ES160	1	100,0	-	-	-	-	1	33,3	2	50,0
	Total	**737**	**16,8**	**61**	**18,5**	**60**	**33,3**	**50**	**19,2**	**908**	**17,6**
AWB	ES010	0	0,0	2	66,7	-	-	-	-	2	0,7
	ES014	0	0,0	-	-	-	-	-	-	0	0,0
	ES017	0	0,0	2	18,2	-	-	-	-	2	1,4
	ES018	0	0,0	2	28,6	-	-	-	-	2	0,7
	ES020	8	1,1	0	0,0	-	-	-	-	8	1,1
	ES030	1	0,3	9	56,3	-	-	-	-	10	3,1
	ES040	0	0,0	13	22,4	-	-	-	-	13	4,2
	ES050	0	0,0	2	5,7	-	-	-	-	2	0,5

	RBD	Water category									
		Rivers		Lakes		Transitional water		Coastal water		All water bodies	
		No	% of category	No	% of category	No	% of category	No	% of category	No	%
	ES060	1	0,8	1	12,5	-	-	-	-	2	1,1
	ES063	0	0,0	2	20,0	-	-	-	-	2	2,1
	ES064	1	2,1	0	0,0	-	-	-	-	1	1,5
	ES070	0	0,0	3	50,0	-	-	-	-	3	2,6
	ES080	4	1,3	0	0,0	-	-	-	-	4	1,1
	ES091	2	0,3	5	4,5	-	-	-	-	7	0,9
	ES100	0	0,0	0	0,0	-	-	-	-	0	0,0
	ES110	0	0,0	-	-	-	-	-	-	0	0,0
	ES120	-	-	-	-	-	-	-	-	0	0,0
	ES122	-	-	-	-	-	-	-	-	0	0,0
	ES123	-	-	-	-	-	-	-	-	0	0,0
	ES124	-	-	-	-	-	-	-	-	0	0,0
	ES125	-	-	-	-	-	-	-	-	0	0,0
	ES126	-	-	-	-	-	-	-	-	0	0,0
	ES127	-	-	-	-	-	-	-	-	0	0,0
	ES150	-	-	-	-	-	-	-	-	0	0,0
	ES160	0	0,0	-	-	-	-	-	-	0	0,0
	Total	**17**	**0,4**	**41**	**12,5**	**-**	**-**	**-**	**-**	**58**	**1,1**

Table 8.1.1: Number and percentage of HMWBs and AWBs
Source: WISE; information provided by Spain.

9 ASSESSMENT OF CHEMICAL STATUS OF SURFACE WATER

Chemical status (Tables 6.3 and 6.9; Figures 6.5 and 6.7) is good in the majority of SWB for most Spanish RBDs. Some RBDs report large numbers of SWBs in "unknown" status, which are significant (>100 water bodies) for ES010, ES018, ES080, ES091, ES100 and ES110; and the proportions are also high (>30 %) for ES063, ES123, and ES150. According to additional information provided by Spain (2014), in ES010 and ES018 water bodies which were identified as not subject to direct discharges from priority substances were not monitored and were classified as "unknown" instead of "good". This seems to ignore important potential sources of pollution such as atmospheric deposition or urban waste water discharges. It is recognised that in ES060, ES080, ES100 and ES110 the monitoring network might be insufficient. No explanation has been provided for ES091, which alone sums almost 40% of all SWBs with "unknown" chemical status, including rivers, and all transitional and coastal water bodies. At least for these RBDs, the assessment is incomplete, which has a direct impact on the subsequent planning steps, and is not developed according to the requirements of the WFD that requests a fully compliant monitoring and classification system in place by 2006.

9.1 Methodology

The methodology for chemical assessment is reflected in the transposition of the EQS Directive (Royal Decree 60/2011), as well as in the RPH (Annex IV) and IPH (Chapter 5.1.2.2).

9.2 Substances causing exceedances

The substances most commonly causing exceedance of environmental quality standards are heavy metals, present mainly in ES014 (in this RBD industrial pollutants are also relevant), ES017, ES020, ES064 and ES100, where mining and industrial activities are quite prevalent. Pesticides cause exceedances mainly in ES050, ES080 and ES100, which are characterised by intensive agriculture and industry. Pesticides, as substances causing exceedances have not been reported significantly for other basins with intensive agriculture (e.g. ES040, ES060, ES063 and ES064). Table 9.2.1 includes a list of pollutants causing exceedance in the RBDs.

Lead and mercury are the substances found in the largest number of WBs (47 and 49 respectively), followed by nickel and various pesticides.

Substance causing exceedance	Exceedances per RBD																								
	ES010	ES014	ES017	ES018	ES020	ES030	ES040	ES050	ES060	ES063	ES064	ES070	ES080	ES091	ES100	ES110	ES120	ES122	ES123	ES124	ES125	ES126	ES127	ES150	Sum
1. Heavy metals - aggregated										2	18	3			4										27
1.1 Cadmium	2	2	5		1			1		1	14	1	2		2										31
1.2 Lead		24	5	1	3			1			2	5	2	2	2										47
1.3 Mercury		10	3	1	19			3		2	4	2	1	4											49
1.4 Nickel	4		3			3				1	4	4	4	1	18										42
2 Pesticides – aggregated	1														4										5
2.1 Alachlor				1			1							1											3
2.2. Atrazina														1											1
2.3 Chlorpyriphos					1			2	1	3			12	4	4										27
2.4 Chlorvenfinphos								1							2										3
2.5 Diuron	1							14			1														16
2.6 Endosulfan						1		3				2		4											10
2.7 Isoproturon					1																				1
2.8 Hexachlorocyclohexane	2		2			5			1			2	2	2	13										29
2.9 Pentachlorobenzene			1							1															2
2.10 Simazine						1	1								2										4
3 Industrial Pollutants - aggregated						3									4										7
3.1 Anthracene		1																							1
3.7 Dichloromethane				2																					2
3.10 Nonylphenol		1									2				37										40
3.11 Octylphenol		2									2		2		6										12
3.12. Tetracloroetileno													2												2
3.14. Triclorometano													1		2										3
4 Other pollutants - aggregated		6				1						2			4									1	14
4.1 Aldrin	1																								1
4.6 para-para-DDT			1			2							1												4
4.7 Fluoranthene		1		1																					2

Substance causing exceedance	Exceedances per RBD																								
	ES010	ES014	ES017	ES018	ES020	ES030	ES040	ES050	ES060	ES063	ES064	ES070	ES080	ES091	ES100	ES110	ES120	ES122	ES123	ES124	ES125	ES126	ES127	ES150	Sum
4.8. Hexaclorobenzeno														2											2
4.12 Benzo(a)pyrene		3																							3
4.13 Benzo(b)fluoranthene		5		1																					6
4.14 Benzo(k)fluoranthene		5		1																					6
4.15 Benzo(g,h,i)perylene		7																							7
4.16 Indeno(1,2,3-cd)pyrene		7												1											8
Totals	11	74	20	8	25	16	2	25	2	10	47	21	29	22	104	0	0	0	0	0	0	0	0	1	417

Table 9.2.1: Substances responsible for exceedances
Source: Information provided by Spain (2014)

Although data have been extracted from WISE, it is difficult to track substances in the reported information, and this is particularly true for the RBMPs, where lists of legislative thresholds are provided but little or no information on the pollutants present in the RBD, or those causing poor chemical status (e.g. ES018).

In general there are large differences in the number of exceedances in different RBDs that appear related to different intensities of monitoring rather than reflecting differences in the occurrence of substances.

9.3 Mixing zones

Only in ES100 mixing zones are used. This RBMP states that mixing zones have been considered for rivers and coastal waters. In coastal waters the zones have a radius of 50 metres around the outflow of the submarine emissary. In rivers the mixing zones comprise a stretch of river from the wastewater discharge point to 50 metres downstream.

10 ASSESSMENT OF GROUNDWATER STATUS

Approximately 57% of the 748 Spanish GWBs are in good status, and the rest in poor or unknown status (11 for quantitative status, according to Table 6.6; and 8 for chemical status, according to table 6.5).

Status	Poor chemical status	Poor quantitative status	Good status	Total
ES010	1	0	5	6
ES014	0	0	18	18
ES017	2	0	26	28
ES018	0	0	20	20
ES020	14	5	48	64
ES030	6	0	18	24
ES040	13	11	5	20
ES050	16	18	33	60
ES060	35	32	27	67
ES063	7	3	5	14
ES064	2	0	2	4
ES070	24	41	16	63
ES080	27	30	50	90
ES091	23	1	82	105
ES100	23	6	14	39
ES110	35	37	47	90
ES120	8	9	0	10
ES122	4	4	0	4
ES123	0	0	0	1
ES124	1	4	0	4
ES125	0	0	4	5
ES126	2	0	3	5
ES127	0	0	0	3
ES150	0	0	0	1
ES160	3	3	0	3
Total	**246**	**204**	**423**	**748**

Table 10.1: Number of groundwater bodies and their status
Source: WISE and RBMPs; information provided by Spain (2014).

10.1 Quantitative status

The quantitative status of GWBs has been defined for all except 11 GWBs in Spain, and "unknown" status has only been assigned to GWBs in ES063, ES064, ES123 and ES150. In particular in ES063 and ES064 (57 and 25% unknown respectively), the current assessment is incomplete, and hampers the further planning process. This is particularly worrisome bearing in mind the high intensity of water use in both RBDs.

The majority of GWBs are reported to be in good status in 2009 (533 GWBs, corresponding to 71%) (Tables 6.6 and 6.11). Several RBDs in Northern Spain have reported all GWBs to be in good quantitative status. In terms of absolute numbers, ES060, ES080 and ES110 have reported the largest numbers of GWBs in poor status; and additionally ES040, ES120, ES124 and ES160 show high percentages (>50%).

10.2 Chemical status

Almost all GWB have been classified and only 8 GWBs remain "unknown" chemical status. Only two RBDs have all their GWB in good chemical status (ES014, ES018), but overall poor status is present in a large number of GWBs, with some RBDs showing significant percentages of water bodies in poor chemical status (>50%). The RBDs with the largest number (> 20) of GWB in poor status are ES060, ES070, ES080, ES091, ES100, and ES110, thus covering the whole Mediterranean area.

10.3 Protected Areas

Regarding the status of Protected Areas (PAs), information has mainly been provided for Drinking Water Protected Areas (DWPAs). The status of the vast majority of these PAs is unknown, with no classification provided for any PA in most of the RBMPs, including some of the RBDs where DWPAs are particularly relevant in number. Only a few RBDs provide a more detailed analysis including data on DWPAs in good status or failing to achieve good status.

There are striking differences in total number of DWPAs across the different RBDs.

RBD	Good	Failing to achieve good	Unknown
ES010	0	0	531
ES014	0	0	1954
ES017	12	0	14
ES018	20	0	0
ES020	2508	794	0
ES030	0	0	141
ES040	99	27	268
ES050	0	0	809
ES060	0	0	714

RBD	Good	Failing to achieve good	Unknown
ES063	0	0	78
ES064	0	0	28
ES070	91	12	0
ES080	1961	0	0
ES091	0	0	99
ES100	0	0	1108
ES110	26	54	0
ES120	0	0	0
ES122	0	0	0
ES123	0	0	0
ES124			
ES125	0	0	0
ES126	0	0	5
ES127	0	3	0
ES150	0	0	0
ES160	0	0	20
Total	**4717**	**890**	**5769**

Table 10.3.1: Status of groundwater Drinking Water Protected Areas
Source: information provided by Spain (2014). No data available for ES124.

Beyond drinking water aspects, Protected Areas have only been listed for the RBDs and represented with a map in the RBMP. It is unclear if Protected Areas have been considered further in the rest of the planning steps of the RBMP.

11 OBJECTIVES AND EXEMPTIONS

11.1 Introduction

Spain has set an objective to achieve good or better status by 2015 in 3159 surface water bodies (61%), with a 18% increase compared with the 2009 figures (Table 6.7).

Relatively more ambitious RBDs are ES017 and ES060 that plan to increase the number of SWBs in good status in 2015 by more than 25%. The high increase figures for ES091 (+39%) and ES100 (+34%) are most likely influenced by the high number of water bodies in unknown status in 2009.

According to the reported data, the least ambitious RBD in terms of the number of SWBs in good or better status in 2015 are ES040 (28%), and in relative terms (comparing the increase) ES040 (with 0 % increase for 2015 and 2021) and ES110, followed closely by ES060, ES063, ES064 and ES080. This relatively small improvement is a matter of concern, in particular bearing in mind the significant financial resources planned to be invested during the first planning cycle; reflecting apparently a low cost-effectiveness.

As regards natural SWBs (Table 6.2 and 6.8), good or better ecological status will achieved in 2015 in 2733 water bodies. There is a statistically forecasted 21% increase, influenced by the high number of water bodies which status category was “unknown” in 2009. Particular concern can be raised in ES040, where the number of SWBs in good or better ecological status decreases between 2009 and 2015 by 2 water bodies, and large improvements are forecasted for 2027 only (increase from 67 to 243 SWBs). There is no clear justification for this sharp increase expected in the last WFD planning cycle.

As regards natural SWBs (Tables 6.3 and 6.9), good or better chemical status is expected to be achieved in 2015 in 3830 water bodies. Largely due to high percentages of SWB in unknown chemical status in 2009, an increase of +34% of SWB in good chemical status is reported for 2015. If the effect of “unknowns” is discounted, the real improvement expected is of around 3-4%.

Regarding HMWB and AWB, the number of water bodies in good ecological potential (Table 6.12) is expected to increase from 2009 by 15% to 47% (459 water bodies). Some RBDs are foreseeing significant improvements (ES010, ES014, ES017, and ES050). In contrast, the objectives established by ES091 do not seem to address adequately the WFD requirements, as only achieving GEP in 1.7% of its 116 HMWB/AWB by 2027. This probably reflects the lack of assessment of potential for most of HMWB/AWB in the first RBMP. Other RBDs with low proportion GEP values (<50%) by 2015 are ES040, ES080, ES100 and ES110). It should also be noticed that in some RBDs (ES040 and ES080) only marginal improvements are forecasted for the 2021 deadline, and the significant improvements are only expected within the 2027 deadline, which may prove difficult to achieve.

Regarding GWB, good quantitative status (Tables 6.6 and 6.11) is expected to increase by 8% to reach 80% by 2015 (595 GWBs). Most RBDs do not increase the number of GWBs in good quantitative status at all between 2009 and 2015, including those RBDs with a large proportion in poor status (ES040, ES070, and ES080). It should also be noticed that in these RBDs with overexploited GWBs only marginal improvements are forecasted for the 2021 deadline, and the significant improvements are only expected within the 2027 deadline, which again may prove very difficult to achieve.

Regarding GWBs, chemical status (Tables 6.5 and 6.10) is expected to increase by 4% to reach 70% by 2015 (525 GWBs). The data varies across the RBDs: some do not increase the number of GWBs in good chemical status at all between 2009 and 2015 (e.g. ES040, ES080 and ES091) and others include significant changes (e.g. +20% in ES060). Particular concern has to be expressed on the deterioration forecasted in 2 GWBs each in ES020 and ES070. In ES040, ES060, ES063, ES070, ES080, ES091 and ES100 relevant improvements will only take place in the 3rd planning cycle by 2027, and no previous milestones for improvements are reflected in the RBMPs.

Although the recovery of GWBs may be slow, the reflection of improvements only in the third RBMP cycle does not appear to be based on a sound assessment.

A particular RBMP (ES091) does not establish environmental objectives for any transitional or coastal water body, nor for any of the HMWBs or AWBs. As informed additionally by Spain (2014), the problem stems from inconclusive work on characterisation, and definition of water bodies and their types. For this reason, it was not possible to determine the status or calculate the objectives. However, there is a high number of new infrastructures foreseen, in particular dams, and there seems to be no assessment of the impact of those dams in the water bodies. Furthermore, in many cases the status of the affected water bodies is unknown. For example, in ES091, a massive development of irrigation is planned, while there are high percentages of water bodies in unknown status. Until there is a complete picture of pressures, impacts and status, further development of water uses may put at risk the environmental objectives of the WFD to an extent which is unknown. The current setting of ecological flows (see further in chapter 12.3 in the 1st RBMPs) does not guarantee the achievement of the WFD objectives, as no clear links have been established to the objective of good ecological status.

In general, the Strategic Environmental Assessments (SEA) carried out for the RBMPs analyse the effects of 3 alternatives on the achievement of the established environmental objectives for each water body, using modelling exercises in the RBDs. Nonetheless, it seems that "non-deterioration" (WFD Article 4.1.a.i) of SWBs has not been analysed (e.g. ES020, ES030, ES080, ES091), despite the large number of new water infrastructure included in the RBMPs and their possibly associated increased pressures. According to the RBMPs, the only indicators for the environmental monitoring and follow-up related to new dam infrastructure (e.g. ES020, ES030, ES080 and ES091) is the "surface area occupied/flooded by new dams", without referring to more relevant indicators as included within the WFD's quality elements, such as fish or hydromorphology.

11.2 Protected Areas

In general, the RBMPs replicate the information contained in the specific legislation on PAs regarding Drinking Water Protected Areas and other PAs. Some RBMPs quote the specific physico-chemical values of the PAs. No information has been provided on how these specific objectives relate to other water body-specific objectives within the RBMPs.

No mention has been found in the RBMPs regarding specific objectives for Protected Areas included in the Habitats Directive, except ES080 that states that no specific objectives have been set. In many RBMPs it is established that during drought events when water allocation will be reduced for water users, the proportional reduction of eflows in PAs shall be less than for non-protected areas.

Protected Areas often lack specific water-management objectives. It is expected that the RBMPs compile the existing information and identify gaps.It should be noted that in 2009 a study on the ecological requirements of habitats under the Habitats Directive was published by the Ministry for the Environment[25], and no reference to it has been found in any of the RBMPs.

More work is needed to ensure the protection of emblematic protected habitats dependent on water. The water quantity and quality requirements of protected areas need to be assessed and included as additional objectives in the RBMPs. Measures should then be taken to ensure that the water dependent habitats and species can achieve favourable conservation status.

As regards the additional objectives for areas for shellfish production, the faecal coliform parameter, which was required in the Shellfish Directive[26], has not been kept in the Spanish legislation. Microbiological standards should be included in the RBMPs to effectively ensure the same level of protection for shellfish protected areas, now that the Shellfish Directive has been repealed.

11.3 Articles 4(4) and 4(5)

Exemptions for extending deadlines according to Article 4(4) are foreseen for 1749 water bodies, mostly RWB followed by GWB. The largest number applies to ES020, ES040 and ES080. LWB exemptions are mainly applied in ES040, ES050 and ES100, and TWB and CWB in ES100. In terms of percentage (Table 6.7), most exemptions under Article 4(4) are applied in ES040 (72% of its SWB).

Several RBMPs postpone the achievement of the environmental objectives to 2021 and 2027 for significant number of water bodies. For these, none of the RBMPs reports on expected achievements or milestones in the intermediate periods (cf. Article 4(4)d). Some RBMPs (e.g. ES091) refer all temporary exemptions to 2027, without providing any indication of the expected progress by 2021.

Less stringent environmental objectives (LSO) according to Article 4(5) are being applied to a total of 195 water bodies, most of them RWB followed by GWB. The largest numbers in RWB and GWB are applied in ES020. The methodology for applying LSO is described in the IPH and is in general replicated by the RBMPs, and complemented with fiches for each of the corresponding water bodies.

The justification of exemptions is insufficient. In most cases the exemptions are justified with some generic statements, not based on an assessment of the measures needed to achieve good status. Therefore, the RBMPs are not able to justify whether the measures are disproportionately costly or technically unfeasible.

The methodology as presented in the RBMPs seems inappropriate. Indeed, instead of focusing on identifying in the first place the measures needed to achieve the objectives, the assessment starts by identifying as candidate for exemptions all water bodies that are in less

[25] Ministry for the Environment (2009): Bases ecológicas preliminares para la conservación de los tipos de hábitat de interés comunitario en España. http://www.magrama.gob.es/es/biodiversidad/temas/espacios-protegidos/red-natura-2000/rn_tip_hab_esp_bases_eco_acceso_fichas.aspx

[26] Directive 79/923/EEC (codified 2006/113/EC), repealed in 2013 by the WFD.

than good status considering the measures in place and some considered "viable" ex-ante[27]. This process is not transparent and does not provide a sound basis for justifying the exemptions according to the WFD requirements.

RBD	Article 4(4)					Article 4(5)				
	R	L	T	C	GW	R	L	T	C	GW
ES010	42	1	0	0	1	2	1	0	0	0
ES014	44	0	4	10	0	6	0	0	1	0
ES017	40	0	2	0	1	0	0	0	0	0
ES018	35	2	3	0	0	0	0	0	0	0
ES020	334	0	0	0	3	83	0	0	0	14
ES030	62	6	0	0	6	17	1	0	0	0
ES040	180	44	0	0	15	0	0	0	0	0
ES050	109	16	10	0	25	9	0	0	0	0
ES060	30	1	0	0	21	7	0	0	0	5
ES063	32	0	7	0	5	1	0	0	0	2
ES064	18	0	8	2	2	0	0	0	0	0
ES070	48	4	0	4	36	0	0	0	0	10
ES080	171	12	4	10	37	0	0	0	0	3
ES091	74	0	0	0	21	12	0	0	0	2
ES100	104	17	16	14	21	0	0	0	0	0
ES110	0	0	0	0	23	0	0	0	0	3
ES120	0	0	0	0	2	0	0	0	0	8
ES122	0	0	0	0	0	0	0	0	0	4
ES123	0	0	0	0	0	0	0	0	0	0
ES124	0	0	0	0	0	0	0	0	0	4
ES125	0	0	0	0	1	0	0	0	0	0
ES126	0	0	0	0	0	0	0	0	0	0
ES127	0	0	0	0	3	0	0	0	0	0
ES150	0	0	0	1	1	0	0	0	0	0
ES160	1	0	0	0	3	0	0	0	0	0
Total	**1324**	**103**	**54**	**41**	**227**	**137**	**2**	**0**	**1**	**55**

Table 11.1.1: Exemptions for Article 4(4) and 4(5). R: rivers; L: lakes; T: transitional waters; C: coastal waters; GW: groundwater.
Source: WISE and RBMPs; information provided by Spain (2014).

[27] See for example the way the methodology is explained in RBMP ES030 Tajo, chapter 8 Environmental Objectives, page 80 and Annex VIII section 3.2.2 Objectives, extensions and less stringent objectives, page 10; and RBMP ES091 Ebro, Annex VIII Environmental objectives and exemptions, chapter 3 Methodology, page 23.

RBD	Global[28]					
	Technical feasibility		Disproportionate costs		Natural conditions	
	Article 4(4)	Article 4(5)	Article 4(4)	Article 4(5)	Article 4(4)	Article 4(5)
ES010	38	2	0	1	13	0
ES014	74	7	0	0	0	0
ES017	56	0	0	0	1	0
ES018	43	0	0	0	0	0
ES020	40	98	337	66	2	0
ES030	6	18	68	0	0	0
ES040	169	0	79	0	0	0
ES050	28	10	136	0	0	0
ES060	74	7	0	11	0	0
ES063	1	2	28	1	48	0
ES064	0	0	6	0	77	0
ES070	0	0	125	10	0	0
ES080	24	3	256	0	0	0
ES091	32	4	52	10	25	0
ES100	128	0	166	0	28	0
ES110	0	0	1	0	2	0
ES120						
ES122						
ES123						
ES124						
ES125						
ES126						
ES127						
ES150	4	0	0	0	0	0
ES160	5	0	2	0	0	0
Total	**722**	**151**	**1256**	**99**	**196**	**0**

Table 11.1.2: Numbers of Article 4(4) and 4(5) exemptions
Source: WISE and RBMPs; information provided by Spain. No data available for ES12X.

Disproportionate cost (1256) is the major reason for applying Article 4(4) exemptions, followed by technical feasibility (722). The picture is varied across the Spanish RBDs, with some applying both (e.g. ES100), some only technical (ES014 and ES018), economical (ES070) or mainly natural (ES064) reasons. It appears that the criteria for applying the different justifications differ considerably among RBDs. However, for applying disproportionate costs, the RBMPs generally lack a proper economic analysis that justifies each exemption.

[28] Exemptions are combined for ecological and chemical status

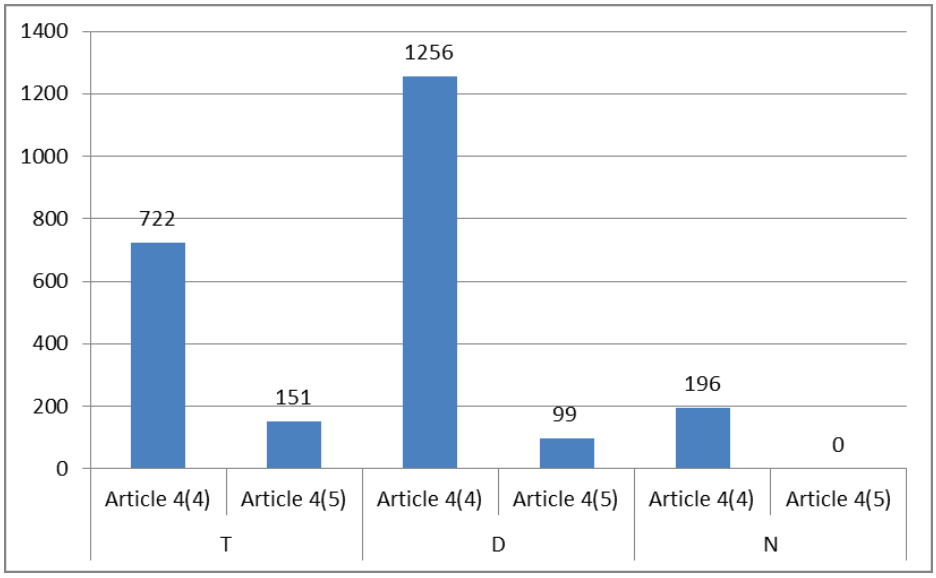

Figure 11.2.1: Numbers of Article 4(4) and 4(5) exemptions
T = Technical feasibility
D = Disproportionate costs
N = Natural conditions
Source: WISE. No data available for ES12X, ES150 and ES160.

11.4 Article 4(6)

In general, criteria for triggering exemptions under Article 4(6) have been included in all RBMPs. No Article 4(6) exemptions have been applied so far.

ES030 lists provisionally all areas identified under the Floods Directive as potentially under risk (of possible exemptions under Article 4(6)).

11.5 Article 4(7)

Most RBMPs state that there is the possibility of applying exemptions for new modifications, and provide examples of conditions and examples of those modifications. However, none of these RBMPs or PoM include any case for which this exemption will be applied to any water body. According to additional information from Spain, this applies to 3 water bodies in ES018: Estuario de Avilés, Bahía de Santander-Puerto (TW HMWBs) and Cuenca Carbonífera Asturiana (GWB).

Some other RBMPs (e.g. ES020, ES060, ES064, and ES091) already provide a list of those (infrastructure work) modifications that are forecasted to be considered under Article 4(7) though no further information or justification is given. ES020 argues that the Feasibility reports under Article 46.5 of the Spanish Water Law should be sufficient to justify Article 4(7) exemptions, though these reports do not cover all the requirements of the WFD and are not included in the RBMPs.

It is especially worrying the high number of planned infrastructure projects, in particular dams, for which Article 4(7) has not been applied. According to the WFD, the infrastructure that has not yet been constructed and is liable to cause deterioration of the status of water bodies or prevent the achievement of the environmental objectives can only be executed if the conditions of Article 4(7) are fulfilled.

The normative part of the RBMPs includes an article on the conditions for new modifications that circumvent the application of article 4(7) to all measures included in the programme of measures. This is clearly not in line with WFD, considering moreover that many of the measures included in the Spanish programmes of measures are not linked to the achievement of environmental objectives, but constitute new infrastructures for exploitation of water resources. Therefore exempting e.g. the dams included in the programme of measures from justification under article 4(7) because they are included in the plan is clearly in contradiction to WFD obligations.

11.6 Exemptions under the Groundwater Directive

No information is included in the RBMPs on exemptions under Article 6 of the Groundwater Directive.

12 PROGRAMME OF MEASURES

12.1 Programme of Measures - General

Usually, the PoM constitutes an Annex of the Spanish RBMPs with vast information, and often several Appendices. In general, there is no evidence in the RBMPs of transboundary co-ordination of the PoMs or individual measures (e.g. ES018, ES030, ES091), though co-operation meetings were held in some of the basins in the frame of the international agreements and/or at technical level.

The PoMs classify measures regarding topics/problems (usually “achievement of environmental objectives”, “satisfaction of water demand”, “risk management – floods and droughts” and “knowledge and governance”, though this grouping is slightly different between the individual plans). It is complex or impossible to understand how the PoMs are linked and respond to the identified pressures and to the status assessment, and how the measures ensure the achievement of objectives. The measures to satisfy water demand – which use on average nearly half of the PoMs budgets - are not targeted to the WFD objectives, and might even hamper their achievement (see section 11.5). According to aggregated information provided by Spain, measures addressing the WFD environmental objectives make up 46% of the PoMs budgets, measures for water supply 42%, floods and droughts a 9% and 3% is targeting knowledge and governance.

Among the measures considered by the RBMPs as contributing to the environmental objectives, there are many for which their contribution to achieve good status is unclear. In particular the modernisation of irrigation takes a significant percentage of the budget of the measures to achieve environmental objectives, but its contribution is generally not assessed and not quantified. There are general statements that such measures contribute to the WFD objectives, but these are not justified (see below section 12.2 Measures related to agriculture).

The RBMPs are based on estimates and standard data on water uses ('*dotaciones*') and not on real data on consumption because the use of metering is not generalised, in particular in agriculture. Despite the requirement in the water law to install and maintain meters, this is not enforced and implemented, and hence there is a lack of real data on consumption and a lack of adequate control on water use.

Often, measures are not related to specific water bodies. Modelling has been used to explore the impact of different scenarios of measures, and the specific methodology and decision-support-tools are often included in the Annexes of the RBMPs. Nonetheless, usually the modelling results (for the different options) have not been published, resulting in a non-transparent exercise. Measures to achieve environmental objectives and measures to satisfy demands are assessed together, again not contributing to present a transparent picture of what is needed to achieve good status.

In general, uncertainty is not considered regarding the results of the measures (e.g. ES070, ES080, ES091), except regarding climate change (e.g. ES017, ES110), though only in an ambiguous sense.

The budgets of the PoMs vary between 150 and 7000 MEUR for the first cycle; and between 1000 and 18000 MEUR for the overall period from 2009-2027. It should be noted that these figures include "non-WFD-targeted" water supply infrastructure works, which are considered in the Spanish legislation as part of the RBMPs, and as stated above, in some RBDs cover a significant proportion of the overall budget (e.g. ES091 these measures are expected to increase water availability by estimated 2000 hm^3/year – a 20 % increase compared to current abstractions).

At the same time budget constraints are referred to as being responsible for the reduction in the ambition of the PoMs and the achievement of WFD environmental objectives.

RBD	Budget first planning cycle MEUR	Public funding (%)	Private funding (%)	EU funds considered (%, Y/?/N)	Budget all planning cycles MEUR
ES010	929*	66,5	1	32,5	988
ES014	330 (1272*)				1358 (1392*)
ES017	1168	71	1.7	Y	2790 (2610*)
ES018	1461	90	10	?	2353
ES020	1497			?	4200
ES030	4354	100	0	Y	8246
ES040	798				4040
ES050	1747				4099*
ES060	2818				5100
ES063	338*	98	2		1417
ES064	372*	98	2		1376
ES070	1950	?	?	Y	4818
ES080	2020	100	0	?	5459
ES091	3915	81	19		18112*
ES100	6269*				6269*
ES110	145			?	2722
ES120	128*				128*
ES122					
ES123	40*				
ES124					
ES125					
ES126					

RBD	Budget first planning cycle MEUR	Public funding (%)	Private funding (%)	EU funds considered (%, Y/?/N)	Budget all planning cycles MEUR
ES127					
ES150					
ES160					
Total	*31543**				*74209**

Table 12.1.1: Budget and sources of funding
Source: RBMPs and information provided by Spain in 2014 (*)

RBD	Environmental objectives	%	Water supply	%	Floods & Droughts	%	Knowledge and governance	%	Total
ES010	670	68	258	26	36	4	23	2	987
ES014	1180	85	146	11	24	2	40	3	1390
ES017	1383	53	651	25	521	20	54	2	2609
ES018	1630	69	468	20	124	5	129	5	2351
ES020	1991	47	2064	49	10	0	133	3	4198
ES030	4390	53	3633	44	0	0	222	3	8245
ES040	1968	49	1651	41	380	9	41	1	4040
ES050	1643	40	2026	49	348	8	81	2	4098
ES060	1377	27	2797	55	712	14	213	4	5099
ES063	298	21	625	44	461	33	32	2	1416
ES064	249	18	748	54	347	25	31	2	1375
ES070	1994	41	1997	41	528	11	298	6	4817
ES080	1396	26	2756	50	1098	20	209	4	5459
ES091	8958	49	7502	41	1400	8	251	1	18111
ES100	2817	45	3113	50	339	5	0	0	6269
ES110	1287	47	540	20	512	19	382	14	2721
ES120									
ES122									
ES123									
ES124									
ES125									
ES126									
ES127									
ES150	182	72	55	22	15	6	1	0	253
ES160	466	76	83	14	64	10	1	0	614
Total	33879	46	31113	42	6919	9	2141	3	74052

Table 12.1.2: Budget distribution across major action lines (in MEUR)
Source: Information provided by Spain (2014).

The timeline for the PoMs varies significantly, and in general the plans include measures for 2006-2010 (ES100), 2009-2015 or 2010-2015 (though the plans have been approved later than 2009), and usually also for a latter period (after 2015, after 2016, 2015-2021 and 2022-

2027, or 2016-2021). A more detailed timeline is usually not included in the PoMs. Note that some PoMs (e.g. ES017, ES091 and ES100) do not refer to the 2016-2027 or 2022-2027 periods, but additional information has been provided by Spain (2014) as included in table 12.1.1. Almost all plans argue that due to the economic situation, significant changes in the implementation of measures might be possible. Some plans (e.g. ES070, ES080) include a brief analysis of the budgetary capacity of the involved authorities.

Considering the expected (limited) improvements and the costs, the cost-effectiveness ratio of the 2009-2015 RBMPs appears quite low. The RBMPs might have to explore other less expensive and more effective measures to achieve their objectives, in particular those RBMPs that expect the most relevant achievements of WFD objectives only in the third planning cycle.

The main sources for funding are public authorities, namely the national authorities, followed by regional and local authorities. In some plans no specific division (overview) has been provided. Some plans (e.g. ES017, ES080) include for a minor proportion of the budgets a still unknown ownership by assigning budgets to "public authorities to be determined". Private contributions are only marginal, except in ES091, where it makes up 19 % for 2010-2015. Some RBMPs mention the sources from EU co-funding namely ERDF, EARDF, and LIFE (Table 12.1.1).

Some plans (e.g. ES017, ES030) mainly define infrastructure investments, and do not budget in the RBMP other measures (e.g. governance or training activities), as they might not have been precisely defined, no direct effect on the status of water bodies is foreseen or they belong to "general administrative actions". According to additional information by Spain (2014), PoM in ES017 includes 54 MEUR and in ES030 422 MEUR to measures related to governance and knowledge.

The information available in the PoMs regarding the details of the measures (e.g. geographical area - RBD, regional, sub-basin or water body levels -, funding and/or implementing authority, costs and timing) is quite extensive for some RBDs (e.g. ES040, ES091) but scarce for others (e.g. ES017, ES018, ES070). Usually measures are not linked to water bodies (exception e.g. ES091), and are unclear regarding the pressures or economic sectors (exception e.g. ES080) they address. In some cases, the PoM provides separate data on basic, other basic, supplementary and additional measure groups (e.g. ES018). In others this information is provided individually but not as an overview (e.g. ES080).

Effectiveness of measures is assessed using modelling tools such as AQUATOOL, AquaToolDMA, GESCAL and PATRICAL. Some RBMPs include the results of the assessment for the combination of measures considered in different scenarios (e.g. ES070) and only a few include measure-specific analysis (e.g. ES050). A number of RBMPs make only general methodological statements (e.g. ES017, ES030, ES080, ES091, ES110) without referring to the evaluated alternatives and/or results of these simulations. In many RBMPs it is neither clear how measures relate to water bodies nor how much of the gap to achieve good status is being bridged by the different measures. Therefore the analysis lacks transparency. Moreover, it is not clear how the selection of measures to be considered has been done, or why some measures have not been considered at all.

A quite common feature in the RBMPs is the interdependency between RBDs (ES017, ES018, ES040, ES070, ES060, ES080, ES091 and ES100) on transferred water from other basins (ES030, ES091). ES070 states clearly that the environmental objectives will only be (technically, economically) achieved if an additional water transfer of minimum 400 hm^3/year from ES030 or other basins is ensured.

Important gaps have been identified in the application of basic measures related to urban waste water treatment, in particular concerning the compliance with Urban Waste Water Treatment Directive[29].

12.2 Measures related to agriculture

The following table includes an overview of which measures are considered in the RBMPs regarding agriculture. In general, the variety of measures included is rather poor and focused on abstraction controls, irrigation efficiency and re-use, and sometimes unclear measures (e.g. ES018) on pollution reduction. Though there is detailed information on the expected gross water savings by measures of irrigation efficiency, the contribution of each measure to achieving the objectives is generally not specified.

[29] See latest Commission implementation report: Seventh Report on the Implementation of the Urban Waste Water Treatment Directive (91/271/EEC), COM(2013)574 available at http://ec.europa.eu/environment/water/water-urbanwaste/implementation/implementationreports_en.htm

Measures	ES010	ES014	ES017	ES018	ES020	ES030	ES040	ES050	ES060	ES063	ES064	ES070	ES080	ES091	ES100	ES110	ES120	ES122	ES123	ES124	ES125	ES126	ES127	ES150	ES160
Technical measures																									
Reduction/modification of fertiliser application				?	Y		Y	Y	Y	Y					Y										
Reduction/modification of pesticide application							Y			Y	Y				Y										
Change to low-input farming (e.g. organic farming practices)								Y			Y														
Hydromorphological measures leading to changes in farming practices							Y								Y										
Measures against soil erosion																									
Multi-objective measures (e.g. crop rotation, creation of enhanced buffer zones/wetlands or floodplain management)	Y																								
Technical measures for water saving	Y			Y	Y		Y	Y	Y	Y	Y				Y										
Economic instruments																									
Compensation for land cover															Y										
Co-operative agreements																									
Water pricing specifications for irrigators				Y						Y	Y														
Nutrient trading																									
Fertiliser taxation															Y										
Non-technical measures																									
Additions regarding the implementation and enforcement of existing EU legislation				Y											Y										
Controls							Y								Y										
Institutional changes					Y										Y										
Codes of agricultural practice				Y	Y			Y	?						Y										
Farm advice and training				Y	?			Y		Y	Y				Y										

Measures	ES010	ES014	ES017	ES018	ES020	ES030	ES040	ES050	ES060	ES063	ES064	ES070	ES080	ES091	ES100	ES110	ES120	ES122	ES123	ES124	ES125	ES126	ES127	ES150	ES160
Raising awareness of farmers		**Y**					**Y**	**Y**	**Y**						**Y**										
Measures to increase knowledge for improved decision-making															**Y**										
Certification schemes																									
Zoning (e.g. designating land use based on GIS maps)							**Y**								**Y**										
Specific action plans/programmes															**Y**										
Land use planning							**Y**	**Y**																	
Technical standards																									
Specific projects related to agriculture			**?**																						
Environmental permitting and licensing							**Y**								**Y**										
Others (e.g. new water supply infrastructure)					**Y**				**Y**																

Table 12.2.1: Types of WFD measures addressing agricultural pressures, as described in the PoMs
Source: RBMPs

In general, no specific scope is given for the measures. The timing for the implementation is often missing or refers generically to first cycle versus other planning cycles, based on the information in the PoMs budgets, and bearing in mind that for many measures specific budget allocations are missing. Specific information on the control of the implementation of agricultural measures is generally not provided.

A key measure in many RBMPs is increased efficiency of water usage in agriculture, by improving/changing supply infrastructure (e.g. ES070, ES080, ES110), and the plans usually refer to gross water savings that are transferred to the water balances. In some cases (e.g. ES080) a gap between gross and net savings is recognised, but not quantified. In consequence, the RBMPs are lacking a detailed justification on how these measures contribute to the achievement of the WFD objectives. Given the increases in efficiency, the consumption of water after modernisation can increase, even if abstraction decreases. In these cases the overall pressure on water resources would actually increase after modernisation. Effective reduction of water consumption pressures from agriculture is largely not demonstrated in the RBMPs; and a systematic review of water rights adapted to WFD objectives appears to lack in all RBMPs. In the public consultation process, many stakeholders have expressed their concerns regarding the effectiveness of these measures, and the lack of clarity regarding net water savings and the lack of clarity on the possible review of related water rights to ensure that efficiency measures contribute to environmental objectives.

Water re-use in agriculture is also a measure included in a large number of RBMPs aimed at ensuring a quantitative water balance. Regarding some specific measures, ES110 establishes water re-use and savings in the PoM though data contradictions and inconsistencies have been identified.

Measures against erosion are largely lacking in the RBMPs, and it is furthermore unclear how effectively the PoMs will contribute to reduce diffuse pollution pressures. Basic measures to address diffuse pollution should go beyond the Nitrates Directive codes of practice, which are voluntary instruments limited to nitrates, but not addressing other diffuse agricultural pressures.

12.3 Measures related to hydromorphology

The following table includes an overview which measures are considered in the RBMPs regarding hydromorphology.

Measures	ES010	ES014	ES017	ES018	ES020	ES030	ES040	ES050	ES060	ES063	ES064	ES070	ES080	ES091	ES100	ES110	ES120	ES122	ES123	ES124	ES125	ES126	ES127	ES150	ES160
Fish ladders		√	?					√	?						√										
Bypass channels															√										
Habitat restoration, building spawning and breeding areas		√	√				√	√	√	√	√														
Sediment/debris management							√								√										
Removal of structures: weirs, barriers, bank reinforcement	√	√					√		√	√	√				√										
Reconnection of meander bends or side arms							√																		
Lowering of river banks	√	√								√	√				√										
Restoration of bank structure		√					√	√	?						√										
Setting minimum ecological flow requirements	√	√	√	√	√		√	√	√	√	√				√										
Operational modifications for hydropeaking	√		√	√																					
Inundation of flood plains	√	√					√			√	√														
Construction of retention basins																									
Reduction or modification of dredging								√							√										
Restoration of degraded bed structure															√										
Remeandering of formerly straightened water courses			√																						
Other (restoration of transitional and/or coastal waters)		√	√					√							√										

Table 12.3.1: Types of WFD measures addressing hydromorphological pressures, as described in the PoMs
Source: RBMPs

The main measure groups foreseen in the RBMP are river restoration actions (such as e.g. under the Spanish Strategy for River Restoration, including habitat restoration, the removal of un-used infrastructure or the construction of fish ladders), as well as the establishment of ecological flows (eflows), and some habitat restoration in coastal and transitional waters.

Environmental water allocation is a mandatory component of Spanish RBMPs, though non-accomplishment of currently established regimes is also explicitly recognised in some RBMPs (e.g. ES050, ES091). Eflows have been established according to the Spanish legislation (Water Law, RPH and IPH) in all RBMPs for some river stretches, and are currently in different stages of their process of implementation.

Though most Spanish RBDs have assessed eflows, the level of ambition is uneven. According to the Spanish legislation (IPH), eflows regimes should consist not only in a fixed minimum flow throughout the year, but also include prescriptions for its seasonal distribution. Downstream water infrastructures, other eflows components such as a maximum flow, a flooding regime and a rate of change shall be assessed and fixed if appropriate.

Minimum flows have been established by direct hydraulic and habitat modelling studies or extrapolation for approximately 2200 strategic SWBs, so that they effectively condition water allocation in the basin (sometimes also including some wetlands e.g. ES040, ES060, ES070 or ES080). The regulatory weight of the rest of the eflows components varies substantially from full adoption in ES040 to a purely indicative role in ES080, while most RBMPs have not finished the assessments or are still pending agreement with stakeholders.

Some plans from Northern Spain (ES010, ES017 and ES018) include an explicit ban on exploitation patterns of hydropower facilities causing sharp hydropeaking.

There is also a great variety of formulas to regulate how eflows regimes will affect existing water rights. In any case, and in accordance with the Spanish Water Law, the priority of drinking water supply is reinforced by the RBMPs.

The regulation of eflows in the Spanish legislation is one of the most comprehensive across the EU and, in the Spanish implementation context, it is considered an essential tool to link the quantitative water management with the WFD environmental objectives. However, the relationship between the eflows and the WFD objectives is unclear.

The definition in the Water Law[30] states that eflow is the "flow that maintains, as a minimum, fish life that would naturally live in the river, as well as the riparian vegetation". In the RPH the definition is expanded with a reference to "contribute to achieving good ecological status or potential in rivers or transitional waters"[31]. The IPH reproduces the same definition but further expands it in the main text[32] to include as an additional objective the protection of habitats and species protected under nature legislation. Furthermore, the IPH defines water bodies "with very altered hydrology" as those suffering from "severe hydrological alteration in the current situation, presenting conflicts between existing uses and the eflows regime". The criteria for setting eflows are less stringent in these water bodies. This appears to mix ecological criteria and socio-economic considerations in a not completely transparent way[33].

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[30] Article 42.1.c' of Consolidated Water Law approved by Legislative Royal Decree 1/2001.

[31] Article 3.j of Planning Regulation approved by Royal Decree 907/2007.

[32] IPH 1.2.15 and 3.4.1.1.

[33] This 'ex-ante' combination of ecological and socio-economic considerations seems difficult to reconcile with the WFD approach, that clearly separates in different steps the definition of the environmental objective of good status, which is only based on ecological criteria (WFD Article 4(1) and Annex V), and socio-economic

Moreover, there is no clear separation between the technical studies that would define the eflow compatible with achieving good ecological status and the consensus building process ("*concertación*") that underpins the final definition and implementation of the eflow. As a result, the process lacks transparency on the relationship between the final eflow and the achievement of WFD objectives and, in particular, there is no clear relationship between eflows and good ecological status.

Furthermore, protected areas, their habitats and species have only taken into account in a limited way. The derivation of eflows has considered only three fish species listed in the Birds and Habitats Directives (*Petromyzon marinus*, *Alosa* sp, *Chondostroma* sp.).

As mentioned previously, a large number of new dams and other "grey" water infrastructure (often with unclear descriptions in the PoMs) are foreseen to minimise the flood risks. It is unclear if alternative options like the restoration of floodplains, reduction of dredging and/or remeandering have been considered beyond the few currently existing initiatives (ES020: Órbigo; ES091: LIFE+ Mink Territory project), and if urban and land-use planning measures as promoted by the Floods Directive have been evaluated when setting up the PoM. It has also been noted that despite the large amount of existing water infrastructures, flooding events are common throughout Spain in the past years, even downstream of existing dams (e.g. ES050, ES063, ES091).

12.4 Measures related to groundwater

In general, the reported basic measures related to groundwater are those already established by the Spanish legislation before the WFD implementation process. They cover the authorisation procedure and control of abstractions, as well as of point-source discharges.

Nonetheless, the effective control of abstractions is still an issue to be resolved. Despite the Spanish Water Law is in place now for almost 30 years, there are still thousands of water rights not included in the electronic databases of the Water Register, which according to the information provided by Spain is only due to completion by 1 January 2020[34]. Furthermore, there is recurrent evidence of significant illegal water abstractions in water-scarce areas (e.g. ES050, ES040), and it is unclear if the measures of the RBMPs will effectively address this issue.

The Spanish law includes the mechanism of "declaration of overexploitation". This measure reinforces the administrative control of abstractions in areas where abstraction exceeds natural recharge and therefore there is a situation of poor quantitative status of aquifers. This declaration, however, is not compulsory but can be used at the discretion of the river basin authorities. In some basins this is being used significantly (e.g. ES040, ES070) but in others with severe problems of overexploitation is not (ES110, ES060, ES050). In ES110 the RBMP even allows granting new concessions for abstractions in groundwater bodies that are in poor quantitative status, which seems to go against any logic of protection of the resource included in the WFD.

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considerations, which play a role in applying the exemptions (WFD Articles 4(3) to 4(7)). It should therefore be clear how far the application of exemptions in particular water bodies makes the environmental objectives depart from the default objective of good status.

[34] Date included in the Royal Decree 670/2013.

Some RBMPs (e.g. ES040, ES080, and ES110) foresee the shift of GW abstractions from one GWB at risk to another one currently in good quantitative status. Some others foresee a shift from GWB abstraction to surface water supply (e.g. ES070, ES080).

In some RBMPs, supplementary measures have been defined like aquifer recharge (e.g. ES020, ES070, and ES080).

Usually, no RBD-specific measures have been identified to prevent inputs into groundwater of any hazardous substance (from diffuse or point sources; exception e.g. ES017), but the Spanish licensing system for control of effluents addresses this issue.

12.5 Measures related to chemical pollution

The existing regime of authorisation for control of point source discharges was in place before the adoption of the WFD.

The following measures have been identified in the RBMPs to deal with chemical pollution: subsidies to industry to improve wastewater treatment to more stringent levels than those imposed by the WFD (ES100); decontamination of a river polluted by priority substances due to industry (ES100); reduction of the pollution caused by salt mining in some river basins (ES100); measures to control pollution from petrol stations (e.g. ES030).

Measures to reduce/phase-out the emissions of specific pollutants have not been identified in the PoMs.

12.6 Measures related to Article 9

Water pricing measures in the RBMPs largely draw on the cost recovery instruments that were introduced by the Water Law in 1985, which have remained largely unchanged since then. These ensure a contribution from users to capital and operation costs of publicly built large infrastructure for the use of surface water such as dams and main distribution canals.

In addition, a number of regional authorities have introduced cost recovery instruments, mostly to recover costs for drinking water supply and wastewater treatment (e.g. Catalonia, Andalucia, Galicia, Basque Country, Asturias) but some also for other uses (e.g. Galicia for hydropower). The nature and composition of these instruments is very variable. The information in the RMBPs is generally scarce, mostly limited to listing the references to the regulations establishing the instruments without further analysis (see below).

In 2012 a national tax on hydropower was introduced for the protection of water resources, although paradoxically the revenue goes into the general budget with only 2% of the tax incomes are specifically earmarked for the River Basin Authorities. There is furthermore scarce information about existing (and planned) water pricing systems and tariffs, in particular regarding agriculture where a large variety of systems still co-exist (charging on the basis of surface, time or water consumption).

The Water Law Article 40.j and the IPH (Chapter 1.2.61) define water uses as different types of water consumption and uses that affect significantly the water status. Some RBMPs (e.g. ES040, ES063, ES064, and ES091) provide longer lists of uses, including e.g. fisheries, aquaculture, salt abstraction, navigation and recreational activities. It is often not specified in the RBMPs how the identification of uses is related to the analysis of pressures in the RBD.

The Water Law Article 40bis.i and the IPH 1.2.61 define water services as those activities that enable the use of water such as abstraction, storage, conduction, and treatment or the discharge; as well as the protection of humans and goods against floods. In the RBMPs, there is no homogeneous picture, and sometimes the services are more similar to the "uses" terms. In most of the RBDs, "environmental protection" (e.g. ES010, ES014, ES020, ES060, ES070, ES080, ES091, ES110), "flood protection" (e.g. ES080, ES091) and "water administration" (e.g. ES014, ES018, ES020, ES060, ES063, ES064, ES080, ES091) are also considered as services. Self-abstraction is a significant aspect in many RBDs, in particular for irrigation and industry, and only in some RBMPs (e.g. ES020; vs. ES080, ES110) considered as a service where costs could be recovered.

Cost recovery is considered in the Spanish legislation (Article 42.1 RPH, Regulation for Hydrological Planning, RD907/2007) as an element that "should be taken" into consideration; and specific regional legislation has been developed in Andalucía, Galicia, Catalonia and the Basque Country. Furthermore, documents compiling economic information have been developed and used as a basis for the RBMP development ("Precios y costes de los servicios de agua en España" (2007) and "Análisis de presupuestos y recuperación de costes por los servicios de agua en España" (2009)).

Regarding cost recovery, usually urban water supply, industrial uses and agriculture are considered in the RBMPs, with some differences due to basin-specific circumstances (e.g. ES014 not considering agriculture and adding "other uses", ES020 considering hydropower, ES040 not considering industry, and ES060 adding "golf"). Although explicitly included in the definition of water services in the Spanish legislation, costs for "flood protection" are not recovered as it is considered of general interest.

Frequently there are no adequate incentives for farmers to use water efficiently as the water consumption is, to a large extent, not measured and therefore water charges are not linked to real consumption. There are no charges for self-abstraction, except those incurred by the user related to pumping and distribution. Energy cost of abstraction does not seem to provide an adequate incentive as it has not been able to prevent the over-abstraction of numerous groundwater bodies (more than 200 GWB are in poor quantitative status, Table 6.6). The environmental and resource costs are high (large percentages of water bodies in less than good status) but they are not recovered either. Moreover illegal water abstraction is an important obstacle for efficient water policy.

A large number of discounts are being applied when calculating cost recovery. According to the Article 7.3 IPH, flood protection, and future water users (e.g. of dams) are not considered as recoverable costs, and different estimations are developed in the plans, though the information is not always easy to identify. The discounts for flood protection in dams are not justified and appear arbitrary. In some basins is always a fixed percentage (e.g. 50% in ES040), in others depend on the dam (e.g. ES050) and can even evolve within the life cycle of the project (e.g. ES091 for Biscarrués dam, which has changed from 35% in the EIA statement to 60% in the RBMP), in other basins is zero (ES020). A discount of ca. 80% appears to be applied in one specific case in ES080, including 50% discount due to "over sizing of the infrastructure"[35].

Another "discount" that is often applied to new dams is due to "maintenance of ecological flow" due to its "general character". This is often presented as a "benefit" of the dam. According to WFD, the establishment of eflow in a new dam should be a mitigation measure

[35] ES080 RBMP Annex 9 on cost recovery argues that only 50% of the Arenós dam is being used by the water users; nonetheless RBMP Annex 6 on water balances uses the full capacity of the dam

that should be taken according to article 4(7)a and would therefore form part of the objective of achieving GEP.

In general, and except in a few RBMPs (e.g. ES020 and ES070), no cost recovery has been estimated for hydropower and agricultural self-supplies.

Cost recovery has been calculated based on supporting documents, case studies (e.g. Besaya in ES018), estimates and voluntary surveys e.g. with irrigator communities, although often hindered by low return rates. Lack of (co-ordinated) data is a recognised problem (e.g. ES080, ES091) and in consequence only estimations have been realised when addressing local urban or agricultural services (e.g. ES091). In some plans (e.g. ES091) the cost recovery calculations cannot be easily related to the services (information is only provided for yes/no/partial) or users.

In many RBMPs (e.g. ES030, ES040) prices and revenues from the cost recovery instruments applied in urban water supply and sanitation cycle are estimated on the basis of the data from the Spanish Association of Water Supply and Sanitation[36] companies. It is not clear why real data is not provided by the regional and local authorities responsible for these instruments. The uncertainty of the source data (it is based on a voluntary survey) and the extrapolations made, together with the assumption that revenues match the real costs, raise questions about the reliability of the information and the cost recovery calculations. Moreover, the situations within the same RBD can be very different, because there is no basic national legislation that regulates the cost recovery in the urban cycle. Many regions have developed different cost recovery mechanisms that generally are listed in the RBMPs without further analysis of the level of cost recovery on the basis of real data. The way the analysis is presented in the RBMPs generally hides those potential differences.

In general, financial costs are considered and include capital costs for new investments, operating costs, maintenance costs, and administrative costs. Regarding the consideration of subsidies in the cost recovery calculations, there is often no explanation given; though e.g. ES020 includes an example of subsidies in the RBMP. In particular, possible cross-subsidising between sectors (e.g. in cases where urban water users pay higher costs for desalinised seawater, due to the reduced water availability in GWB and SWB over-exploited by agricultural consumption) is not reflected in the RBMPs.

According to the IPH 7.4, environmental costs are calculated on the basis of the cost of measures to achieve the environmental objectives. Most of the RBMPs simply replicate the legal text without further considerations (e.g. ES050, ES060, ES063, and ES064). Environmental costs have been calculated (partially) in ES010, ES020, ES070, ES091 and ES110; ES070 and ES091 present a raw figure (without references/sources) for estimating but without referring to the corresponding cost recovery; and in ES110 the costs refer explicitly to "the cost to comply with the current legislation (except WFD)" and were not calculated for agriculture. In general environmental costs are calculated for the wastewater treatment (i.e. urban cycle) but not for agriculture, despite significant pressures and impacts (abstraction, pollution) caused by this sector.

According to the Spanish legislation, resource costs shall be analysed by the market value of water, and only in some RBDs a quite academic analysis has been carried out (ES020, ES070 and ES080 which provide figures – 0.13 to 0.28 EUR/m^3) without applying the concept further or discuss any instrument that would recover such costs. Several RBMPs refer to the fact that no water trading has happened in previous periods.

[36] Asociación Española de Abastecimiento y Saneamiento (AEAS)

In general and apart from overall statements, no details are provided in the RBMPs on how water pricing fosters resource efficiency, nor on the application of the polluter-pays principle (except ES080 including a specific measure addressing coastal water pollution).

The values in table 12.6.1 have been provided by the Spanish authorities.

	Environmental costs considered	Resource costs considered	Overall % cost recovery	CR % urban water services	CR % agriculture	CR % industry	CR % others
ES010	Y	N	24.0–34.1	33.8	18.8	99.8	-
ES014	N	N	48.0	48.0	-	71	(71, domestic) (31, other uses)
ES017	N	N	42.0–52.0 (1)	39.0–49.0	39.0–48.0	93	-
ES018	N	N	45.0–56.0 (2)	40.0–50.0	43.0–53.0	81.2	82.5
ES020	Y	Y (zero cost)	45.8–61.8	46.3–67.3	39.7–46.6	64.8	64.3
ES030	Y	N	75.0–77.0	78.0	59.0	81	100
ES040	Y	Y	81.0–89.0	81.0	81.0	96	-
ES050	N	N	85.2	84.5	77.9	86.8	-
ES060	N	N	84.2	85.7	78.0	93.2	100
ES063	N	N	-	92.8	76.7	92.8	68.0
ES064	N	N	-	94.6	90.5	96.3	55.0
ES070	Y	N (3)	(4)	88.4	85.7	88.38% (& urban)	
ES080	Y	N	85.0	86.0	80.0		19-25 (5)
ES091		N	-	57.0	80.0		
ES100						-	-
ES110	N	N	-	86.5	-	-	-
ES120	N	N	77.0	78.0	75.0		
ES122							
ES123							
ES124							
ES125	N	N	15.0–21.0	55.0–76.0	73.0–119.0		
ES126	N	N	-	57.0	11.0		
ES127	N	N	-	-	-		
ES128							
ES150							
ES160							

Table 12.6.1. Cost recovery in the RBMPs.
Source: Information provided by Spain (2014). Notes on the table: The intervals correspond to different considerations regarding the services when calculating cost recovery and, in general, regarding inclusion or non-inclusion of the environmental costs. (1): The figures rise greatly, if the demand supplied is included. The total figure to 79.0–82.0. (2): The figures rise greatly, if the demand supplied is included. The total figure to 73.0–78.0. (3): The analysis does not take into account cost recovery. It is estimated that it could reach 0.20–0.28 €/m^3. (4): Value disaggregated by uses. (5): Raw water service.

13 CLIMATE CHANGE

13.1 Water scarcity and droughts

Water scarcity and droughts are both relevant topics for almost all Spanish RBDs.

Water scarcity is a key feature and significant water management issue of many RBMPs, with dedicated chapters in all plans. Long term data series of available resources and flows are usually available (1940-2006). Real consumption data is generally not available (e.g. the PoM includes measures to improve datasets, controls, modelling of GWB, etc.) though not recognised as a weakness or uncertainty of the water balances in the RBMPs.

Almost all plans include a strong measure package to improve/enlarge water supply to all water users, following the trend scenarios, and considering water transfers (e.g. ES040, ES060, ES070, to be detailed further in a National Hydrological Plan), dams (e.g. ES020, ES040, ES064, ES091), desalination plants (e.g. ES060) or groundwater abstractions (e.g. ES110). RBMPs also include demand-side measures (e.g. efficiency in irrigation, awareness-raising). Measures to limit/restrict consumption are generally not considered. It is not possible to assess the relevance of the share of the demand and supply-side measures. In any case, for all RBMPs (except ES070) the mid-term water supply and demand (including eflows estimations) data match.

In general, Drought Management Plans (DMP) are either already approved or foreseen in the RBMPs as sub-plans, and they are more or less detailed in the RBMPs. DMPs have been developed with statistical or water use relevant thresholds, but it is uncertain to what extent the thresholds are related to the WFD objectives. Drought indicators will be applied for requesting Article 4(6) exemptions, if necessary.

13.2 Flood risk management

In general, the RBMPs acknowledge the parallel development of the Flood Risk Management Plans. Most plans (see also chapter 12.3) include also measures targeted to protect against floods, though the type of measures (floodplain restoration, natural water retention measures, river channelling, dam infrastructure) cannot often be identified in the PoMs, as these refer to more abstract concepts like “Extreme Hydrological Situations”, “Flood Management” or “Measures to prevent and reduce flood impacts”.

13.3 Adaptation to climate change

In all inter-community RBMPs and several regional RBMPs (e.g. ES060, ES110), climate change has been taken into consideration according to the changes in water availability. The IPH establishes in Chapter 3.5.2 that water balances shall include two long-term-average timelines (1940-2005 and 1980-2005) and analyse their differences, in order to better understand evolution and increase the robustness of the datasets. Furthermore, in Chapter 2.4.6 preliminary expected reductions of water availability by 2027 are fixed between -2 and -11%, pending further detailed studies (note ES091 refers to another study). Furthermore, the Spanish National Climate Change Adaptation Plan and/or Regional plans have been listed as related plans or programmes though without further explaining the relation with the RBMPs.

The PoMs do not, in general, include specific adaptation measures, beyond the scope of DMPs or research and studies to be carried out, though some exceptions might be mentioned (e.g. ES017's project on impacts and adaptation; ES091 mentions that water consumption will increase due to irrigation of vineyards). No climate check has been carried out for the RBMPs beyond the analysis of water balances and their match with climate change predictions. Note that not all plans refer clearly to the outcomes of this analysis.

14 RECOMMENDATIONS

Spain should:

- Adopt as soon as possible the **outstanding RBMPs for Canary Islands**
- Ensure the **consultation and adoption of the 2nd RBMPs** according to the WFD timetable, avoiding delays.
- Fill as soon as possible the **gaps in transposition** in the intra-community RBDs
- **Improve reporting to WISE**, ensuring that the information uploaded is the same as reflected in the RBMPs. Report for the 2nd RBMPs to WISE the complete information as regards significant pressures, including the results of the quantitative analysis, translated into the simple qualitative report required in WISE.
- Consider the review of the legislation to incorporate explicitly the **identification of water bodies at risk** as a result of the pressure and impact analysis.
- Ensure the completion as soon as possible of the **framework for status assessment** considering the following:
    - Reference conditions and boundaries for quality elements have to be binding. Revise typology if needed to ensure that it is fit to serve as a basis for classification.
    - Translate the results of the intercalibration exercise to the assessment systems in a transparent way
    - The complete assessment framework, and in particular the intercalibration results of 2013 and the new standards introduced by Directive 2013/39/EU for existing priority substances, should be considered in the status assessments for the second RBMP.
    - Fill the gaps in assessment systems for biological quality and supporting elements, in particular for fish
    - Include the complete assessment systems for coastal and transitional waters.
    - Report transparently the confidence and limitations of the assessments as appropriate.
- Fill urgently the gaps in monitoring of surface waters and ensure consistent monitoring with appropriate coverage (and thereby classify the status of all water bodies). Ensure that **monitoring is adequately resourced and maintained** to inform adequately the RBMPs and the decisions on the PoMs.

- Extend **chemical monitoring** beyond water bodies affected by industrial discharges. Consider as well atmospheric deposition and urban waste water discharges as relevant sources of chemical pollution.
- In the context of **designation of HMWBs**, develop clear criteria/thresholds to define the significant adverse effect of the restoration measures on the water uses, and a proper (real) assessment of other alternatives that could be better environmental option.
- Ensure that **GEP is correctly defined for all HMWBs and AWBs** (in terms of biological condition and mitigation measures).
- Ensure that **environmental objectives are established for all water bodies** in the second cycle, including for HMWBs and AWBs. If no objectives are defined, appropriate measures cannot be established either.
- Ensure that the assessment of **groundwater quantitative status** considers all aspects of the definition, including local falls in the water table that may lead to a risk in water-dependent ecosystems, and including protected areas.
- Develop a plan to **extend and generalise the use of flow meters** for all water abstractions and uses, and to require users to report regularly to the river basin authorities the volumes actually abstracted. Use this information to improve quantitative management and planning.
- Ensure that:
    - all **abstractions are registered and permits adapted** to the available resources.
    - all **abstractions are metered** and subject to control of the river basin authorities
    - the necessary amendments to the legislation are enacted to require **all abstractions to be registered and regulated**, no matter under which regime they got their permit (pre- or post-1985 Law).
- Ensure that the **ecological flows** established **guarantee good ecological status**. If this is not the case, report transparently the deviations and the justifications on the basis of technical feasibility or disproportionate costs. In the relevant water bodies, consider the objectives of water-dependent protected habitats and species in setting eflows.
- Harmonise the consideration of **temporary streams** in the Mediterranean area on the basis of sound ecologically-based scientific criteria and methodologies. Ensure the distinction between situations of dry rivers due to natural causes (temporary streams) from human induced (due to over-abstraction).
- Provide better **justification of exemptions**. There is no analysis of the measures needed to achieve good status. Therefore, it is not possible to justify whether measures are disproportionately costly or technically unfeasible. Measures need to be taken as far as possible in water bodies where exemptions are applied, and report them in the RBMPs.
- Ensure in the 2nd RBMPs that the **status of all water bodies is assessed** in accordance with the WFD **before considering any further infrastructure** that would be liable to cause deterioration of the status of water bodies or prevent the achievement of good status. These **infrastructures can only be authorised if the conditions of article**

4(7) are fulfilled. The justification needs to be included in the RBMP. The "declaration of general interest" in the Spanish legislation cannot be automatically equated with the concept of "overriding public interest" in article 4(7)(c). This has to be justified case by case in the 2nd RBMPs.

- Avoid presenting the maintenance of **ecological flow in new dams** as an ecological benefit of the dam, but consider it as a **mitigation measure**. Justify the flood protection share on a case by case basis, including the justification that there is no better environmental option.
- Separate very clearly in 2nd RBMPs the **measures designed to achieve the environmental objectives** from others. The latter need to be treated as Article 4(7) exemptions whenever appropriate (i.e. modifications to water bodies liable to cause deterioration or prevent the achievement of good status or potential).
- Review the way the **modernisation of irrigation** is considered in the PoMs. Only those projects which genuinely contribute to the WFD objectives should be labelled as such. Such contribution should be justified and quantified in the RBMPs on a case by case basis. The abstraction permits should be reviewed and set to meet the environmental objectives and then modernisation is the efficiency measure put in place to achieve compliance with the new permit condition.
- Ensure that there is a proper **integration of the pressure and impact analysis, the status assessment and the design of the programme of measures**. Avoid defining the PoMs on the basis of business as usual and a non-transparent assessment of "what can be done", but rather on a genuine gap analysis that identifies which measures are needed to achieve good status and can also support the justification of exemptions.
- Ensure that RBMPs **apportion impacts to pressures and sources/drivers**, to increase the understanding of which activities and sectors are responsible –an in which proportion- for achieving objectives.
- Ensure that RBMPs provide much **more information about the measures**, such as their location (including the number of water bodies), classification (basic, other basic, supplementary) and character (voluntary or binding), the targeted sector and source, the pressure they address (beyond the current grouping by general topics) and the expected specific effects in terms of status improvement.
- Consider and **prioritise the use of green infrastructure and/or natural water retention measures** that provide a range of environmental (improvements in water quality, increase of infiltration and thus aquifer recharge, flood protection, habitat conservation etc.), social and economic benefits which can be in many cases more cost-effective than grey infrastructure, as well as other restoration measures, removal of dams and other hydro morphological barriers.
- Ensure that the **process of selecting (or not) measures** is more sound and transparent, providing in the RBMPs not only statements that a cost-effectiveness analysis has been carried out, but also informing on the measures that have been considered in the analysis, its results and how this assessment has influenced the selection of measures.
- Clarify in the RBMPs what **technical measures** are behind legislation and how much they contribute to closing the gap to good status as basic measures are mostly presented as legislative acts (e.g. articles of the Water Law and related regulations).

- Ensure that appropriate basic measures are established for **control of diffuse pollution**. The basic measures for diffuse pollution should go **beyond the Nitrates Directive** codes of practice, which are voluntary instruments limited to nitrates issues. They do not address other agricultural pressures (phosphates, pesticides, etc.). Mandatory measures that are controllable should be included in the 2nd RBMPs.
- Ensure that **monitoring of drinking water protected areas** include all relevant parameters of the Drinking Water Directive.
- Define the **status of protected areas** to ensure a harmonised approach across the country.
- Carry out a comprehensive study together with the responsible authorities for nature to derive the **quantitative and qualitative needs for protected habitats and species**, translated into specific objectives for each protected area which should be inserted in the RBMPs. Appropriate monitoring and measures should also be included in the RBMPs.
- Introduce **volumetric abstraction fees for all users** (including self-abstraction of groundwater) covering properly calculated environmental and resource costs. Ensure that the cost-recovery instruments are adapted as soon as possible to the WFD to ensure that they provide adequate incentives to use the water efficiently. In addition, the revenues of cost-recovery instruments should be sufficient for the river basin authorities to effectively execute their water management tasks (update and maintenance of register of abstractions, monitoring, etc.).
- Develop a basic **harmonisation of the minimum elements to be included in water tariffs for drinking water supply and waste water treatment** for the 2nd RBMPs to ensure long-term sustainability of investments in water protection across the country.
- Consider water use for energy production (hydropower and cooling) as **water service**, and relevant information (cost recovery, environmental and resource costs, "discount rates for dams") should be transparently presented in the updated RBMPs.
- **Present transparently subsidies and cross-subsidies** in the 2nd RBMPs (i.e. desalinated water, dam construction, etc.) and justify dam discount calculation on a case by case basis.
- Extend calculation of **environmental costs** to costs related to energy production (hydropower, cooling) and diffuse pollution from agriculture.
- Reinforce the **cooperation with Portugal and France** in shared River Basin Districts (covering characterisation, pressures and impacts, monitoring, assessment of status, public consultation, measures, etc.), ensuring that there is a common understanding for transboundary water bodies and catchments for these issues. The outcomes of such cooperation (in particular with Portugal) should be reflected in the RBMPs or ad-hoc background documents.