Summary of Spanish river basin management plans

Second cycle of the WFD (2015-2021)

GOBIERNO DE ESPAÑA
MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA
SECRETARÍA DE ESTADO DE MEDIO AMBIENTE
DIRECCIÓN GENERAL DEL AGUA

Summary of Spanish river basin management plans

Second cycle of the WFD (2015-2021)

Authors:
Directorate-General of Water, Secretary of State for the Environment, Ministry for the Ecological Transition
Hydrographic Studies Centre, Centre for Public Works Studies and Experimentation (CEDEX), Ministry of Public Works, Ministry for the Ecological Transition.

MINISTRY FOR THE ECOLOGICAL TRANSITION

Published by:
©Ministry for the Ecological Transition
General Technical Secretariat
Centre of Publications
Madrid 2019

Plaza de San Juan de la Cruz, s/n
28071 Madrid
Tel.: 915.976.577-78
www.miteco.gob.es

Catalogue of Publications of the General State Administration:
https://cpage.mpr.gob.es

Official publication identification number (NIPO): 638-19-074-6
Legal Deposit: M-34912-2019

Publication included in the editorial programme of the abolished Ministry of Agriculture, Fisheries and Food, and edited by the Ministry for the Ecological Transition, (in accordance with the ministerial restructuring established by Royal Decree 355/2018 of 6 June).

This paper complies with the FSC® (Forest Stewardship Council®) and PEFCTM (Programme for the Endorsement of Forest Certification schemesTM) international standards, of which the raw material comes from sustainably managed forests. By consuming this paper we promote the conservation of forests and their sustainable use.

FSC www.fsc.org FSC® C101674 The mark of responsible forestry

PEFC PEFC/09-31-004 Promoting Sustainable Forest Management www.pefc.org

Prologue

Although due to our peculiar characteristics and historical background, the use of resources and the increase of its availability have traditionally prevailed over environmental protection, from the end of the 20th century, with the entry into force of the Water Framework Directive, Spanish hydrological planning prioritizes the achievement of the good status of water bodies.

In fact, in recent years, a paradigm shift has occurred in Spanish hydrological planning, fully adopting the provisions that govern European water policy. A policy that, we must not forget, we shaped together with the rest of the Member States and institutions of the European Union.

Compliance with requirements and established terms has finally been achieved, thanks to the great efforts of civil servants from diverse Public Administrations, technicians from consulting companies, as well as the users, non-governmental organisations, professional associations and society in general. In this respect, it must be emphasised the technical competency and engagement demonstrated by the hydrological planning offices of the hydrographic confederations, and the equivalent bodies at the regional level, and especially the General Subdirectorate for Water Planning and Sustainable Water Use that, from the Ministry, have coordinated all of the works.

The most obvious result of this labour is that the second cycle water plans (2015-2021), referenced in this document, are in force today.

This summarised report was created to facilitate the public dissemination of the enormous amount of information contained in the Spanish river basin management plans, summarizing the complex process of the second cycle hydrological planning in the twenty-five Spanish river basin districts. We sought a more fluid and accessible language, incorporating plenty of graphic and visual elements that help to present the exhaustive set of data collected. All of this provides a general overview of the situation of water in Spain through the summarising of the river basin management plans.

Fundamental and necessary throughout the process was the compulsory interadministrative cooperation. The information exchange and the dialogue between the persons in charge of the Administrations involved, both the General State and Autonomous Communities, as well as the continued public participation and consultation of the proposals prior to their approval, made the final approval of the adopted plans possible.

To continue honouring our commitments and responsibilities, the authorities in charge of the Spanish river basin districts have begun the revision process of the current river basin management plans and of the implementation of the measures envisaged to which diverse competent authorities have committed to.

I sincerely hope that administrations, water managers, users, companies, social agents, environmental organizations and society as a whole will be involved and collaborate again enthusiastically in the process of updating these plans, in order to complete their new revision before end of the year 2021. The experience gained in previous processes will allow us to do so in a more efficient, transparent and participatory way

Manuel Menéndez Prieto

Director-General of Water

Summary of Spanish river basin management plans

Second cycle of the WFD (2015-2021)

Table of contents

List of addenda

List of tables

List of figures

List of maps

Acronyms used

AC	Autonomous Community
ADU	Agricultural Demand Unit
AISI	Agro-Climatic Information System for Irrigation
BAL	Balearic Islands River Basin District
BOE	Spanish Official State Journal
CAN	Canary Islands River Basins District
CAP	Common Agricultural Policy of the EU
CAT	Catalonia River Basin District
CEDEX	Centre for Public Works Studies and Experimentation
CEU	Ceuta River Basin District
CGU	General Community of Users
CIS	Common Implementation Strategy
CJEU	Court of Justice of the European Union
CMA	Andalusian Mediterranean River Basins
COC	Western Cantabrian River Basin District
COR	Eastern Cantabrian River Basin District
DG	Directorate-General
DGA	Directorate-General for Water
DUE	Duero River Basin District
DWC	District Water Council
EAFRD	European Agricultural Fund for Rural Development
EBR	Ebro River Basin District
EC	European Commission
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
ES	Spain
ESF	European Social Fund
EU	European Union
FUE	Fuerteventura River Basin District
GAL	Galicia-Coast River Basin District
GCA	Gran Canaria River Basin District
GDN	Guadiana River Basin District
GDQ	Guadalquivir River Basin District
GOM	La Gomera River Basin District
GWB	Groundwater Body
GYB	Guadalete and Barbate River Basin District
HC	High Court
HCJ	High Court Judgement
HIE	El Hierro River Basin District
IC	Irrigation Community
IDU	Industrial Demand Unit
IGME	Geological and Mining Institute of Spain
INE	National Institute of Statistics
IPH	Hydrological Planning Instruction
JCU	Central Board of Users
JUC	Jucar River Basin District
LAN	Lanzarote River Basin District
LPA	La Palma River Basin District
LSO	Less Stringent environmental Objectives
MAGRAMA	Ministry of Agriculture, Food and the Environment
MAPAMA	Ministry of Agriculture and Fisheries, Food and the Environment
MEL	Melilla River Basin District
MIMAM	Ministry of the Environment
MIÑ	Miño-Sil River Basin District
MITECO	Ministry for Ecological Transition
NA	Not applicable
ND	Unavailable data or information
NHP	National Hydrological Plan

NWC	National Water Council
PA	Protected Area
PR	Previous Requirement
PRBMP	Proposal of River Basin Management Plan
IOSWMI	Interim overview of Significant Water Management Issues
RBD	River Basin District
RBMP	River Basin Management Plan
RD	Royal Decree
RPH	Hydrological Planning Regulation (RD 907/2007, of 6 July)
SAC	Special Area of Conservation (Habitats Directive)
SCI	Site of Community Importance (Habitats Directive)
SEA	Strategic Environmental Assessment
SEG	Segura River Basin District
SES	Strategic Environmental Study
SIMPA	Integrated System for the Modelling of the Precipitation-Contribution Process
SWB	Surface Water Body
SWMI	Significant Water Management Issues
SWOT	Strengths, Weaknesses, Opportunities and Threats
TAJ	Tagus River Basin District
TEN	Tenerife River Basin District
TOP	Tinto, Odiel and Piedras River Basin District
TRLA	Recast Text of the Water Act (Royal Legislative Decree 1/2001, of 20 July)
UCLM	University of Castilla-La Mancha
UDU	Urban Demand Unit
WFD	Directive 2000/60/EC, establishing a framework for the Community action in the field of water policy. Water Framework Directive
WPW	Water White Paper in Spain (MIMAM, 2000)

01
Introduction

With the adoption and publication of Directive 2000/60/EC, of 23 October, establishing a framework for Community action in the field of water policy (WFD), the 22 December 2015 was established as the date on which the Member States of the European Union, having implemented the programmes of measures set out in the relevant river basin management plans, must have reached the environmental objectives provided in Article 4 of said WFD.

The date of 22 December 2015, apart from indicating the time horizon of compliance for environmental objectives, also coincides with the requirement to publish second cycle river basin management plans. These plans are referred to the six-year period elapsing from this 22 December 2015 to 21 December 2021; they have been prepared as a result of the review of the previous river basin management plans corresponding to the first cycle (2009 – 2015).

Therefore, once the possibility of facing the beginning of the follow-up and revision works of these new plans is offered, it is then time to analyse the position we are in. It is necessary to identify the goals reached, which improvements must be sought and which other questions must be added to the ongoing process of hydrological planning so as to move forward, efficiently and firmly, towards achieving planning objectives established in national and community regulations.

The historic pressure due to the use of water in Mediterranean countries and, particularly, in most of Spain, has caused that our hydrological planning by river basins includes among its objectives those aiming to meet water demands while increasing the availability of the resource. Besides, it may also be said that these quantitative issues, which usually differ from the river basin management plans of other European countries, have concentrated most of the concerns of the interested parties and the discussion that came along with this process, while replacing to a certain extent those debates referring to environmental objectives.

However, the achievement of environmental objectives is a legal requirement arising from the need to put pressure on the water environment within sustainability parameters. These goals require the introduction of cultural changes both in hydrological planning policies and in other sectoral public policies depending, one way or another, on water. These modifications may allow the update of water management in Spain in line with the 2030 Agenda for Sustainable Development (United Nations, 2015), an agenda that promotes changes aiming at reversing consumption and production trends, so as to reduce pressure on water.

In this situation, as a reference to face present issues and future challenges, it was considered appropriate to gather the information available regarding the requirements set out by the WFD and the Spanish laws included in the second cycle river basin management plans, in addition to the reporting obligations to the European Commission (EC), a job that requires the prior gathering and systematization of the information included in this document in accordance with the criteria established in guidance documents prepared to such end (EC, 2016).

Likewise, it is necessary to update the general data on water in Spain, since such data serves both as a base and support of any hydrological planning process. Within this field, the Water White Paper in Spain (MIMAM, 2000) is a referent. This publication includes, whenever possible due to the nature and scope of the information, a comparison between the new data currently obtained and those offered by the Water White Paper (WPW). Likewise, sometimes a comparison with European data taken from the summary document prepared by the European Commission referring to first cycle river basin management plans (EC, 2012a) is offered.

For the preparation of this document, reports by the National Water Council on second cycle river basin management plans adopted in the meetings of the Council held on the 30 September and 28 October 2015 have been used. Then, the work was completed by means of data, basically collected from river basin management plans approved by the Government on the 8 January 2016 (Royal Decrees 1 and 11/2016, 8 January). In the

case of the seven river basin districts of the Canary Islands, provisional information from the second cycle (currently under public consultation) has been used and when these data were not available, data from the first cycle were taken.

Finally, it must be highlighted that data offered in this document have been consolidated by means of the information reported by Spain to the European Union in 2016, so it was necessary to create a complex database in line with the requirements established by the technical services of the European Commission. The identification and correction of errors concerning data revealed during this process has allowed to establish the information contained herein and which substitutes any other preceding information, in particular, that set out in the aforementioned reports submitted to the National Water Council or the one published throughout the first semester of the year 2016 by different media due to the special interest such information may have raised.

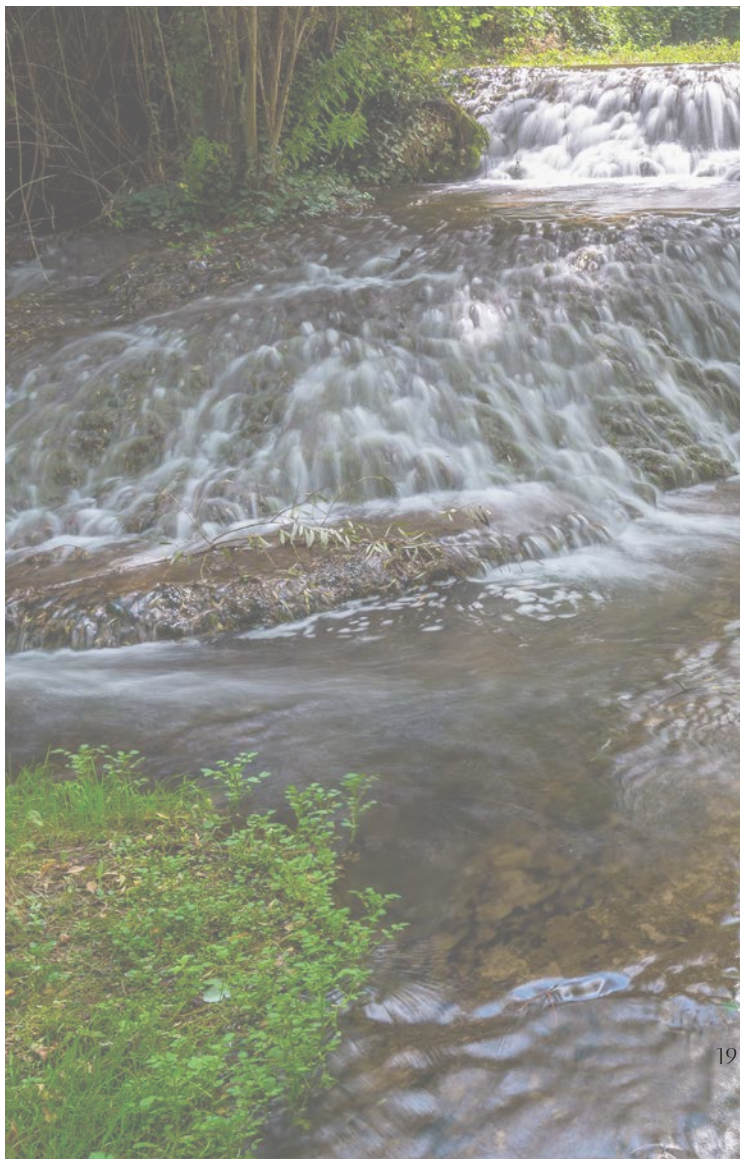
1.1

Purpose of the report

The purpose of this report is to serve as a basic explanatory document of the water situation in Spain, including an objective diagnosis, in line with the second cycle river basin management plans (2015-2021). This document will serve as a proper guidance for future works on the planning and management of water.

This report also aims to take the first step towards making it easier to access the enormous amount of documentary information included in Spanish river basin management plans, in particular, second cycle plans.

Last, but not least, constructive criticism of the information provided and of the way of dealing with data has been included, since the goal of this document is to consolidate basic and objective information over which no disagreement may arise.



1.2

Structure and scope of the report

This report has seven chapters over which the following contents are developed:

1º. Introduction. Description of the purpose of the document and the general characteristics of the hydrological planning process in Spain.

2º. Description of the proceedings. Description of the different milestones achieved during the planning process leading to Government approval of second cycle river basin management plans.

3º. Structure and contents of the plans. Description of the documentary configuration of the different river basin management plans, using some tables to indicate the location of the different contents in the documents comprising the plans.

4º. Analysis of the content of the new river basin management plans. Summarised information of the main contents of the river basin management plans: characterization of the river basin districts and of the water bodies, basic data of the water resources inventory, identification of significant pressures, general data on water uses and demand, information on the transfer of water resources among different planning areas, general data on the implementation of the ecological flow regimes, on the assignment and reservation of resources, identification of protected areas, data on monitoring and on the status of water bodies, information on the environmental objectives and exemptions and, finally, on the recovery of the costs of water services.

5º. Programmes of measures. Description of programmes of measures and the different investments foreseen for river basin management plans.

6º. Final diagnosis. General issues on the situation of the planning process in Spain so as to deal with the follow-up of second cycle plans and the preparation of third cycle plans.

7º. Bibliographical references. Works cited in the text so as to make their location easier.

Three addenda are attached including detailed information about: 1) Territory and population of the Autonomous Communities in the river basin districts, 2) Types of surface water bodies (total and by river basin district), and 3) Assessment of the status / ecological potential and of the chemical status of surface water bodies.

1.3

The plans and their territorial scopes

The territorial scopes to which these plans are referred to correspond to a total of 25 River Basin Districts: 11 in the field of State Competence, 13 in the field of Autonomous Communities and a River Basin District under both types of competences (State and Autonomous Community of Basque Country competences). These areas are listed in Table 1 and are represented in Map 1.

This report refers to river basin management plans prepared in Spain in order to satisfy the requirements of the second cycle of hydrological planning. As previously stated, in the case of Canary Islands, provisional information from the second cycle, which is currently under public consultation, has been used. When not possible, data related to first cycle plans were taken.

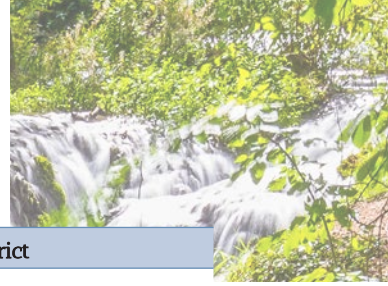
The territorial scope of each river basin management plan matches the one corresponding with the relevant river basin district. Royal Decree 125/2007, of 2 February, is the national regulation establishing the territorial scope of the river basin districts, or the Spanish territory of the international river basin districts, when they are integrated by inter-community river basins or, as in the case with the Easter Cantabrian, by inter-community and intra-community river basins. For those river basin districts exclusively comprised of intra-community river basins, the Autonomous Communities which have undertaken its management by virtue of their Statute of Autonomy, have adopted specific regulations of the territorial delimitation, as shown in Table 2.

Code	Acronym	Scope
ES017	COR	Spanish territory of the Eastern Cantabrian River Basin District
ES018	COC	Western Cantabrian River Basin District
ES014	GAL	Galicia-Coast River Basin District
ES010	MIÑ	Spanish territory of the Miño-Sil River Basin District
ES020	DUE	Spanish territory of the Douro River Basin District
ES030	TAJ	Spanish territory of the Tagus River Basin District
ES040	GDN	Spanish territory of the Guadiana River Basin District
ES064	TOP	Tinto, Odiel and Piedras River Basin District
ES050	GDQ	Guadalquivir River Basin District
ES063	GYB	Guadalete and Barbate River Basin District
ES060	CMA	Andalusian Mediterranean Basins District
ES070	SEG	Segura River Basin District
ES080	JUC	Jucar River Basin District
ES091	EBR	Spanish territory of the Ebro River Basin District
ES100	CAT	Catalonia River Basin District
ES110	BAL	Balearic Islands River Basin District
ES160	MEL	Melilla River Basin District
ES150	CEU	Ceuta River Basin District
ES123	LAN	Lanzarote River Basin District
ES122	FUE	Fuerteventura River Basin District
ES120	GCA	Gran Canaria River Basin District
ES124	TEN	Tenerife River Basin District
ES126	GOM	La Gomera River Basin District
ES125	LPA	La Palma River Basin District
ES127	HIE	El Hierro River Basin District

Table 1. Territorial scopes.

Map 1. Spanish River Basin Districts

For those planning scopes the management of which is responsibility of the General State Administration, the river basin institutions in charge of these plans are the relevant River Basin Authorities of the Cantabrian, Miño-Sil, Douro, Tagus, Guadiana, Guadalquivir, Segura, Jucar and Ebro. The river basin districts of Ceuta and Melilla are special cases since they lack the specific River Basin Authority and are therefore managed by the Guadalquivir River Basin Authority, which is in turn responsible for their river basin management plans. On the other hand, in the special case of the river basin management plan of the Spanish territory of the Eastern Cantabrian



River Basin Districts	Regulation that establishes the delimitation of the district
Galicia-Coast	Act 9/2010, of 4 November, on waters in Galicia
Intra-community river basin districts of Andalusia: Tinto, Odiel and Piedras, Guadalete and Barbate and Andalusian Mediterranean Basins	Decree 357/2009, of 20 October, establishing the territorial scope of the river basin districts of the intra-community river basins located in Andalusia
Catalonia River Basin District	Decree 31/2009, of 24 February, establishing the territorial scope of the Catalonia River Basin District and amendment of the Regulations regarding the hydrological planning approved by virtue of Decree 380/2006, of 10 October
Balearic Islands	Decree 129/2002, of 18 October, on the organisation and the legal regime of the water Administration of the Balearic Islands
River basin districts of the Canary Islands: Lanzarote, Fuerteventura, Gran Canaria, Tenerife, La Gomera, La Palma and El Hierro	Act 12/1990, of 26 July, on Waters

Table 2. Regulations governing the delimitation of the river basin districts composed exclusively of intra-community river basin districts.

river basin district, which comprises, together with several inter-community river basins, the intra-community river basins of the Basque Country, two managers working together are identified: the Cantabrian River Basin Authority for the inter-community territory, and the Basque Water Agency for the intra-community territory management of the Basque Country.

In the remaining planning scopes the management of which corresponds to the Autonomous Communities, the river basin authorities in charge of the plans are: Aguas de Galicia for the Galicia-Coast River Basin Management Plan; the Regional Government of Andalusia for the plan of the Andalusian Mediterranean Basins, Guadalete and Barbate Basins, and Tinto, Odiel and Piedras River Basin Districts; the Water Agency of Catalonia for the Catalonia river basin district; the Directorate-General of Water Resources of the Government of the Balearic Islands for the river basin district of the Balearic Islands; and the corresponding Water Island Council for each one of the seven districts of the Canary Islands.

Second cycle river basin management plans have been approved by the Government by means of the following regulations, which are included in chronological order:

a) Royal Decree 701/2015, of 17 July, approving the Balearic Islands River Basin Management Plan.
b) Royal Decree 1/2016, of 8 January, approving the review of the River Basin Management Plans of the river basin districts of the Western Cantabrian, Guadalquivir, Ceuta, Melilla, Segura and Jucar and Spanish territory of the river basin districts of the Eastern Cantabrian, Miño-Sil, Douro, Tagus, Guadiana and Ebro.
c) Royal Decree 11/2016, of 8 January, approving the River Basin Management Plans of the river basin districts of Galicia-Coast, Andalusian Mediterranean Basins, of the Guadalete and Barbate and of the Tinto, Odiel and Piedras.
d) Royal Decree 450/2017, of 5 May, approving the River Basin Management of the Catalonia river basin district.

The complete and finally approved version of the plans is the one published on the websites of the different river basin authorities (Table 7) and which corresponds to the one submitted to the European Commission. Besides, some official journals publish part of the regulations corresponding to said river basin management plans separately from the other contents. In the case of the 12 plans managed by the national Government, their regulations have been published in the BOE as addenda to RD 1/2016, of 8 January. That is not the case with the plans of intra-community river basin districts, for which their approving royal decrees published in the BOE do not attach the regulatory content of the plans. However, some Autonomous Communities, by virtue of their competences, have included a publication in their official journal, such as:

a) Galicia-Coast: Order of 29 January 2016, approving the publication of the regulation of the Galicia-Coast River Basin Management Plan. Official Journal of Galicia nº 33 of 18 February 2016.

b) Andalusian Mediterranean Basins: Order of 23 February 2016, approving the publication of the regulatory provisions of the Andalusian Mediterranean Basins Management Plan, approved by Royal Decree 11/2016 of 8 January. Official Journal of the Regional Government of Andalusia nº 71, of 15 April 2016.

c) Guadalete and Barbate: Order of 23 February 2016, approving the publication of the regulatory provisions of the Guadalete and Barbate River Basin Management Plan, approved by Royal Decree 11/2016 of 8 January. Official Journal of the Regional Government of Andalusia nº 72, of 18 April 2016.

d) Tinto, Odiel and Piedras: Order of 23 February 2016, approving the publication of the regulatory provisions of the Tinto, Odiel and Piedras River Basin Management Plan, approved by Royal Decree 11/2016 of 8 January. Official Journal of the Regional Government of Andalusia nº 72, of 18 April 2016.

e) Catalonia River Basin District: Decree 1/2017, of 3 January, approving the river basin management of the river basin district of Catalonia for the cycle 2016-2021. Official Journal of the Catalonia Government nº 7,281, of 5 January 2017.

Therefore, Spain has 18 second cycle river basin management plans already approved and 7 pending approval, the ones corresponding to the seven Canary Islands.

In the case with the Canary Islands, the approval of the river basin management plans is not the responsibility of the Government but, due to its particular characteristics, corresponds to the Government of the Autonomous Community. The second cycle plans are in the final phases of their approval process, so throughout the present document, data from the Canary Islands river basin districts corresponding to this second cycle have been included. Pending such final approval, the list of rules that approved the first cycle plans, still in force in September 2018, is included below:

a) Decree 33/2015, of 19 March, establishing the termination of the validity of the Gran Canaria River Basin Management Plan, approved by Decree 82/1999 of 6 May, and approving the transitional substantive rules on hydrological planning of the Gran Canaria river basin district so as to comply with Directive 2000/60/EC, of the European Parliament and of the Council, of 23 October 2000, establishing a framework for the Community action in the field of water policy.

b) Decree 34/2015, of 19 March, establishing the termination of the validity of the River Basin Management Plan of La Gomera, approved by Decree 101/2002

of 26 July, and approving the transitional substantive rules on hydrological planning of the La Gomera river basin district so as to comply with Directive 2000/60/EC, of the European Parliament and of the Council, of 23 October 2000, establishing a framework for the Community action in the field of water policy.

c) Decree 45/2015, of 9 April, establishing the termination of the validity of the River Basin Management Plan of Fuerteventura, approved by Decree 81/1999 of 6 May, and approving the transitional substantive rules on hydrological planning of the Fuerteventura river basin district so as to comply with Directive 2000/60/EC, of the European Parliament and of the Council, of 23 October 2000, establishing a framework for the Community action in the field of water policy.

d) Decree 49/2015, of 9 April, definitely approving the River Basin Management Plan of the Tenerife river basin district.

e) Decree 52/2015, of 16 April, establishing the termination of the validity of the El Hierro River Basin Management Plan, approved by Decree 102/2002 of 26 July, and approving the transitional substantive rules on hydrological planning of the El Hierro river basin district so as to comply with Directive 2000/60/EC, of the European Parliament and of the Council, of 23 October 2000, establishing a framework for the Community action in the field of water policy.

f) Decree 112/2015, of 22 May, establishing the termination of the validity of certain provisions of the La Palma River Basin Management Plan, approved by Decree 166/2001 of 30 July, and approving the transitional substantive rules on hydrological planning of the La Palma river basin district so as to comply with Directive 2000/60/EC, of the European Parliament and of the Council, of 23 October 2000, establishing a framework for the Community action in the field of water policy.

g) Decree 362/2015, of 16 November, establishing the termination of the validity of the Lanzarote River Basin Management Plan, approved by Decree 167/2001 of 30 July, and approving the transitional substantive rules on hydrological planning of the Lanzarote river basin district so as to comply with Directive 2000/60/EC, of the European Parliament and of the Council, of 23 October 2000, establishing a framework for the Community action in the field of water policy.

.

1.4

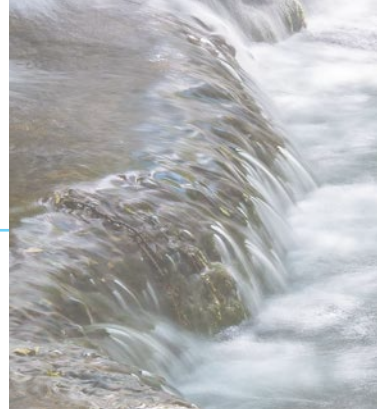
Objectives and criteria of the hydrological planning

Article 40 of the consolidated text of the Spanish Water Law (TRLA, as per the Spanish acronym), establishes the objectives and criteria corresponding to hydrological planning in Spain which, once undertaken by virtue of the approved plans, are literally the following:

1. *The general objectives of hydrological planning will be the achievement of the good status and proper protection of the water public domain and water bodies subject purpose of this Law, the meeting of water demands, the balance and harmonisation of the regional and sectoral development by increasing the availability of the resource, protecting its quality, making its use sustainable and rationalising its use while respecting the environment and other natural resources.*
2. *Water policy is intended to serve to the sectoral strategies and plans on water uses as established by the Public Administrations, notwithstanding the rational and sustainable management of this resource that should be undertaken by the Ministry of the Environment, or the appropriate Water Administrations, which will be the authorities responsible for granting any authorisation, concession or infrastructure as requested.*
3. *The planning will be carried out by means of river basin management plans and the National Hydrological Plan. The territorial scope of each river basin management plan will match the one corresponding with the relevant river basin district.*
4. *River basin management plans will be public and binding, notwithstanding their periodic update and justified revision, and they will not create rights on their own in favour of individuals or entities, so their amendment will not give rise to any compensation whatsoever, without prejudice to the provisions of Article 65*[1].
5. *The Government, by means of royal decree, will approve the river basin management plans in the terms deemed fit based on the common interest, without prejudice to the provisions set out in the following section.*
6. *River basin management plans prepared or reviewed under the provisions of Article 18*[2] *will be approved if in line with provisions of Articles 40.1, 3 and 4 and 42, they do not affect the resources of other river basins and, where appropriate, they are in line with the provisions of the National Hydrological Plan.*

[1] Referring to the review of concessions. Only in the event that the revision was caused by the requirement of adaptation to River Basin Management Plans, will the damaged concessionaire have the right to receive compensation, in accordance to the general law of mandatory expropriations.

[2] Referred to the legal regime applicable to the Autonomous Communities which, by virtue of their Statute of Autonomy, exercise competences on the water public domain in river basins fully located within their territories.



1.5

The process of hydrological planning

Hydrological planning is a cyclic and iterative process, based on consecutive approaches to an ever changing reality, by means of which different actions related to the use and management of waters are designed, so as to achieve certain environmental and socioeconomic objectives.

The Spanish Water Law of 1985 provided a new hydrological planning which had been designed for some years and which has to be implemented at two levels: by mean of river basin management plans customised by river basins, without administrative limits, just based on hydrographic criteria; and for the whole country, by means of a national hydrological plan. The basic objectives of this planning were: the meeting of water demands and the balance and harmonisation of the regional and sectoral development by increasing the availability of the resource, protecting its quality, making its use sustainable and rationalising its use while respecting the environment and other natural resources.

This approach led to the approval in Spain (Royal Decree 1664/1998, of 24 July) of the first river basin management plans, as well as a National Hydrological Plan in 2001 (Act 10/2001, of 5 July, on the National Hydrological Plan). The website of the current Ministry for the Ecological Transition (MITECO, as per the Spanish acronym) offers a link to the aforementioned documents through the following address: http://www.miteco.gob.es/es/agua/temas/planificacion-hidrologica/planificacion-hidrologica/default.aspx.

The characteristics of the National Hydrological Plan differ from those of the river basin management plans. This National Plan is approved by means of a specific Act, whereas river basin management plans are adopted by the Government by means of Royal Decree. Therefore, the National Plan has the authority to amend river basin management plans and to settle those issues affecting an area greater than that corresponding to a single river basin district. An example of this is the transfer of water resources between different planning districts, which may only be managed through the National Hydrological Plan or other specific regulations equivalent to Acts.

On the 23 October 2000, the European Parliament and the Council of the European Union passed Directive 2000/60/EC, establishing a framework for Community action in the field of water policy. This regulation, known as the Water Framework Directive (WFD), meant a revolution in the practise of European hydrological planning and has also influenced water policies in other territories outside the European Union.

Somewhat based on the Spanish hydrological planning procedure, consisting of a cyclic mechanism developed by river basin districts, the WFD has implemented it as the general process all Member States of the European Union must apply so as to achieve certain environmental objectives, by means of the execution of a set of programmes of measures. The environmental objectives are set out as an objective limit to the pressures that socioeconomic activity is putting on water, thus guaranteeing sustainability.

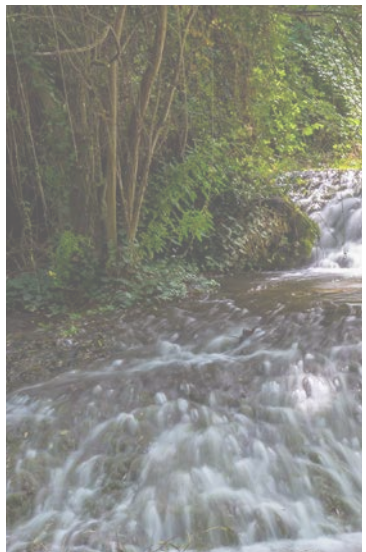
Therefore, hydrological planning in Spain had to adapt to the requirements of the EC and pass new river basin management plans complying with these new objectives. Consequently, between the years 2011 and 2015, new river basin management plans have been approved in replacement of the aforementioned plans of 1998, giving rise to first cycle plans (2009 - 2015) of the WFD and then, second cycle plans (2015 - 2021). In the same website where National Hydrological Plan can be found, new river basin management plans which have been prepared in Spain as a consequence of the implementation of the WFD for the 25 river basin districts the national territory is divided into (Map 1) are included.

Before moving forward, it is important to point out that the Spanish scenario is complex: there are river basins and river basin districts fully managed by the national government and there are other which, since they do not exceed the territorial scope of a single Autonomous Community, are managed, partially for this matter or almost completely, by the relevant Autonomous Community.

Below, an explanation of the general scenario for hydrological planning corresponding to inter-community river basin districts in which the management is carried out by the State by means of the relevant River Basin Authority, which is in charge of the competences of that river basin, is presented. The special characteristics of the process corresponding to intra-community river basins do not differ much, in general terms, from the one followed by the national government. Changes are the consequence of specific details in line with the exercise of the competences of each autonomous community within this field. However, the general working procedure established in the WFD is followed for all scenarios.

The hydrological planning process must be completed every six years, being the closing years 2009, 2015, 2021 and so on. During such six-year periods, several works must be carried out, as shown in Figure 1. This figure includes four horizontal rows with boxes in different colours and tones, representing different set of activities which must be carried out. Time elapses from left to right, that is to say, the execution order of the works shown in the figure also goes from left to right.

There is a section "River Basin Management Plan" that represents the relevant hydrological planning process. This row includes "Initial Documents" which are some sort of basic reference information; an intermediate document called "Significant Water Management Issues" (SWMI) to be developed in two phases, an initial phase by means of an interim overview of the Significant Water Management Issues (IOSWMI) and a second phase with the consolidation of the final document of the SWMI. This overview, supported by the Initial Documents, aims at identifying the main problems which, at the level of the hydrological planning, must be resolved by means of the Plan finally adopted; it also aims at identifying the causes of the problems, those responsible for them and any possible alternative for solving them in line with programmes of measures developed.



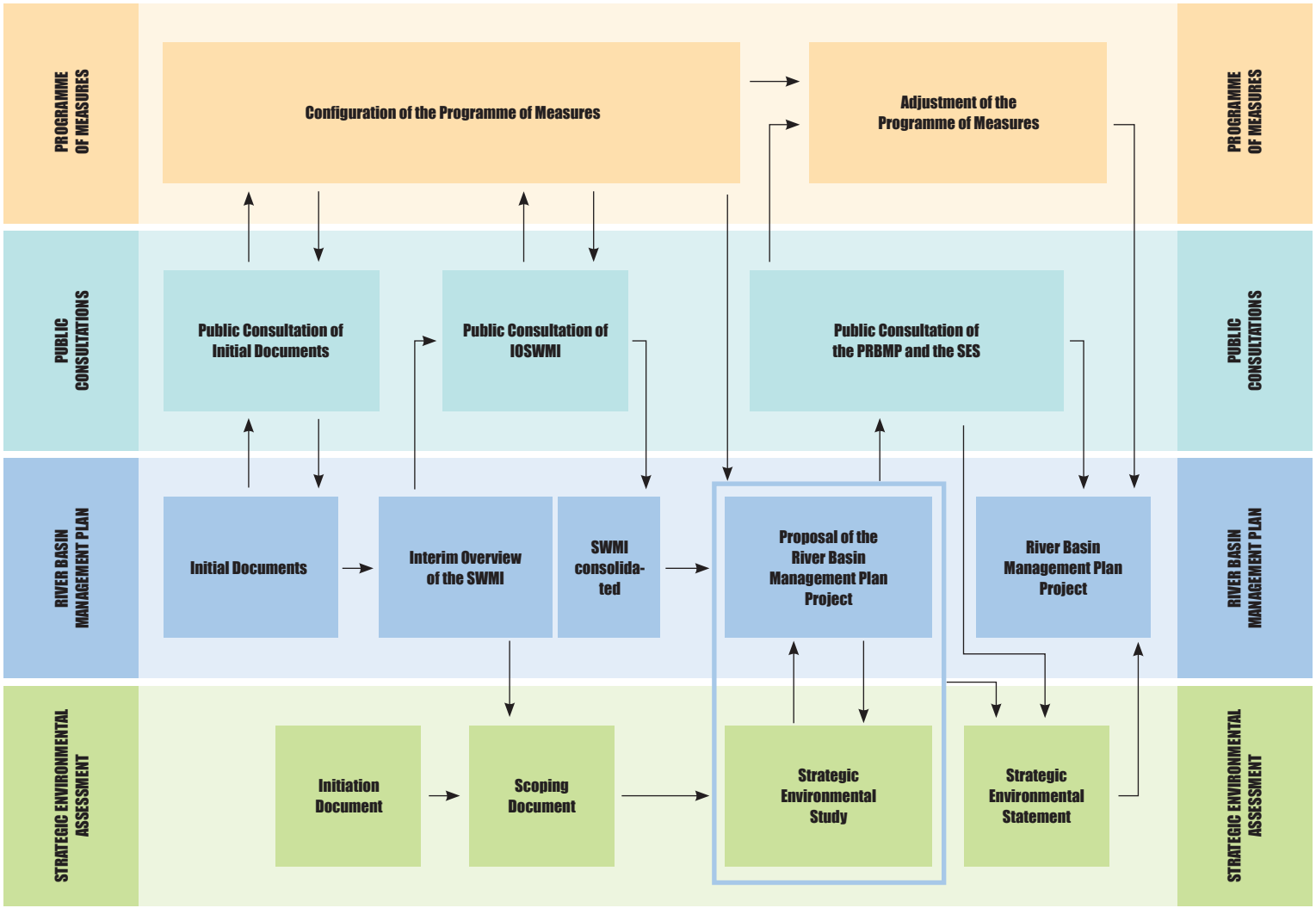


Figure 1. Outline of the process of hydrological planning.

Finally, based on the contents established in the consolidated SWMI, the River Basin Management Plan develops the problem-solving procedures corresponding to the relevant problems. In this instance, an initial version is also available (project proposal) as well as a final one (project) which is the one submitted for approval. In Spain, this process requires the approval of the Council of Ministers so as to adopt a passing royal decree which must be published in the Official State Journal.

The case with the districts of the Canary Islands, as previously stated, is an exception to this general rule. Said

exception is set forth in additional provision nº nine of the TRLA, so by virtue of Act 12/1990, on Waters of the Canary Islands, the approval of plans corresponding to these islands is the responsibility of the Regional Government of the Autonomous Community.

Public participation is relevant in the planning process and, besides, is a formal requirement that must be complied with. In particular, by means of public consultation of the documents which are being prepared throughout the process. The row "Public Consultations" represents a term of at least six months, required for the consolidation of the Initial Documents, the SWMI and the River Basin Management Plan itself.

Even though it is not a specific requirement of the WFD, river basin management plans in Spain, and in other European states, are subject to the procedure of strategic environmental assessment shown in the bottom row of the figure.

Since river basin management plans provided by the WFD are plans with exclusively environmental objectives, it may be interpreted that, on a general basis, the strategic environmental assessment is not legally required. However, since hydrological planning in Spain does not abandon the synergistic benefits of other socioeconomic objectives, the meeting of demands and management of the effects of extreme hydrological and climate phenomena, such as floods and drought, objectives the achievement of which may entail the proposal and consideration of certain hydraulic infrastructures, Spanish plans must be subject to strategic environmental assessment by virtue of the provisions of Directive 2001/42/EC, of 27 June, on the assessment of the effects of certain plans and programmes on the environment, transposed into the Spanish legal systems by means of Act 21/2013, of 9 December, on environmental assessment.

In those river basins the management of which corresponds to the Autonomous Communities, these may adopt the national act with the necessary amendments to cover their particular characteristics or even pass additional regulations. This is the case with Andalusia, which adopted Act 7/2007, of 9 July, on the Integrated Management of Environmental Quality; with the Autonomous Community of the Balearic Islands, which adopted Act 11/2006, of 14 September, on environmental impact assessments and strategic environmental assessments in the Balearic Islands; with Catalonia, which was passed Decree 380/2006, of 10 October, approving the Regulation for hydrological planning; and with the Canary Islands, which passed for the environmental assessment of first cycle plans the Act 9/2006 of 28 April, on the assessment of the effects of certain plans and programmes on the environment. In the river basin district of Galicia-Coast, for its part, national Act 21/2013 has been applied.

The assessment procedure established in Act 21/2013 ("Strategic Environmental Assessment" section in Figure 1), starts with an initiation document the promoting body sends to the national or regional environmental authority, from the State or the Autonomous Community (as appropriate), explaining its intention of planning and the approach such Plan may have. In order to do this, the Initiation Document of the environmental assessment is simultaneously prepared with the IOSWMI, since said document corresponding to the planning process states, in an initial and provisional manner, those problems to be solved and the possible solutions. With this information, the environmental authority prepares a Scoping Document, which describes the contents and the depth the strategic environmental study, accompanying the River Basin Management Plan, must have. Such Scoping Document may also include recommendations on the

identification of the agents to which public consultations must be addressed.

The aforementioned Strategic Environmental Study accompanies the River Basin Management Plan during its public consultation phase. To close the assessment process, based on all background information and, in particular, on the results of the consultations, the environmental authority prepares the Strategic Environmental Statement, establishing requirements that must be included in the River Basin Management Plan before its final approval. In Figure 1, in Strategic Environmental Assessment section, there are documents that correspond to prepare to promoter: Initiation Document and Strategic Environmental Study; and documents that correspond to prepare to the environmental authority: Scoping Document and Strategic Environmental Statement.

The "Programmes of Measures" section includes actions that the different competent authorities of the district territory must implement in order to meet hydrological planning objectives, in compliance with the provisions of the relevant river basin management plan. Said actions may vary in nature: technical studies, regulatory instruments or specific physical actions and infrastructures. The first type includes works for the research and improvement of knowledge or the maintenance of certain control networks; as instances of regulatory instruments, the limitations on certain authorisations or approvals for the use of water bodies may be mentioned, such as, for example, the implementation of ecological flow regimes; finally, as an example of infrastructure, the construction of a drainage network transporting waste water to a plant for its treatment, before the discharge may be mentioned.

In order to properly shape the programme of measures, it is very important to make sure the cooperation and collaboration mechanisms governing the relationships between the different authorities with shared competences over the territory of certain river basin districts and river basin authorities that prepare the river basin management plan work properly. In Spain, these competences are distributed in the different levels of the Administration, from local administrations (in charge, for example, of the urban cycle of water), to Autonomous Communities (with different competences on spatial planning, agriculture and the environment) and to the General State Administration. In order to ensure efficient cooperation and collaboration, the law creates the so-called Committees of Competent Authorities (Article 36 bis of the TRLA) for those districts with inter-community river basins and requires that Autonomous Communities guarantee the aforementioned cooperation for those districts with intra-community river basins.

Programmes of measures are continuously being adjusted throughout the entire preparation process of the plans, in accordance with the needs of the river basin management plans and with the capabilities and interests of the different Public Administrations. In order to do so, at the end of the process and within the national scope, before the Water Council of each district (DWC) submit the river basin management plan to the Government for approval, the Committee of Competent Authorities of the relevant district must express its agreement.

The Water Council of the river basin district (or the equivalent body in intra-community scopes) is the planning and participation body in each one of the territorial scopes to which the river basin management plans refer. Both Public Administrations and the other stakeholders are proportionally represented in these bodies. Its report, sent to the Government through the Ministry that holds the competences over water, together with the

River Basin Management Plan proposal, is a relevant and compulsory document for the processing of river basin management plans, prior to the analysis carried out by the National Water Council, advisory body which, in accordance with the provisions of the TRLA has to inform before the ministerial procedure on the project of the royal decree for the approval of river basin management plans.

1.6

Specific characteristics of second cycle plans

Second cycle river basin management plans, as well as complying with the different requirements they must meet, aim at overcoming the deficiencies detected in the first cycle river basin management plans which have been registered in different documents. Among them, the documents and requirements included below must be highlighted, as well as other issues arising from the different judgements of the High Court (HC) issued in response to the appeals filed against first cycle plans, a topic which is dealt with at the end of this section.

1.6.1. Association Agreement

Spain has executed with the European Union a Framework Agreement (MINHAP, 2014), establishing ex-ante conditions of the use of Community funds during the programming period 2014-2020. These conditions arise as a consequence of the identification of improvement opportunities for the actions of the Member State in defining the different public policies of community interest, among which the ones referring to water are particularly relevant. Among the most significant conditions on this topic, it may be highlighted the following:

"Second cycle river basin management plans will include a homogeneous estimation of the level of the recovery of the costs containing the part corresponding to the services of environmental costs. Likewise, regardless of the cost-recovery analysis, river basin management plans will include an estimate of the costs of the resource under ordinary supply conditions, according to the planning scenario foreseen for 2021. Term, 4th quarter 2015.

Spain commits to analyse the suitability of the cost-recovery instruments included in each river basin management plan in order to achieve the goals of the WFD and, as the case may be, to revise them considering the outcome of the economic analyses contained in each plan throughout the 4th quarter of 2016.

All plans must be in line with the provisions set forth in the WFD and other relevant regulations, in accordance with the construction of such provisions by the Court of Justice of the European Union. River basin management plans will include the justification for the exceptions to the environmental objectives in accordance with the obligations of Articles 4(4), 4(5) and 4(7). Term, December 2015".

Non-compliance with these commitments seriously jeopardises the use of the European Funding (ERDF, EAFRD, ESF and EMFF).

1.6.2. EAFRD Regulation

Article 46 of Regulation 1305/2013, of 17 December, on support for rural development by the European Agricultural Fund for Rural Development (EAFRD), established a series of compulsory criteria seriously conditioning the consideration of investment in irrigation installations as eligible expenditure and, therefore, eligible for co-funding.

A major part of compliance criteria is based on the information to be provided by river basin management plans. Therefore, this information has been included in these new second cycle plans after being researched into very thoroughly. In order to so, the aim is that the use of the funds of the second pillar of the Common Agricultural Policy (CAP) do not encounter any lack of support information necessary to verify compliance with the provisions of the aforementioned Article 46, since such lack of information may hinder the eligibility of actions for the improvement or implementation of irrigation systems channelled through the different rural development programmes.

1.6.3. Documents regarding infringement proceedings on EU

The European Commission has filed against Spain several investigation and penalty proceedings, some of which have reached the Court of Justice of the European Union (CJEU) due to the degree of compliance of the Community obligations on water provided by Directives 91/271/ECC, of 21 May, concerning urban waste water treatment; 91/676/EEC, of 12 December, concerning the protection of waters against pollution caused by nitrates from agricultural sources and, particularly, the aforementioned WFD. Additionally, those procedures related to water corresponding to Directives 92/43/EEC, of 21 May, on the conservation of natural habitats and of wild fauna and flora and 2009/147/EC, of 30 November, on the conservation of wild birds, must also be taken into account.

The control action of the Commission regarding these proceedings has been published in judgements of the CJEU, as the one of 4 October 2012, ruling against Spain for failing to have approved river basin management plans (case C-403/11), which has been recently filed (25/02/2016), or the one of 14 April 2011, regarding its failure to comply with the required treatment for urban waste water from populations over 15,000 equivalent inhabitants discharging in standard areas (case C-343/10), and in pre-litigation phase files or by means of different preliminary investigations carried out by the European Commission within the framework of the experimental procedures designed for the study of those topics involving problems with the application of Community law.

Hydrological planning objectives are significant enough to be established by Law. Hence the need of guaranteeing a strict compliance of the legally established obligations regarding content and procedure related requirements to be met during the planning process. For this reason, second cycle river basin management plans have been prepared attempting to meet the relevant requirements based on the interpretation made by the relevant courts of justice, in particular both the CJEU and the High Court of Spain.

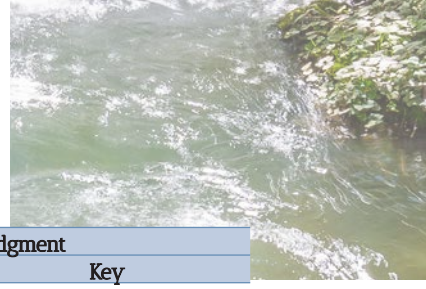
1.6.4. Analysis of the EC on first cycle plans

The European Commission examined the first cycle river basin of all Member States. After such examination, the Communication known as Blueprint was prepared (EC, 2012b). The study of the vast majority of the Spanish plans by the European institutions was carried out afterwards and it was not reflected in the Blueprint. However, it gave rise to a productive exchange of opinions between both parts, the European Commission and Spain which, from an initial diagnosis prepared by the Commission and subsequently published (EC, 2015a), gave rise to a series of recommendations Spain undertook to adopt in the new river basin management plans. It may be stated that most of such commitments have been implemented in second cycle plans and in those programmes of measures corresponding to such plans.

The Commission will analyse second cycle plans of Spain again during 2017 / 2018, as it previously did with first cycle plans. After such analysis, the recommendations are expected to be updated and the improvement commitments Spain will have to undertake in the following years are expected to be renewed, in particular those related to the preparation process of the third cycle river basin management plans, which are being worked on.

1.6.5. Analysis of jurisprudence

It is obvious that first cycle river basin management plans have been the cause of many legal proceedings, which is shown by the number of appeals (45) represented by different parties against royal decrees approving such plans, most of which are repealed today.



Plan	Appeal		Reasons*	Judgment	
	Key	Petitioner		Date	Key
COR	330 / 2013	URWATT Association	1, 2, 3, 4	05 / 12 / 2014	Dismissed
COC	329 / 2013	URWATT Association	1, 2, 3, 4	11 / 07 / 2014	Dismissed
	341 / 2013	Hidrocantábrico, S.A.	1, 4	27 / 04 / 2015	Dismissed
	343 / 2013	Saltos del Navia, C.B.	1	17 / 06 / 2014	Dismissed
	345 / 2013	EON Generación, S.L.	1	11 / 07 / 2014	Dismissed
GAL	541 / 2012	Gas Natural SDG, S.A.	1, 4, 5, 7	12 / 12 / 2014	Partially (4)
	582 / 2012	APPA Association	4, 5	23 / 09 / 2014	Partially (4)
	584 / 2012	Endesa Generación, S.A.	1, 2, 4, 6	12 / 12 / 2014	Partially (4)
MIÑ	277 / 2013	Gas Natural SDG, S.A.	1, 2, 4, 7	23 / 01 / 2015	Dismissed
	278 / 2013	Endesa Generación, S.A.	1, 7	21 / 01 / 2015	Dismissed
DUE	328 / 2013	URWATT Association	1, 2, 4	02 / 07 / 2014	Dismissed
	360 / 2013	Gas Natural SDG, S.A.	5, 1, 4	20 / 01 / 2015	Dismissed
TAJ	400 / 2014	Tagus-Alberche Platform		22 / 06 / 2016	Dismissal of the cause
	402 / 2014	City Hall of Toledo		06 / 07 / 2016	Dismissal of the cause
GDN	309 / 2013	Groundwater Irrigation Community of Campo de Montiel	8	14 / 07 / 2015	Dismissed
TOP	585 / 2012	FERAGUA	8	09 / 12 / 2014	Dismissed
GDQ	311 / 2013	Surexport Compañía Agraria, S.L.	8	09 / 12 / 2014	Dismissed
	312 / 2013	Castril XXI Platform		23 / 06 / 2016	Dismissal of the cause
	315 / 2013	IC Subs. II-17 Almonte-Marismas	8	18 / 12 / 2014	Dismissed
	316 / 2013	IC Subs. II-11 Almonte-Marismas	8	11 / 12 / 2014	Dismissed
	317 / 2013	Irrigation Association of Andalusia	5	04 / 07 / 2014	Dismissed
	318 / 2013	UPA-Andalucía	5	04 / 07 / 2014	Dismissed
	320 / 2013	IC Subs. II-9 Almonte-Marismas	8	07 / 01 / 2015	Dismissed
	321 / 2013	Suppl. Consortium. "Plan Écija"	8	06 / 03 / 2015	Dismissed
	322 / 2013	IC Subs. II-10 Almonte-Marismas	8	07 / 01 / 2015	Dismissed
	323 / 2013	WWF-ADENA	9, 4, 10	26 / 02 / 2015	Partially (9, 10)
	418 / 2013	Regional Government of Andalusia	5	20 / 01 / 2015	Dismissed
CMA	583 / 2012	Endesa Generación, S.A.	1, 4, 7	11 / 06 / 2015	Partially (4)
SEG	866 / 2014	I&U Cabecera del Segura Platform		08 / 06 / 2015	Dismissal
JUC	262 / 2013 263 / 2013 266 / 2013	JCU of Vinalopó, l'Alacantí and Marina Baja, Sindicato río Turia and CGU of río Turia (aggregated)	11, 12	09 / 06 / 2015	Partially (11)
	875 / 2014	Ecologistas en Acción (CODA)		07 / 03 / 2016	Dismissal of the cause
	878 / 2014	City Councils of Ribera Júcar	9, 14	23 / 03 / 2017	Partially (14)
	881 / 2014	CGU of Medio Vinalopó		07 / 03 / 2016	Dismissal of the cause
	882 / 2014	CGU of Alto Vinalopó		29 / 02 / 2016	Dismissal of the cause
EBR	339 / 2014	Coordination against water-transfer and DEPANA		07 / 03 / 2016	Dismissal of the cause
	455 / 2014	AC of Catalonia	1, 4, 5, 9, 13, 14	20 / 11 / 2015	Dismissed
CAT	760 / 2011	AC of Aragón	5, 11	20 / 06 / 2014	Dismissal of the cause
	2,229 / 2013	AC of Aragón	5, 11	04 / 04 / 2014	Void (5)
	50 / 2015	Gremi d'Arids de Catalunya			
	77 / 2015	AC of La Rioja			
	79 / 2015	AC of Aragón			
	145 / 2016	AC of Aragón	5, 11		
BAL	433 / 2013	PSOE-Balearic Islands		29 / 10 / 2014	Dismissal

Table 3. Summary of the case law by the High Court regarding first cycle river basin management plans (2009-2015).

*List of reasons: 1. Ecological flows. 2. Use of water, preference order. 3. Requirement of measurement devices. 4. Conditions of the concessions, terms, acknowledgement of rights. 5. Processing defects. 6. Safety of dams. 7. Hydro-morphological measures. 8. Assessment and allocation of resources. Provisions. 9. Environmental objectives and exemptions. 10. Programme of measures. 11. Territorial delimitation. 12. Administrative organisation. 13. Encroachment of competences. 14. Recovery of the costs.

Among the cases admitted by the High Court (appeals against the Galicia-Coast, for example), it can be concluded that it is not possible to deny the application of Article 65.3 of the TRLA, according to which, concessions may be reviewed when so required by virtue of their suitability to river basin management plans; if so, "the damaged concessionaire shall be entitled to compensation, according to the provisions of the general regulations on mandatory expropriations". That is to say, compensation is applicable when the concession is reviewed and, as a consequence of it, the concessionaire is adversely affected. It is also concluded, against the construction made by some as per the allegations submitted during the processing of the plans, that the review of the concession and the associated compensation are not an automatic consequence of the enforcement of ecological flows.

Another of the issues ruled out favourably by the High Court (appeal against the Guadalquivir plan nº 323/2013) deals with the exemption to the compliance of environmental objectives due to new amendments, which is applicable when the conditions established in Article 4.7 of the WFD and Article 39 of the Hydrological Planning Regulation (RPH) are met. The judgement makes it clear that the qualification of any action as one of "general interest" and, therefore, falling within the competences of the General State Administration, is subject to a number of reports set out in Article 46.5 of the TRLA "*which are unrelated to the compliance with the requirements provided in Article 39.2 of the Planning Regulation and the objectives proposed in the aforementioned Directive 2000/60/EEC*".

The judgement also states that "*The conclusion we have reached is in line with the literal construction of Article 39.2 of the RPH, which flatly requires that causes of amendments (of water bodies) 'are specifically included and explained in the plan'. We must insist, when set forth in the plan and on the grounds of a specific cause. Therefore, general causes will not suffice.*"

That same judgement, regarding the compilation of the programme of measures, and particularly regarding the inclusion in that same programme of the drainage works of the Guadalquivir river for the enlargement of the Port of Seville, states: "*It must be taken into account that drainage works do not fall into any action category. Neither basic nor complementary categories, since the former are minimum requirements which must be met in each district and the latter, complementary categories are those which must be additionally applied to each specific case to reach the environmental objectives or to achieve additional protection of the water bodies*".

A third aspect favourably ruled out by the High Court (appeal 583/2012 against the Andalusian Mediterranean Basins) is the lack of authority of the river basin management plans to create new basic conditions for the concessions. The judgement states: "We do not believe that, given the specific provisions of river basin management plans, such plans may transcend the legal regulation, not even by creating some sort of (new) basic condition for the concession".

Finally, the High Court (appeal 874/2014 against the river basin management plan of the Jucar river basin district) emphasizes in this new judgment the obligation to take into account the principle of recovering the costs of water-related services, including environmental costs and resource-related costs, in accordance with the polluter pays principle; thus, emphasizing that the principle of cost recovery cannot be imposed at the cost of infringing, or simply discontinuing, the polluter pays principle.

Otherwise, there are many judgements which clearly support the drafting of river basin management plans, in particular, as regards those issues related to ecological flows and the other key issues formerly mentioned.

Appeals 262, 263 and 266/2013 must be mentioned separately since they are not addressed against the plan but against the definition of the territorial scope of the Jucar river basin district, an issue which is closely related and which has been causing problems for some years due to the conflicts arising from this delimitation (see appeal 107/2007 settled by virtue of High Court Judgement (HCJ) of 27 September 2011). The essence of this delimitation is not challenged; however, many stakeholders try to construe it in a way that may serve as the base for supporting other interests which are not explicitly included in the drafting so as to obtain hypothetical advantages regarding future rights on water distribution. The aforementioned appeals were partially admitted by the HC, which led to the urgent adoption of Royal Decree 775/2015 of 28 August, so as to reset the situation.

Taking into consideration the legal analysis developed by the aforementioned judgements, it may be concluded that most of the provisions initially set out in first cycle management plans are not illegal. However, it may be discussed whether they are efficient or not for the achievement of the objectives, but they are not in breach of the law. Second cycle plans being summarised in this document were created from this previous experience, knowing those issues which had been rejected by the High Court as well as those accepted. Therefore, they are consistent with the case law established and it is expected that, now that many of the most problematic issues are *res judicata*, second cycle management plans give rise to fewer lawsuits, at least regarding those formal issues settled by the HC.

After the coming into force by virtue of royal decrees approving second cycle river basin management plans, and the resulting repeal of royal decrees approving first cycle plans, the HC have usually declared the out of court settlement of the object of the cause for those cases pending judgement (Table 3).

At the closing date of this report, certain information on the new contentious-administrative appeals and appeals on grounds of unconstitutionality regarding second cycle river basin management plans which are being prepared or which have been already submitted to the High Court or the Constitutional Court is already available. Since in this instance plans have been approved by standard regulations instead of by individual rules, it is not always easy to identify the plan appealed against within the general case, as it can be a common issue to several plans. Table 4 summarises this situation at the closing date of this report for those matters corresponding to the High Court.

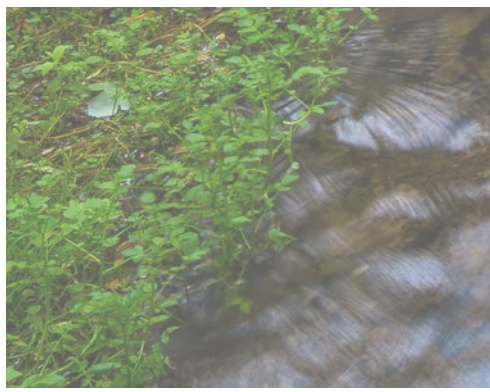
Rule being appealed against	Appeal/Petition		Affected Plan	Judgment	
	Key	Petitioner		Date	Result
RD 701/2015	1,865/2015	Platform for the defence of the Castril river Siglo XXI	Balearic Islands		
	4,092/2016	Platform for the defence of the Castril river Siglo XXI	Guadalquivir		
	4,333/2016	I&U Cabecera del Segura Platform	Segura		
	4,343/2016	Irrigation Community of Fuencaliente (Ciudad Real)			
	4,344/2016	City Council of Huescar (Granada)	Guadalquivir		
	4,351/2016	Platform of Tajo and Alberche. Talavera and 5 more	Tagus		
	4,375/2016	City Council of Albacete	Jucar		
	4,376/2016	Irrigation Community of Simarroteatinos			
	4,397/2016	City Council of Castril de la Peña (Granada)	Guadalquivir		
	4,398/2016	City Council of Toledo	Tagus		
	4,400/2016	Regional Gov. of Castilla-La Mancha	Tagus, Jucar, Segura and Guadiana		
	4,407/2016	URWATT Hydroelectric Power Generation Association	Douro		
	4,411/2016	Professional Association of Mining Eng. of Levante	Jucar		
	4,413/2016	Hidroeléctrica del Cantábrico, SAU			
	4,427/2016	City Council of Alcanar and 21 more	Ebro		
	4,428/2016	ADELPA	Ebro		
	4,429/2016	Gas Natural FENOSA	Miño-Sil		
	4,430/2016	City Council of Talavera de la Reina	Tagus		
RD 1/2016	4,432/2016	Water Users Community of San Clemente	Guadiana		
	4,434/2016	WWF/ADENA	Guadalquivir		
	4,435/2016	Hydroelectric of Giesta, S.L.	---	14/11/2016	Dismissal
	4,437/2016	JCU Vinalopó, Alacantí and C. Marina Baja	Jucar		
	4,439/2016	IC Balazote-La Herrera	Jucar		
	4,441/2016	Association of Renewable Energy Companies			
	4,444/2016	Endesa Generación, S.A.	Miño-Sil		
	4,445/2016	City Council of Fiscal (Huesca)	Ebro		
	4,447/2016	Hidro. Cantábrico, S.A.U. and Endesa Gen., S.A.			
	4,448/2016	IC of Alcazar de San Juan and 17 more			
	4.476/2016	CODA – Ecologistas en Acción	All		
	4,479/2016	Fenosa Wind, S.L.			
	4,482/2016	City Council of Aranjuez	Tagus		
	4,484/2016	City Council of Albalat de la Ribera and 12 more	Jucar		
	4,497/2016	Federation Ecologistas en Acción - Andalusia			
	4,710/2016	Provincial Government of Huesca and other	Ebro		
	4,711/2016	Regional Government of Catalonia	Ebro		
	4,712/2016	Provincial Government of Huesca and other	Ebro		

Rule being appealed against	Appeal / Petition		Affected Plan	Judgment	
	Key	Petitioner		Date	Result
RD 11 / 2016	4,431 / 2016	Bacardí España, S.A.			
	4,438 / 2016	NETOBRIL, S.A.			
	4,440 / 2016	Association of Industrial and Commercial Areas of Málaga and its province	Andalusian Mediterranean Basins		
	4,449 / 2016	Endesa Generación, S.A.			
	4,450 / 2016	Entidad Urbanística CCPI de Guadalhorce	Andalusian Mediterranean Basins		
	4,478 / 2016	Gestión de Inmuebles Adquiridos, S.L.U.			
	4,483 / 2016	City Council of Alhaurín de la Torre (Málaga)	Andalusian Mediterranean Basins		
	4,486 / 2016	Complejo Agrícola, S.L.			
	4,487 / 2016	Netco Investment, S.L.U.	Andalusian Mediterranean Basins		
	4,489 / 2016	J. Comp. Sector R2.6 PGOU de Torremolinos	Andalusian Mediterranean Basins		
	4,490 / 2016	OFATEL, S.L.			
	4,491 / 2016	General de Galerías Comerciales, S.A.			
	4,493 / 2016	José Romero Urbano	Andalusian Mediterranean Basins		
	4,495 / 2016	Community of Owners Colonia Cortijo Blanco			
RD 450 / 2017			Catalonia River Basin District		

Table 4. Appeals filed before the High Court regarding second cycle river basin management plans (2015-2021).

Since these appeals were filed recently, there have been no judgements yet.

Additionally, the Constitutional Court, by means of judgement issued on 19 July 2016, admitted the appeal on the positive conflict of jurisdiction 2740 / 2016, filed by the Governing Council of Castilla-La Mancha regarding Annex XI (Jucar): Articles 1, 2, 3 and other related provisions including rules concerning those intra-community river basins of Royal Decree 1 / 2016, of 8 January. This jurisdictional appeal was declared inadmissible by Judgment of 15 December 2016.



02

Description of the proceedings

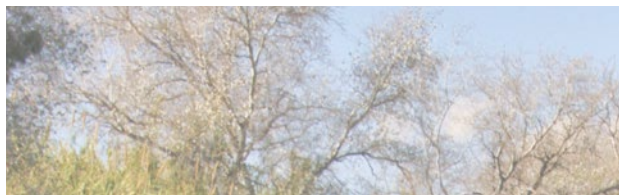
The procedure for the preparation and review of river basin management plans is developed by means of the complex proceedings summarised in the previous chapter when describing the planning process. This procedure, the general terms of which, but not the basic ones, are governed by Articles 76 to 82 of the Hydrological Planning Regulation (RPH), is the one followed for the preparation of second cycle river basin management plans taking into account the special characteristics adopted by the Autonomous Communities with competencies over their intra-community river basins.

Table 5 shows the dates of the main milestones established for the whole process, which allows to appreciate that the beginning of public consultation of Initial Documents took place in May 2013 in almost every river basin district; the one for the interim overview of Significant Water Management Issues was in December 2013; and that the publication of the majority of the river basin management plans happened in January 2016.

Scope		Acronym	Commencement consultation initial documents	Commencement consultation IOSWMI	Commencement consultation Plan	DWC Plan Report	NWC Report	Plan approval date	Plan publication date
Eastern Cantabrian	State	COR	25/05/2013	31/12/2013	31/12/2014	24/09/2015	28/10/2015	08/01/2016	19/01/2016
	Basque Country		25/05/2013	31/12/2013	31/12/2014	06/10/2015(*)			
Western Cantabrian		COC	25/05/2013	31/12/2013	31/12/2014	23/09/2015	28/10/2015	08/01/2016	19/01/2016
Galicia-Coast		GAL	25/05/2013	31/12/2013	06/01/2015	22/10/2015(*)	28/10/2015	08/01/2016	22/01/2016
Miño-Sil		MIÑ	25/05/2013	31/12/2013	31/12/2014	02/09/2015	30/09/2015	08/01/2016	19/01/2016
Douro		DUE	25/05/2013	31/12/2013	31/12/2014	03/09/2015	30/09/2015	08/01/2016	19/01/2016
Tagus		TAJ	25/05/2013	31/12/2013	31/12/2014	02/09/2015	30/09/2015	08/01/2016	19/01/2016
Guadiana		GDN	25/05/2013	31/12/2013	31/12/2014	04/09/2015	30/09/2015	08/01/2016	19/01/2016
Tinto, Odiel and Piedras		TOP	11/06/2013	15/02/2014	10/01/2015	20/10/2015(*)	28/10/2015	08/01/2016	22/01/2016
Guadalquivir		GDQ	25/05/2013	31/12/2013	31/12/2014	04/09/2015	30/09/2015	08/01/2016	19/01/2016
Guadalete and Barbate		GYB	11/06/2013	15/02/2014	10/01/2015	20/10/2015(*)	28/10/2015	08/01/2016	22/01/2016
And. Medit. Basins		CMA	11/06/2013	15/02/2014	10/01/2015	20/10/2015(*)	28/10/2015	08/01/2016	22/01/2016
Segura		SEG	25/05/2013	31/12/2013	31/12/2014	03/09/2015	30/09/2015	08/01/2016	19/01/2016
Jucar		JUC	25/05/2013	31/12/2013	31/12/2014	03/09/2015	30/09/2015	08/01/2016	19/01/2016
Ebro		EBR	25/05/2013	31/12/2013	31/12/2014	03/09/2015	30/09/2015	08/01/2016	19/01/2016
Catalonia		CAT	27/08/2013	15/03/2014	18/03/2015	03/01/2017(*)	16/03/2017	05/05/2017	24/05/2017
Balearic Islands		BAL	21/01/2014	07/03/2014	16/10/2014	08/05/2015(*)	27/05/2015	17/07/2015	18/07/2015
Melilla		MEL	25/05/2013	31/12/2013	31/12/2014	01/09/2015	30/09/2015	08/01/2016	19/01/2016
Ceuta		CEU	25/05/2013	31/12/2013	31/12/2014	02/09/2015	30/09/2015	08/01/2016	19/01/2016
Lanzarote		LAN	18/11/2016	18/11/2016	19/04/18	NA	NA	26/12/18(**)	31/12/18
Fuerteventura		FUE	19/12/2015	19/12/2015	19/04/18	NA	NA	26/12/18(**)	31/12/18
Gran Canaria		GCA	17/01/2018	17/01/2018	13/07/2018	NA	NA	21/01/19(**)	25/01/19
Tenerife		TEN	03/06/2015	03/06/2015	19/01/2018	NA	NA	26/11/18(**)	27/12/18
La Gomera		GOM	19/08/2014	19/08/2014	30/11/2017	NA	NA	17/09/18(**)	01/10/18
La Palma		LPA	01/04/2015	26/07/2016	26/01/2018	NA	NA	26/11/18(**)	07/12/18
El Hierro		HIE	29/06/2017	29/06/2017	19/04/18	NA	NA	26/12/18(**)	31/12/18

Table 5. Some of the key dates for the preparation of second cycle river basin management plans.

DWC: Water Council of the District; NWC: National Water Council; NA: Not applicable.
(*) Previous approval date by the Governing Council of the Autonomous Community.
(**) Defintive approval date by the Governing Council of the Autonomous Community.



As explained in the previous chapter, prior to the preparation of the proposal for the review of the river basin management plans, a set of documents, referred to as "initial documents", must be drafted; such documents are comprised of a work programme which must include, as well as the schedule on the phases foreseen for said review, the general study on the corresponding river basin district.

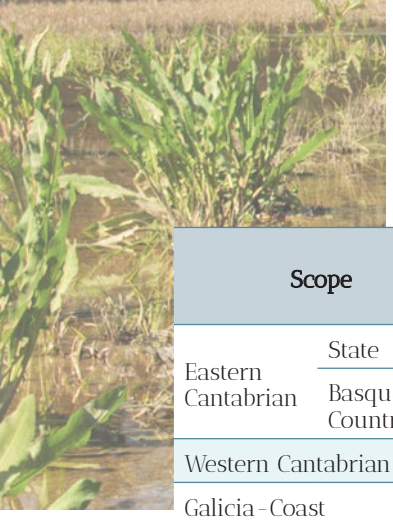
After the aforementioned previous works, the procedure for the preparation of river basin management plans was developed in two stages. During the first stage, the interim overview of the Significant Water Management Issues (IOSWMI), which was subject to public consultation during the dates set out in Table 5, was prepared. Once the aforementioned consultations are completed, the River Basin Authorities prepared the corresponding reports on the proposals, comments or suggestions while adding those deemed appropriate for the completion of the SWMI, which was finally reported by the Water Councils (or equivalent bodies of the intra-community river basins) of the corresponding districts.

After the identification of the problems concerning each river basin district in relation to water and after the discussion of possible action alternatives, river basin authorities drafted a first proposal for a river basin management plan which was subject to public consultation together with the first version of the strategic environmental study, or environmental sustainability report, as this document is called within the environmental assessment process in some of the intra-community river basin districts. This consultation period started on the dates shown in the aforementioned Table 5.

Once all consultations are completed, the relevant river basin authorities prepared a new report on the proposals, comments and suggestions which were presented regarding those documents subject to consultation while adding those deemed appropriate to the proposal of the river basin management plan which, prior to its submission to the Government through the MAGRAMA, required the mandatory report by the corresponding Water Councils of the River Basin District and the approval of the Committees of the Competent Authorities (or equivalent bodies in the case of those districts with intra-community river basins).

River Basin Management Plans that entirely correspond to intra-community river basin districts must be submitted to the Government once the Governing Council of the relevant Autonomous Community has completed its final approval. This is the date shown in Table 5 within the column which, for other cases, shows the one corresponding with the approving report by the DWC with the agreement for submission to the Government. In the case of plans corresponding to the Canary Islands districts, for which there is no date of referral to the Government, they are approved by the Autonomous Community itself.

In order to complete the information on the dates of the main milestones of the proceedings, Table 6 shows some of the relevant dates corresponding to the development of the strategic environmental assessment process developed simultaneously, also previously described in section 1.5, to which these river basin management plans have been subject to. Furthermore, this table reflects that the most part of the Initial Documents was published in April 2014 and the Strategic Environmental Statements in September 2015.



Scope		Initial Document	Scoping Document	Commencement Consultation Strategic Environmental Study	Approval of Strategic Environmental Statement	Publication of Strategic Environmental Statement
Eastern Cantabrian	State	09/04/2014	24/07/2014	31/12/2014	07/09/2015	22/09/2015
	Basque Country	11/04/2014	25/06/2015	31/12/2014	10/09/2015	
Western Cantabrian		11/04/2014	24/07/2014	31/12/2014	07/09/2015	22/09/2015
Galicia-Coast		15/09/2014	18/11/2014	04/06/2015	02/10/2015	29/10/2015
Miño-Sil		11/04/2014	24/07/2014	31/12/2014	07/09/2015	18/09/2015
Douro		09/04/2014	24/07/2014	31/12/2014	07/09/2015	18/09/2015
Tagus		25/06/2014	08/10/2014	31/12/2014	07/09/2015	18/09/2015
Guadiana		11/06/2014	08/10/2014	31/12/2014	07/09/2015	18/09/2015
Tinto, Odiel and Piedras				10/01/2015	05/10/2015	
Guadalquivir		16/04/2014	24/07/2014	31/12/2014	07/09/2015	18/09/2015
Guadalete and Barbate				10/01/2015	05/10/2015	
Andalusian Mediterranean Basins				10/01/2015	05/10/2015	
Segura		09/04/2014	24/07/2014	31/12/2014	07/09/2015	22/09/2015
Jucar		06/05/2014	24/07/2014	31/12/2014	07/09/2015	21/09/2015
Ebro		22/04/2014	24/07/2014	31/12/2014	07/09/2015	22/09/2015
Catalonia		10/03/2014	27/05/2014	18/03/2015	15/07/2016	22/07/2016
Balearic Islands		09/09/2014	04/11/2014	14/02/2015		
Melilla		11/04/2014	24/07/2014	31/12/2014	07/09/2015	21/09/2015
Ceuta		16/04/2014	24/07/2014	31/12/2014	07/09/2015	21/09/2015
Lanzarote (*)				19/04/2018	19/12/2018	25/01/2019
Fuerteventura (*)				19/04/2018	19/12/2018	25/01/2019
Gran Canaria		04/01/2018	19/04/2018	13/07/2018	18/01/2019	06/02/2019
Tenerife		17/02/2017	10/07/2017	19/01/2018	29/10/2018	15/11/2018
La Gomera		10/02/2017	07/07/2017	30/11/2017	26/07/2018	24/09/2018
La Palma		10/02/2017	07/07/2017	26/01/2018	29/10/2018	15/11/2018
El Hierro (*)				19/04/2018	19/12/2018	25/01/2019

Table 6. Key dates corresponding to the strategic environmental assessment of the river basin management plans.

(*) In the Strategic Environmental Assessment of river basin management plans of Lanzarote, Fuerteventura and El Hierro, simplified procedure has been chosen.

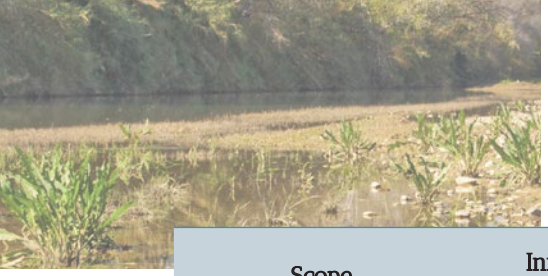
All documents prepared during the completion of the plans may be checked and downloaded from the links within the "Water" section on the Ministry for the Ecological Transition website (www.miteco.es) or from the websites of each one of the promoting river basin authorities, as established below (Table 7).

Public participation is not limited to the consultation of documents. It is a mechanism which must actively accompany the planning process so as to ensure the efficiency, transparency and control of the whole planning process.

As a result of the procedure, a great number of documents with proposals, comments and suggestions have been received; once analysed, they led to the improvement of those texts which were initially subject to public consultation.

Scope		RBD	Website
Eastern Cantabrian	State	COR	www.chcantabrico.es
	Basque Country		www.uragentzia.euskadi.eus
Western Cantabrian		COC	www.chcantabrico.es
Galicia-Coast		GAL	augasdegalicia.xunta.gal
Miño-Sil		MIÑ	www.chminosil.es
Douro		DUE	www.chduero.es
Tagus		TAJ	www.chtajo.es
Guadiana		GDN	www.chguadiana.es
Tinto, Odiel and Piedras		TOP	www.juntadeandalucia.es
Guadalquivir		GDQ	www.chguadalquivir.es
Guadalete and Barbate		GYB	www.juntadeandalucia.es
Andalusian Mediterranean Basins		CMA	www.juntadeandalucia.es
Segura		SEG	www.chsegura.es
Jucar		JUC	www.chj.es
Ebro		EBR	www.chebro.es
Catalonia		CAT	web.gencat.cat
Balearic Islands		BAL	www.caib.es
Melilla		MEL	www.chguadalquivir.es
Ceuta		CEU	www.chguadalquivir.es
Lanzarote		LAN	www.aguaslanzarote.com
Fuerteventura		FUE	www.aguasfuerteventura.com
Gran Canaria		GCA	www.aguasgrancanaria.com
Tenerife		TEN	www.aguastenerife.com
La Gomera		GOM	www.aguasgomera.es
La Palma		LPA	www.lapalmaaguas.es
El Hierro		HIE	www.aguaselhierro.org

Table 7. Web links to access the entire contents of the river basin management plans.



Scope		Initial Documents	SWMI	River Basin Management Plan Proposal	Total
Eastern Cantabrian	State	2	14	27	43
	Basque Country		8	27	35
Western Cantabrian		4	15	38	57
Galicia-Coast		5	13	30	48
Miño-Sil		6	23	79	108
Douro		7	18	97	122
Tagus		20	38	206	264
Guadiana		5	28	37	70
Tinto, Odiel and Piedras		8	10	26	44
Guadalquivir		262	32	1,819	2,113
Guadalete and Barbate		0	7	27	34
Andalusian Mediterranean Basins		4	14	92	110
Segura		6	28	110	144
Jucar		6	44	143	193
Ebro		9	17	5,211	5,237
Catalonia			422 (*)	101	101
Balearic Islands		ND	ND	ND	ND
Melilla		2	2	5	9
Ceuta		2	1	3	6
Canary Islands		ND	ND	ND	ND
TOTAL		348	312	8,078	8,738

Table 8. Number of documents with proposals, comments or suggestions received during public consultation stages.

(*) Proposals identified by means of participation processes other than public consultation. These processes are not included in the total amounts of the table.

Table 8 shows the number of documents received as a result of the different public consultation processes. The Ebro case must be highlighted, which gave rise to many documents from different signatories, although they only correspond to 98 different models. Among the most repeated issues of this river basin district, the concern about the ecological flows regime in the final stretch of the Ebro river (4,021 signatories) and in the final stretch of the Aguas Vivas river (924 signatories) highlights . It is also worth mentioning the number of documents received regarding the Guadalquivir river basin district, corresponding to 89 different models. Most of the comments, in this case, focus on the potential abstractions of the Castril river (764 signatories), the problems related to the enlargement of the Port of Seville (564 signatories) and the irrigation networks of Siles (441 signatories).

Once the works prepared by the promoting bodies are completed, the different proposals for river basin management plans are submitted to the Government through the Ministry, upon which the final stage of the proceedings commences, so then the responsibility of the technical services of the aforementioned department. During such stage, and by virtue of Article 20.1.b) of the TRLA, it is mandatory to obtain a report from the National Water Council. For the processing of second cycle river basin management plans, the Council meeting was called three times (Table 5): the first one on the 27 May 2015 to inform on the River Basin Management Plan of the Balearic Islands, the second on the 30 September 2015 to, among other items on the agenda, adopt the report on the approval proposal of the new river basin management plans of the Miño-Sil, Douro, Tagus, Guadiana, Guadalquivir, Ceuta, Melilla, Segura, Jucar and Ebro, and the third on the 28 October 2015 to inform on the plans corresponding to the Eastern and Western Cantabrian basins and the ones concerning the intra-community river basin districts

of Galicia-Coast, Tinto, Odiel and Piedras, Guadalete and Barbate and Andalusian Mediterranean Basins. These reports were adopted by vast majorities, although some comments on the votes were included which, in the case of national plans, were analysed in the dossier of the regulatory impact analysis (MAGRAMA, 2016) which was annexed to Royal Decree 1/2016 approving the aforementioned plans.

After that, the processing of this regulatory project referred to river basin management plans of the inter-community districts, which were initially designed as two partial projects; one for the plans corresponding to the Cantabrian river basin districts and another one to the rest of inter-community districts that require obtaining the following reports, previous approvals and rulings:

a) Report of the Technical Secretariat of the MAGRAMA, as proposing institution, as required by Article 24.2 of Act 50/1997 of 27 November, of the Government. Two reports are available, the first one dated 4 November 2015 and the second one dated 19 November 2015.

b) Report required by Article 24.1 b) of Act 50/1997, of 27 November, of the Government, by the following Ministries: Defence (first: no response, second: 10 November 2015), Health, Social Services and Equality (first: 16 October 2015, second: 10 November 2015), Public Works (first: 4 November 2015, second: 17 November 2015), Foreign Affairs and Cooperation (first: 7 October 2015, second: 4 November 2015), Ministry of Economy and Competitiveness (first: 12 November 2015, second: 12 November 2015), Industry, Energy and Tourism (first: 16 October 2015, second: 12 November 2015) and Interior (first: no response, second: no response).

c) Report of the Ministry of Finance and Public Administrations as provided in Article 24.3 of Act 50/1997, of 27 November, of the Government (first: 20 October 2015, second: 23 October 2015).

d) Previous approval of the Ministry of Finance and Public Administrations, according to Article 67.4 of Act 6/1997, of 14 April, on the Organisation and Operating of the General State Administration, since such regulation deals with administrative procedures (first: 20 October 2015, second: 13 November 2015).

e) Order of the State Council, foreseen in Article 22.2 of Organic Law 3/1980 of 22 April, of the State Council (first: order 1151/2015 of 26 November 2015, second: order 1228/2015 of 26 November 2015).

The analysis of these documents, including an explanation of the approach of the different comments made on the regulatory projects, is included in the aforementioned dossier for the regulatory impact analysis (MAGRAMA, 2016). As a result of the proceedings described above, the project for the approving royal decree was progressively adjusted, both from the different reports received and in line with the individual votes in favour of such reports and, particularly, from the reports obtained from the different ministries and order of the State Council.

In the case of royal decrees approving intra-community plans, the proceedings for their adoption by the Government is much simpler since the Government approval is a mandatory act confirming the initial approval given by the Governing Council of the corresponding Autonomous Community.

03

Structure and contents of the Plans

The formal structure the river basin management plans must follow is described in Article 81 of the RPH. Therefore, river basin management plans must be comprised of a Dossier, which must include at least those mandatory contents described in Article 42 of the TRLA and which may include any addenda deemed appropriate; and a Regulation, which must include the normative contents of the plan.

3.1

Structure of the plans

This Regulation must include the normative contents of the plan and which must be composed, at least, by the following: 1) identification and delimitation of surface water bodies, 2) reference conditions, 3) designation of artificial water bodies and heavily modified water bodies, 4) identification and delimitation of groundwater, 5) priority and compatibility of uses, 6) ecological flow regimes, 7) definition of exploitation systems, 8) allocation and reserve of resources, 9) definition of natural river reserves, 10) special protection regime, 11) environmental objectives and temporary deterioration of the status of water bodies, 12) conditions for new modifications or alterations and 13) organization and procedure for the implementation of public participation mechanisms.

Likewise, the plan must also contain a summary of programmes of measures, which is usually included as a chapter of the Dossier its contents being developed in one of its addenda. It must also contain those documents corresponding to the strategic environmental assessment process.

As a whole, these new river basin management plans are developed throughout more than 130,000 pages (Table 9) which will undoubtedly be a key reference during the following years, until they are updated again.

As previously explained (section 1.3), the Royal Decree 1/2016 of 8 January is the rule by which the twelve river basin management plans are approved, including Eastern Cantabrian River Basin Plan, and the one who integrates, as an annex, the normative part with its respective appendixes for each plan. Said regulation is comprised of a factual section and an enacting part including three articles, five additional provisions, two transitional provisions, one repealing provision and three final provisions.

The first article is devoted to the approval of the different river basin management plans. The second one, to the required analysis which must be carried out before the execution of hydraulic infrastructures, which includes the economic, environmental and technical feasibility reports, whereas the third one deals with the public interest statement for the purposes of mandatory expropriation. Additional provisions deal with different aspects related hydrological planning and, in particular, with water bodies. Transitional provisions refer to the application of new rules for the assessment of the status of water bodies and the final status of compatibility reports in relation to the river basin management plan, previously issued by the relevant river basin authority; said reports are being processed at the date of the coming into force of the new plans. Finally, a repealing provision of the currently valid plans is included, as well as two final provisions with the jurisdictional authority on which the regulation and its coming into force is based.

In the case with intra-community river basin management plans, regulatory parts are not attached to their corresponding approving royal decree and, therefore, are not published in the Official State Journal but are

published by the relevant Autonomous Community in its corresponding official journal. The concerned regulations (Royal Decrees 701/2015, of 17 July; 11/2016, of 8 January, and 450/2017, of 24 May) were simply passed to approve those river basin management plans prepared by the Autonomous Communities in accordance with Article 40.6 of the TRLA. Section 1.3 explains how the official publication of these regulatory parts, concerning the river basin management plans corresponding to intra-community river basin districts, were implemented.

Scope	Dossier	Dossier Addenda	Regulation	Regulation Addenda	Strategic Environmental Study
Eastern Cantabrian	298	4,695	53	61	592
Western Cantabrian	598	5,548	56	65	188
Galicia-Coast	4,101	1,948	35	115	201
Miño-Sil	2,715	15,601	44	71	212
Douro	486	16,106	36	136	229
Tagus	230	3,841	21	50	191
Guadiana	637	5,115	23	82	265
Tinto, Odiel and Piedras	405	1,663	35	135	223
Guadalquivir	173	3,821	20	114	238
Guadalete and Barbate	496	1,854	36	140	254
Andalusian Mediterranean Basins	2,203	3,202	28	98	206
Segura	816	11,759	54	50	510
Jucar	896	6,593	45	79	216
Ebro	256	8,686	60	139	531
Catalonia	536	1,102	45	31	156
Balearic Islands	497	529	134	177	268
Melilla	167	289	13	15	129
Ceuta	175	277	13	15	128
Lanzarote (*)	485	79	36	--	143
Fuerteventura (*)	628	296	88	30	160
Gran Canaria (*)	412	776	33	12	113
Tenerife (*)	575	3,125	267	897	70
La Gomera (*)	740	766	22	9	284
La Palma (*)	366	3,007	91	0	293
El Hierro (*)	142	777	73	--	130
SUM	19,033	101,455	1,361	2,521	5,930
TOTAL			130,300		

Table 9. Indicative values (number of pages) of the structure and size of river basin management plans.

(*) Data corresponding to the first cycle river basin management plan.

3.2

Compulsory content of the river basin management plans

The compulsory content that must be contained in river basin management plans is detailed in Article 42.1 of the TRLA. Despite the fact that such contents are mandatory, the physical reality of the different territories determines its compliance and scope. For example, in the Spanish territory of the Tagus river basin, the territorial scope to which such river basin management plan refers, there are not coastal water bodies nor transitional water bodies since such water body categories are located in the Portuguese territory of the river basin district and therefore, outside the territorial scope of the Spanish plan, which makes it impossible to develop such contents.

Besides, in accordance with the provisions of Article 42.2 of the TRLA, the first update of the river basin management plan, which is the one comprised by the second cycle plans (2015-2021) and all subsequent updates, must compulsorily include the following contents:

a) A summary of all changes or updates implemented from the publication of the preceding version of the plan.

b) An assessment of the progresses made towards the achievement of environmental objectives, included the presentation as a map of the results corresponding to the results of the controls carried out during the period of the previous plan and an explanation of the unmet environmental objectives.

c) A summary and an explanation of the measures foreseen in the previous version of the river basin management plan which are not being implemented.

d) A summary of all additional and transitional measures adopted, from the publication of the preceding version of the river basin management plan, for those water bodies which are unlikely to meet the foreseen environmental objectives.

On the other hand, the Directorate-General for Water of the MAPAMA, through the Sub-Directorate General for Sustainable Water Use and Planning, is in charge of establishing homogeneous and systematization criteria for the review of river basin management plans by virtue of Article 3.1.a) of Royal Decree 895/2017 of 6 October, developing the basic organic structure of the department.

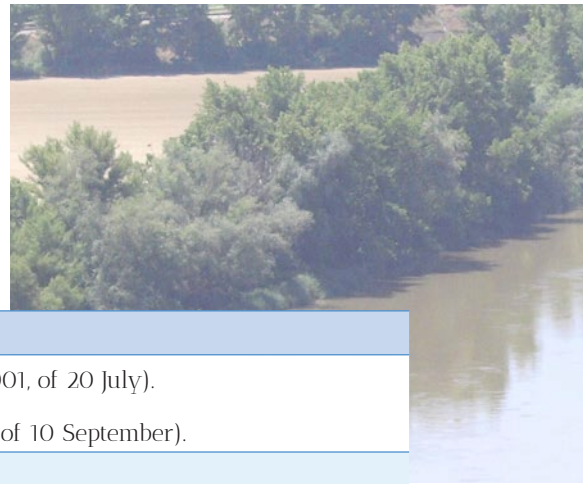
The Autonomous Communities with intra-community river basins, in those cases when national regulations are not required, have developed their own regulatory standards in this regard, in some cases motivated by the judgement of the CJEU, of 24 October of 2012, on the incomplete transposition of the WFD. The regulatory framework in this respect is described in Table 10.

For those areas of national competence, the scope within mandatory contents of the river basin management plans must be developed is described in the RPH, in particular, in Title I, Chapter I, of the aforementioned regulation, from Article 4 (Mandatory Contents of River

Basin Management Plans) to Article 65 (Contact Points and Procedures for the Obtaining of Documents and Information). Additionally, and in much greater detail, the Hydrological Planning Instruction (IPH) establishes the technical criteria for the homogenization and systematization of the preparation works for the river basin management plans applicable in inter-community river basins under Article 82 of the RPH.

So as to make the verification of its existence easier as well as the identification and location of all these content requirements of the river basin management plans, Table 11 shows a detailed list of the mandatory contents and chapter number in which such matter is developed within the Dossier of each one of the plans. Likewise, note that some of the contents are extended in the different addenda attached to the Dossiers of the plans.

Therefore, in conclusion, it may be stated that plans cover the mandatory contents set forth in Article 42 of the TRLA. Besides, they are covered in a systematic and highly organised manner by maintaining a common content structure which is remarkably consistent among the different plans.



Scope	Reference Regulation
National Basic Regulations	• Recast Text of the Water Act (approved by means of Royal Legislative Decree 1/2001, of 20 July). • Hydrological Planning Regulation (approved by means of RD 907/2007, of 6 July). • Hydrological Planning Instruction (approved by means of Order ARM 2656/2008, of 10 September).
Andalusia	• Act 9/2010, of 30 July, on waters in Andalusia. • Hydrological Planning Instruction for the intra-community river basin districts of Andalusia (approved by means of Order of 11 March 2015).
Catalonia	• Recast Text of the regulation of the waters in Catalonia (approved by means of Legislative Decree 3/2003, of 4 November). • Hydrological Planning Regulation (approved by means of Decree 380/2006, of 10 October).
Galicia	• Act 9/2010, of 4 November, on waters in Galicia. • Regulation for hydrological planning on waters of Galicia (approved by means of Decree 1/2015, of 15 January). • Hydrological Planning Instruction for the river basin district of Galicia-Coast (Order 2/2015 of 17 April).
Balearic Islands	• Decree 129/1992, of 18 October, approving the organisation and the legal regime of the Water Administration of the Balearic Islands. • Hydrological Planning Instruction for the intra-community river basin district of the Balearic Islands (approved by means of Decree Act 1/2015 of 10 April).
Canary Islands	• Territorial Act 12/1990, of 26 July, on Waters. • Hydrological Planning Instruction (approved by means of Decree 165/2015, of 3 July).
Basque Country	• Act 1/2006, of 23 June, on waters in the Basque Country.

Table 10. Reference of Spanish regulation describing the mandatory contents for river basin management plans.

Compulsory contents of the river basin management plans (Article 42.1 of the TRLA)	COR	COC	GAL	MIÑ	DUE	TAJ	GDN	TOP	GDQ	GYB
General description of the river basin district	2	2	2	2	2	2	2	2	2	2
Characterisation of surface water bodies	2.4	2.4	2.5	2.4	2.5	2.2	2.3	2.3.1	2.4	2.3.1
Characterisation of groundwater bodies	2.5	2.5	2.6	2.5	2.7	2.3	2.4	2.3.2	2.5	2.3.2
Inventory of resources	2.6	2.6, 2.9	2.7	2.6	2.8	2.4	2.6, 2.8, 2.9	2.5	2.6 to 2.8	2.5
Description of uses, pressures and impacts	3	3	3	3	3	3	3	3	3	3
Uses and demands	3.2, 3.4	3.2 to 3.4	3.2, 3.3	3.2, 3.4	3.2, 3.5	3.1	3.1, 3.4	3.1	3.1, 3.2	3.1
Priority criteria and use compatibility	4.2	4.3	4.2, 4.3	4.3	4.3	4.1	4.4	4.2, 4.3	4.2	4.2, 4.3
Ecological flows	4.3	4.2	4.4	4.2	4.2.1	4.2	4.1	4.4	4.1	4.4
Allocation and reservation of resources	4.6, 4.7	4.6, 4.7	4.7	4.6, 4.8	4.6, 4.7	4.3	4.6	4.7, 4.8	4.5	4.7, 4.8
Definition of the operation system	4.4	4.4	4.5	4.4	4.4	2	4.5	4.5	4.3	4.5
Identification and maps of protected areas	5	5	5	5	5	6	5	5	5	5
Control networks	6	6	6	6	6	7.1	6.1, 6.2	6	6	6
Assessment of the status of water bodies	7	7	7	7	7	7.2	6.3 to 6.5	7	7	7
List of environmental objectives	8	8	8	8	8	8	8	8	8	8
Exemption 4(3). Heavily modified bodies	2.4.1, 8	2.4.4	2.5.2	2.4.4	2.6	2.2	2.3.5	2.3.1	2	2.3.1
Exemption 4(4). Compliance term	8	8.3	8.4.1	8.8.1	8.3	8	10.4	8.3.1	8.3	8.3.1
Exemption 4(5). Less stringent environmental objective	8	8	8.4.2	8.8.2	8.3	8	NA	8.3.2	8.3	8.3.2
Exemption 4 (6). Temporary deterioration	8	8	8.4.3	8.8.3	8.4	8	10.5	8.4	8.6	8.4
Exemption 4 (7). New modifications	8	8	8.4.4	8.8.4	8.5	8	10.6	8.5	8.7	8.5
Economic analysis of water uses	3.2	3.2	3.2	3.2	3.3	3.1	3.3	3.1.2	3.2	3.1.2
Cost recovery analysis	9	9	9	9	9	9	7	9	9	9
Summary of programmes of measures	12	12	12	12	12	11	9	12	12	12
Programmes and plans registry in further detail	10, 11	10, 11	10, 11	10, 11	10, 11	(***)	12	10, 11	10, 11	10, 11
Information and consultation measures	13	13	13	13	13	13	11	13	13	13
List of competent authorities	15	15	15	15	15	14	14	--	15	--
Contact points	17	17	17	17	17	16	15	--	17	--
Procedures of information collection	17	17	17	17	17	16	15	--	17	--
Compulsory contents of the river basin management plans (Article 42.2 of the TRLA)	**COR**	**COC**	**GAL**	**MIÑ**	**DUE**	**TAJ**	**GDN**	**TOP**	**GDQ**	**GYB**
Summary of changes introduced from the publication of the previous Plan	16	16	16	16	16	15	16	15	16	15
Assessment of progress made in order to meet environmental objectives	16	8.4	16	16	16.10	15.9	16.7	15.6	8.4	15.6
Summary and explanation of measures not implemented	16	16	12.4	16	16.12	--	16.9	--	--	--
Summary of transitional additional measures adopted from the preceding version	16	16	12.4	16	16.12	--	16.9	--	--	--

Table 11. Identification of the chapter number of the dossier of the River Basin Management Plan in which such content is included.

CMA	SEG	JUC	EBR	CAT	BAL	MEL	CEU	LAN	FUE	GCA	TEN	GOM	LPA	HIE
2	2	2	II	2	2	2	2	2	2, 3, 4	2	XII	4	2	II
2.4.1	2.4	2.6	II.4	2.2	2.2	2.4	2.4	2.8.1, 2.8.2	5.1	2.7.1	XII.2	4.4.1	2.7.1	II.5
2.4.2	2.5	2.7	II.5	2.3	2.3	2.5	2.5	2.8.3	5.2	2.7.1	XII.4	4.4.2	2.7.2	II.6
2.5	2.6	2.9	II.6	2.4	2.4, 2.5	2.6, 2.7	2.6, 2.7	3.1	6	3.1	XII.5	4.4.3	3.1	II.7
3	3	3	III	3	3	3	3	2.10, 3.2	8.1	2.7.4	XIV	4.4.5	2.9	III.3
3.1, 3.3	3.1	3.1	III.1	3.1	3.1	3.1, 3.2	3.2, 3.3	3.2, 3.3	7	3.2, 3.3	XIII.1	4.4.4	3.2, 3.3	III.1
4.3	4.2	4.1	IV.3	3.3	4.2	4.3	4.3	(*)	(*)	(*)	(VI.1)	4.4.7	(*)	III.3
4.2	4.3	4.2	IV.2	3.3.3	4.1	4.2	4.2.1	(*)	--	--	--	--	(*)	III.4
4.6	4.4, 4.5	4.4	IV.6, IV.7	3.3	4.5	(*)	(*)	(*)	7.2	3.5.2	XV	4.4.7	(*)	III.5
4.4	4.7	4.3	IV.4	3.4	4.3	4.4	4.4	--	--	--	--	--	(*)	III.5
5	5	5	V	4	5	5	5	2.9	4.3	2.7.3	XVII	4.4.8	2.11	IV
6	6	6	VI	5	6	6	6	2.11	8.2	2.7.5	XIX	4.4.10	2.10	V
7	7	7	VII	6	7	7	7	2.12	8.2	2.7.2	XVIII	5.1	2.11	V
8	8	8	VIII	7	8	8	8	(*)	(*)	(1.1)	XVIII	(1.1)	(*)	(*)
2.4.1	2.4.5	2.6.5	II.4.2	2.2.4	2.2	2.4.2	2.4.2	2.8.2	5.1	2.7.1	XII.2	4.4.1	(1.7.1)	II.5
8.4.2	8.4	8.4	VIII	8.1	8.2	8.3	8.3	(*)	(*)	(1.1)	XVIII	(*)	(1.1)	(*)
8.4.2	8.4	8.4	VIII.6	8.2	8.2	8.3	8.3	(*)	(*)	(1.1)	XVIII	(*)	(1.1)	(*)
8.4.3	8.5	8.4	VIII	8.3	8.1.8	8.6	8.6	(*)	(*)	(*)	XVIII	(*)	(1.1)	(*)
8.4.4	8.6	8.4	VIII.7	8.4	8.1.9	8.7	8.7	(*)	(*)	(*)	XVIII	(*)	(1.1)	(*)
3.1	3.1.2	3.1.1	III.2	9	3.1.1	3.2	3.2	3.2	9.1	3.6	XIII.3	4.4.9	3.5	VII.1
9	9	9	IX	9	9	9	9	3.5	9.2	3.6	XIII.3	5.3	3.5	VII.2
12	12	12	XII	10	12	12	12	(**)	(4.2)	(7)	(VII.3)	(6)	(**)	(**)
10, 11	10, 11	10, 11	X, XI	11	10, 11	10, 11	10, 11	(1.2)	(7.4)	(1.3)	--	3.2	(6.3)	--
13	13	13	XIII	13	13	13	13	(6)	(7.2)	(9)	IX	4.4	5	(VI)
15	15	15	XV	14	15	15	15	5	1.3.1	(*)	--	4.4	(*)	(*)
--	13	17	XVII	15	--	17	17	--	1.1.3	--	--	--	1.4	(*)
--	13	17	XVII	15	--	17	17	--	1.1.3	--	--	--	1.4	(*)

CMA	SEG	JUC	EBR	CAT	BAL	MEL	CEU	LAN	FUE	GCA	TEN	GOM	LPA	HIE
16	16	16	XVI	12	16	16	16	NA	NA	NA	NA	NA	NA	NA
16.10	16.11	16.10	XVI.10	12.10	8.3	8.4	8.4	NA	NA	NA	NA	NA	NA	NA
16.11	16.12	--	--	--	--	16	16	NA	NA	NA	NA	NA	NA	NA
16.11	16.12	--	--	--	--	16	16	NA	NA	NA	NA	NA	NA	NA

For the Canary Islands, data correspond to first cycle plans. The number refers to the Information Dossier, if in parentheses, it refers to the Management Dossier.
NA: Not applicable. (*) This content is not included in the Dossier but in the Regulation. (**) Content included in a document unrelated to the Dossier.
(***) Content included in the Strategic Environmental Study.

04

Analysis of the content of the River Basin Management Plans

There follows a summary of the main contents of the second cycle river basin management plans. In order to do this succinctly, the most significant content of the relevant sections of the plans are described briefly ; such sections have been previously outlined in the first column of Table 11.

Since the new second cycle river basin management plans (2015–2021) are a review of the ones corresponding to the first cycle (2009–2015), the analysis is carried out, whenever possible, in comparison with data corresponding to first cycle plans. Data corresponding to first cycle plans which are used as a reference have been preferably collected from the diagnosis report prepared by the technical services of the European Commission (EC, 2015a).

In those cases when the nature of the information so allows, it has been tried to add up those data corresponding to Spain as a whole. To do this, it was necessary to use data from all river basin districts, in the case with the Canary Islands, the provisional ones referred to second cycle plans, and when not possible, information corresponding to first cycle plans has been used. In other occasions, data corresponding to peninsular Spain has been added up, the amount of which is not the same as the national total since it does not include the information of archipelagos or the autonomous cities of Ceuta and Melilla.

4.1

Characterisation of the river basin district

The 25 Spanish river basin districts comprising the territorial scopes to which the river basin management plans refer have been previously presented in section 1.3 and represented geographically in the Map 1. To complete this basic information, geographic data have been included and summarised in Table 12.

As previously stated, there are several river basin districts made up of river basins which do not go beyond the limits of the Autonomous Community (Table 2), referred to by the TRLA as intra-community river basin districts, and others, called inter-community, in which the territorial scope is shared by several Autonomous Communities. The table included as addendum 1 at the end of the texts documents the participation of each one of the Autonomous Communities, in terms of territory and population, within the territorial scope of each river basin district.

Surface area data included in addendum 1 and Table 12 are not obtained from the texts of river basin management plans but from a specific national work carried out with the geographic scope establishing the Spanish river basin districts. Said work has been used as a reference for the report of second cycle plans submitted to the European Commission. Census data regarding population are those published by the INE (National Statistics Institute, as per the Spanish acronym) corresponding to 1 January 2010 and 1 July 2015.

River basin district		Area (km²)		Population (inhab.)			Neighbouring country
		Without coastal waters	With coastal waters	2010	2015	Change (%)	
Eastern Cantabrian	COR	5,812	6,391	1,923,251	1,905,791	-0.91	France
Western Cantabrian	COC	17,425	18,978	1,689,937	1,640,580	-2.92	---
Galicia-Coast	GAL	13,102	16,300	2,038,959	2,001,180	-1.85	---
Miño-Sil	MIÑ	17,567	17,588	849,150	812,013	-4.37	Portugal
Douro	DUE	78,886	78,886	2,249,000	2,167,755	-3.61	Portugal
Tagus	TAJ	55,784	55,784	7,836,702	7,759,222	-0.99	Portugal
Guadiana	GDN	55,498	55,560	1,471,660	1,441,451	-2.05	Portugal
Tinto, Odiel and Piedras	TOP	4,769	4,945	378,323	380,819	+0.66	---
Guadalquivir	GDQ	57,196	57,686	4,343,323	4,332,341	-0.25	---
Guadalete and Barbate	GYB	5,964	6,499	900,756	908,812	+0.89	---
Andalusian Med. Basins	CMA	17,952	20,019	2,687,693	2,713,922	+0.98	United Kingdom
Segura	SEG	19,033	20,242	2,000,619	1,982,981	-0.88	---
Jucar	JUC	42,737	44,871	5,144,810	4,971,637	-3.37	---
Ebro	EBR	85,634	85,942	3,232,655	3,187,014	-1.41	France / Andorra
Catalonia	CAT	16,441	18,041	6,893,012	6,792,519	-1.46	France
Balearic Islands	BAL	4,990	8,731	1,106,049	1,129,216	+2.09	---
Melilla	MEL	14	24	76,034	84,851	+11.60	Morocco
Ceuta	CEU	20	60	80,579	84,498	+4.86	Morocco
Lanzarote	LAN	845	2,118	139,925	142,134	+1.58	---
Fuerteventura	FUE	1,653	2,894	101,753	103,360	+1.58	---
Gran Canaria	GCA	1,575	2,111	848,927	862,334	+1.58	---
Tenerife	TEN	2,038	2,837	905,901	897,722	-0.90	---
La Gomera	GOM	368	530	22,717	22,512	-0.90	---
La Palma	LPA	707	981	86,345	85,865	-0.56	---
El Hierro	HIE	268	529	12,952	12,835	-0.90	---
TOTAL		506,278	528,547	47,021,032	46,423,364	-1.27	

Table 12. Some basic data describing river basin districts

4.2

Characterisation of water bodies

Water bodies are a separate and significant portion of surface water or a clearly separate volume of water in an aquifer, which constitutes the basic analysis unit when studying the achievement of environmental objectives.

New plans maintain, as a general rule, the water body diagram created for first cycle plans. In some cases, some changes in their delimitation and characterisation have been introduced; such changes are shown in the data stated below.

4.2.1. Surface water bodies

Table 13 shows the number of surface water bodies, classified by category and river basin district, for each one of the planning cycles. As can be seen, after reviewing the plans, some specific amendments have been introduced, but the differences are not at all relevant.

RBD	Surface water bodies								Total surface water bodies	
	Rivers		Lakes		Transitional		Coastal			
	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle
COR	109	117	11	3	14	14	4	4	138	138
COC	250	250	7	7	21	21	15	15	293	293
GAL	411	415	0	0	22	22	29	29	462	466
MIÑ	270	272	3	3	4	2	1	2	278	279
DUE	696	690	14	19	0	0	0	0	710	709
TAJ	308	307	16	16	0	0	0	0	324	323
GDN	249	251	58	59	4	4	2	2	313	316
TOP	48	47	5	6	11	11	4	4	68	68
GDQ	392	395	35	35	13	13	3	3	443	446
GYB	65	65	10	10	10	10	12	12	97	97
CMA	133	133	8	10	7	7	27	27	175	177
SEG	90	90	6	6	1	1	17	17	114	114
JUC	304	304	19	19	4	4	22	22	349	349
EBR	700	698	110	106	8	16	3	3	821	823
CAT	261	261	27	27	25	25	33	33	346	346
BAL	94	94	0	0	36	36	42	41	172	171
MEL	1	1	0	0	0	0	3	3	4	4
CEU	0	0	0	0	0	0	3	3	3	3
LAN (*)	0	0	0	0	0	0	6	6	6	6
FUE (*)	0	0	0	0	0	0	5	6	5	6
GCA (*)	0	0	0	0	0	0	6	8	6	8
TEN (*)	0	0	0	0	0	0	11	8	11	8
GOM (*)	0	0	0	0	0	0	4	4	4	4
LPA (*)	0	0	0	0	0	0	5	5	5	5
HIE (*)	0	0	0	0	0	0	3	3	3	3
TOTAL	4,381	4,390	329	326	180	186	260	260	5,150	5,162

Table 13. Inventory of surface water bodies. Comparison between the first and the second planning cycle.

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

Basically, the same river network is maintained, as well as the same number of lakes and wet areas identified as water bodies in the first cycle planning. The small variations registered arise from the collection of more accurate information, which consequentially gave rise to certain changes in the characterization of these water bodies, for example, falling into different categories. Amendments can also be found due to the specific fragmentation of a certain water body, which was considered as a single water body in the first cycle and now, for the second cycle, is divided into several water bodies. Likewise, for this review, in some specific cases, some adjustments regarding the geometry of water bodies have been made.

Map 2. Surface water bodies classified by category.

Out of the total of surface water bodies, 85.0% corresponds to the river category and just 6.3% to the lake category. Coastal water bodies represent 5.0% and transitional water bodies 3.6%. A similar calculation for the 127,000 water bodies established in the EU (first cycle plans) indicates that 82% are rivers, 15% are lakes and 3% are coastal and transitional water bodies.

The review of the characterisation implemented by means of second cycle plans involves the study of the delimitation of water bodies and their classification into the relevant category (rivers, lakes, transitional and coastal water bodies), the final designation of artificial or heavily modified water bodies and the update of their typology, in a way that enables the direct application of the general standards as criteria for the assessment of their status or ecological potential and their chemical status.

RBD	Number of Surface water bodies					
	Natural		Heavily modified		Artificial	
	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle
COR	101	102	35	34	2	2
COC	258	258	33	33	2	2
GAL	422	428	40	38	0	0
MIÑ	227	209	49	68	2	2
DUE	620	488	82	213	8	8
TAJ	198	198	116	115	10	10
GDN	244	240	56	62	13	14
TOP	51	51	16	16	1	1
GDQ	325	326	116	118	2	2
GYB	67	67	28	28	2	2
CMA	130	130	43	43	2	4
SEG	84	84	27	27	3	3
JUC	289	289	56	56	4	4
EBR	705	694	109	122	7	7
CAT	268	268	78	78	0	0
BAL	158	157	14	14	0	0
MEL	2	2	2	2	0	0
CEU	2	2	1	1	0	0
LAN (*)	5	5	1	1	0	0
FUE (*)	5	5	0	1	0	0
GCA (*)	5	6	1	2	0	0
TEN (*)	8	6	3	2	0	0
GOM (*)	4	4	0	0	0	0
LPA (*)	5	5	0	0	0	0
HIE (*)	3	3	0	0	0	0
TOTAL	4,186	4,027	906	1,074	58	61

Table 14. Natural, heavily modified and artificial surface water bodies. Comparison between planning cycles.

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

Table 14 shows and compares the number of natural, heavily modified and artificial surface water bodies between both planning cycles. By virtue of Article 8.2 of the RPH, the qualification of surface water bodies, both the artificial and the heavily modified ones, must be reviewed in each update of the River Basin Management Plan. As a result of this review, there was an increase in the number of water bodies classified as heavily modified in some river basin districts; such an increase is particularly relevant in the Douro and Miño-Sil river basin districts and, to a lesser extent, in the Ebro and Guadiana river basin districts. All plans include an addendum in the Dossier, containing explanations on the designation process of water bodies as heavily modified and artificial (justification of the exemption under Article 4.3 of the WFD). Therefore, out of the total surface water bodies (5,162), 78% is classified as natural, 21% as heavily modified and 1% as artificial. It must be remembered that, according to the provisions of Article 4.3 of the WFD, certain water bodies may be designated as artificial or heavily modified when hydromorphological changes, which would have to be introduced on them so as to achieve the environmental objectives, do not compensate the benefit of achieving said objectives.

The national typologies in which the different water bodies are classified are stated in river basin management plans. Their geographical layout in the case with rivers (except reservoirs) is the one shown in Map 4 and it is described in addendum 2, where a final table analysing the problematic correlation between national typologies and common typologies of the Decision of the Commission 2013/480/EU is included, in accordance with the analysis carried out in CEDEX (2016).

The average length of the water bodies of the river category (natural) in Spain is 20.7 km. River basins with the largest bodies are the ones corresponding to the Guadiana (34.6 km) and Tagus (32.9 km) whereas the Cantabrian river basins are the ones with the smallest water bodies: Eastern Cantabrian (14.4 km) and Western Cantabrian (15.4 km). In the case with heavily modified rivers (with the exception of reservoirs), the average length is similar (20.9 km), even though the size difference is higher, up to averages of 68.8 km in the Guadiana river basin district and 55.2 km in the Ebro river basin district. The existence of 425 water bodies classified as heavily modified rivers (reservoirs), with an average length lower than 8 km, is identified. The European average is 11 km (CE, 2012a).

Water bodies within the lake category are small, with an average surface of 3.7 km^2, which corresponds to a circle with a radius of one thousand metres. However, the average size in the Guadalquivir is 25.7 km^2 and in the other river basins it is clearly lower. The average value in the EU amounts to 5 km^2.

For transitional water bodies, a heterogeneous size is recognised. Area average is 5.4 km^2, even though in the case with the Segura basin it reaches an average value of 25.2 km^2. The average for the EU amounts to 19 km^2.

Map 3. Surface water bodies classified according to their nature.

Map 4. Geographical distribution of the river types.

Key of the map documented in addendum 2. Water bodies category river (except reservoirs).

Finally, in the case with coastal water bodies, the range is narrower in relation to an average area amounting to 89.2 km². In this context, the river basin district with the smallest coastal water bodies if the Miño-Sil district (10.4 km²), in clear contrast with the 110 km² for the water bodies of Galicia-Coast or the 165 km² for the coastal water of the Guadalquivir river basin district. The average area in the EU for coastal water bodies amounts to 644 km².

The case with transboundary water bodies must be highlighted. This is the case when our plans refer to the Spanish territory of international river basin districts; in particular the ones shared between Spain and Portugal in the scopes of the Miño-Sil, Douro, Tagus and Guadiana river basin districts. These cases include several transboundary water bodies, the regulation of which is not governed by the river basin management plans since they are subject to the relevant international agreements, in accordance with the additional provision nº one of RD 1/2016, approving, among other things, the river basin management plans of the Spanish territory of the river basin districts shared with Portugal.

4.2.2. Groundwater Bodies

Regarding groundwater bodies (Table 15), with the exception of the river basins of the Guadalquivir, Eastern Cantabrian, the river basin district of Catalonia, river basin district of the Balearic Islands and the river basin district of Lanzarote, there were no changes regarding the territorial division set out in first cycle plans, established as a result of intensive characterisation works carried out with the Geology and Mining Institute of Spain (IGME).

However, in the case with the Guadalquivir river basin district, a new hydrogeological characterisation of its territory has been carried out based on recent studies conducted in collaboration with the IGME. This characterisation, which turned out to be more detailed, could not be included in the first cycle River Basin Management Plan. As a consequence, that district went from 60 to 86 groundwater bodies, basically due to the division of the former water bodies into new ones, with a new definition and limit adjustment.

In the other aforementioned cases, there was a grouping of certain water bodies which were considered independent in the first planning cycle; moreover, as a result of the new characterisation data and monitoring of their status, it was deemed appropriate to group such water bodies for second cycle plans.

River basin district	1st cycle	2nd cycle	
	N° of GWB	N° of GWB	Average area (km²)
Eastern Cantabrian	28	20	286
Western Cantabrian	20	20	694
Galicia-Coast	18	18	722
Miño-Sil	6	6	2,930
Douro	64	64	1,365
Tagus	24	24	910
Guadiana	20	20	1,124
Tinto, Odiel and Piedras	4	4	378
Guadalquivir	60	86	394
Guadalete and Barbate	14	14	305
Andalusian Mediterranean Basins	67	67	155
Segura	63	63	242
Jucar	90	90	450
Ebro	105	105	521
Catalonia	39	37	294
Balearic Islands	90	87	55
Melilla	3	3	5
Ceuta	1	1	11
Lanzarote (*)	1	2	65
Fuerteventura (*)	4	4	413
Gran Canaria (*)	10	10	156
Tenerife (*)	4	4	508
La Gomera (*)	5	5	74
La Palma (*)	5	5	142
El Hierro (*)	3	3	90
TOTAL	748	762	479

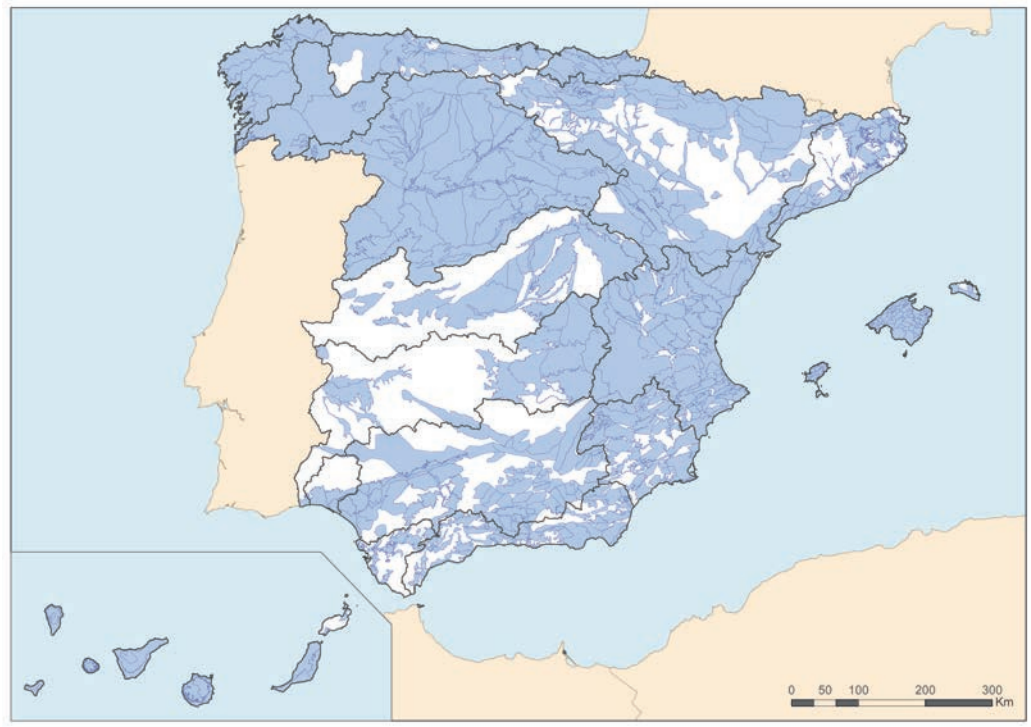
Table 15. Groundwater Bodies. Comparison between planning cycles.

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

The average area of groundwater bodies amounts to 479 km². However, in some river basins this average area is clearly higher (Miño-Sil, Douro, Guadiana or Tagus) whereas in others, as in the case with the southern and eastern Spanish river basins, it is much lower. The case with the district of the Balearic Islands is particularly noteworthy, 87 groundwater bodies with an average area of just 54.5 km².

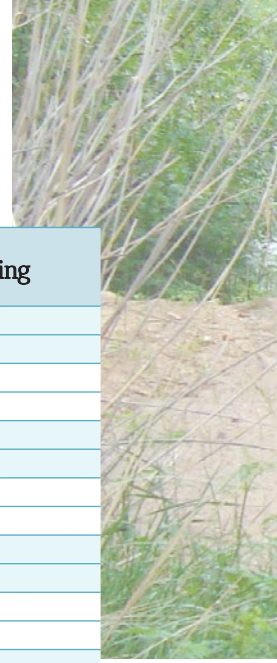
In the EU, 13,300 groundwater bodies have been defined. Their average area comes up to approximately 300 km² within a greatly spread general framework.

The delimitation of the boundaries corresponding to the groundwater of each river basin district falls within the limits of the relevant river basin district. Therefore, strictly speaking, there are no shared groundwater bodies. However, the physical reality of aquifers makes it possible for water bodies located in adjacent district to be hydrogeologically connected. Each river basin district has carried out the relevant resource allocation corresponding to its scope under the provisions of the National Hydrological Plan (Addendum I. List of Hydrogeologically Shared Units). As a consequence of this physical reality, and by virtue of the provisions of Article 9.2 of the RPH, the new river basin management plans propose the additional consideration of other groundwater bodies with shared resources for its future study and allocation of resources by the National Hydrological Plan, in its subsequent review. Proposals included in the plans are the ones shown in Table 16.



Map 5. Location of groundwater bodies.

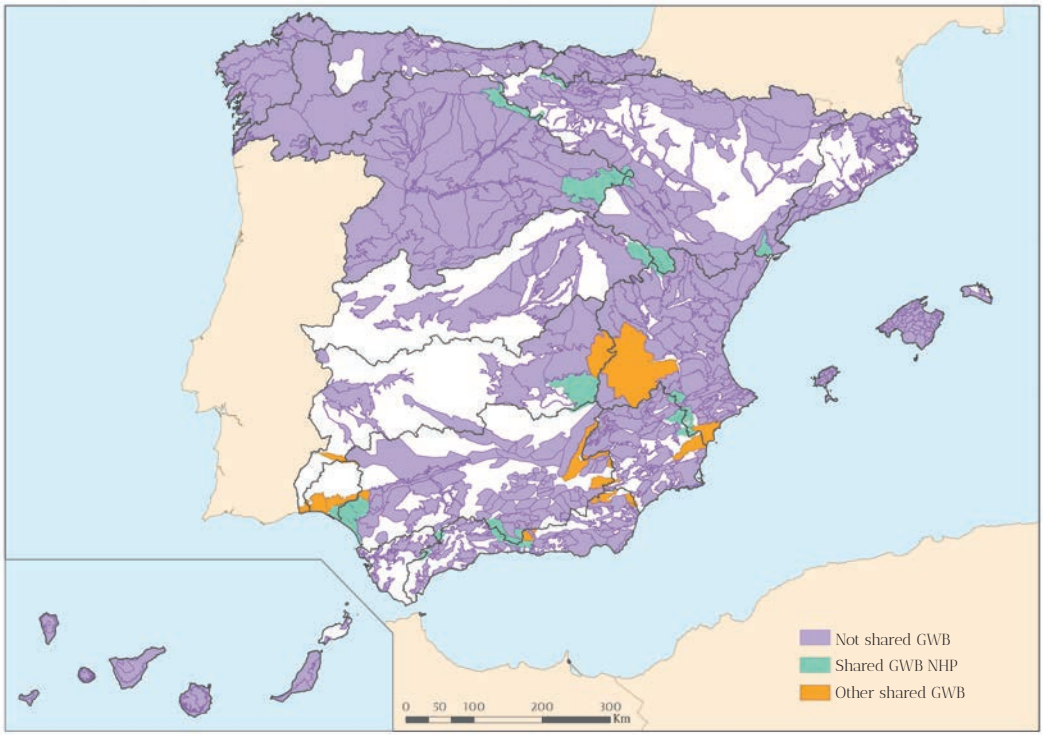
Hydrogeological unit (Addendum 1. National Hydrological Plan)	Groundwater Bodies (2nd cycle Plans)	Districts sharing
La Bureba	Quintanilla-Peñahorada	DUE (*)
	Bureba	EBR
Araviana-Vozmediano	Moncayo	DUE (*)
	Araviana-Vozmediano	EBR
Almazán-Aranda de Moncayo	Araviana and Cuenca de Almazán	DUE (*)
	Borobia-Aranda de Moncayo	EBR
Cella-Molina de Aragón	Molina de Aragón	TAJ
	Gea de Albarracín	JUC (*)
	Pozondón and Cella-Ojos de Monreal	EBR
Campo de Montiel	Campo de Montiel	GDN (*)
	Campo de Montiel	GDQ (*)
	---	JUC (**)
Almonte-Marismas	Almonte, Manto Eólico Litoral de Doñana and La Rocina	GDQ (*)
	Condado	TOP
Sierra de Líbar	Sierra de Líbar	GYB
	Sierra de Líbar	CMA (*)
Sierra de Cañete	Sierra de Cañete-Corbones	GDQ (*)
	Sierra de Cañete Sur	CMA (*)



Hydrogeological unit (Addendum 1. National Hydrological Plan)	Groundwater Bodies (2nd cycle Plans)	Districts sharing
Sierra Gorda-Polje de Zafarraya	Sierra Gorda-Zafarraya	GDQ (*)
	Sierra Gorda-Zafarraya	CMA (*)
Tejeda-Almijara-Las Guájaras	Tejeda-Almijara-Las Guájaras	GDQ (*)
	Sierra Tejeda, Sierra Almijara and Sierra de las Guájaras	CMA (*)
Not classified in the NHP	Sierra de Padul Sur	CMA (*)
	Tejeda-Almijara-Las Guájaras	GDQ
Not classified in the NHP	Sierra de Albuñuelas	CMA (*)
	Tejeda-Almijara-Las Guájaras	GDQ
Sierra de la Oliva	Sierra de la Oliva	SEG (*)
	Sierra de la Oliva	JUC (*)
Jumilla-Villena	Jumilla-Yecla	SEG (*)
	Sierra de Castellar	JUC (*)
Salinas	Serral-Salinas	SEG (*)
	Sierra de Salinas	JUC (*)
Quibas	Quibas	SEG (*)
	Sierra del Reclot and Sierra de Argallet	JUC (*)
Sierra de Crevillente	Sierra de Crevillente	SEG (*)
	Sierra de Crevillente	JUC (*)
Bajo Ebro-Montsiá	Plana de la Galera, Mesozoico de la Galera and Sierra del Montsiá	EBR
	---	CAT
Losa	Calizas de Losa	EBR
	Salvada	COR (*)
Not classified in the NHP	Ayamonte	GDN (*)
	Lepe-Cartaya	TOP (**)
Not classified in the NHP	Aroche-Jabugo	GDN (*)
	Aracena	TOP (**)
Not classified in the NHP	Rus-Valdelobos	GDN (*)
	Mancha Oriental	JUC (**)
Not classified in the NHP	Quesada-Castril	GDQ (*)
	Calar del Mundo y Machada	SEG (*)
Not classified in the NHP	La Zarza	GDQ (*)
	Sierra de la Zarza	SEG (*)
Not classified in the NHP	Orce-María-Cúllar	GDQ (*)
	Vélez Blanco-María	SEG (*)
Not classified in the NHP	Campo de Tejada	GDQ (*)
	Niebla and Condado	TOP (**)
Not classified in the NHP	Vega Media y Baja del Segura	SEG (*)
	Bajo Vinalopó	JUC (**)
Not classified in the NHP	Sierra de las Estancias	SEG (*)
	Sierra de las Estancias	CMA (*)
Not classified in the NHP	Las Norias	SEG (*)
	Cubeta de El Saltador	CMA (**)
Not classified in the NHP	Sierra de Almagro	SEG (*)
	Sierra de Almagro	CMA (**)

Table 16. Identification of groundwater bodies related to aquifers shared between several scopes of hydrological planning.

(*) Planning scope from which it is acknowledged or proposed the hydrogeological continuity.
(**) Scope referred to in a River Basin Management Plan other than the Plan of the scope being mentioned.



Map 6. Groundwater bodies shared between several scopes of hydrological planning.

Therefore, this information must be taken into account when dealing with the next review of the National Hydrological Plan, the mandatory contents of which (Article 67 of the Regulation of Hydrological Planning) include the delimitation and characterisation of water bodies shared between two or more districts, including the allocation of resources to each one of them.

4.3

Inventory of resources

River basin management plans must include the inventory of water resources in natural regime which has been updated and is based on the inventory prepared for first cycle plans under the terms set forth in the RPH. In order to do this, the different River Basin Authorities had access to an estimation of natural resources by means of the conceptual and quasi-distributed SIMPA model (Estrela and Quintas, 1996; Álvarez, Sánchez and Quintas, 2004), prepared and updated by the Centre for Hydrographic Studies of the CEDEX.

The six-year update carried out by the Centre for Hydrographic Studies (from 2006/07 to 2011/12) has provided a long-term data series corresponding to the period 1940/41–2011/12, and a short-term data series, corresponding to the period 1980/81–2011/12. The inventory of resources of second cycle river management

plans has been prepared based on such information and in some cases, by incorporating additional works carried out by the different river basin authorities.

Table 17 compares the total average annual contributions, under the natural regime, obtained for each river basin district during the first planning cycle (until 2005/06), to the ones included in the new second cycle river basin management plans (until 2011/12), both as regards the long-term series and the short-term series.

At a global level, the six-year data period, now integrated in a general manner, shows very varied characteristics: from extremely wet years (2009/2010) to extremely dry years (2011/2012), including not so extreme years but quite wet ones (2006/2007 and 2010/2011) or quite dry ones (2007/2008 and 2008/2009). The overall picture of the six-year period does not deviate significantly from average values, although there are remarkable deviations at a local level.

Only in the Guadalquivir river basin district a remarkable change in figures can be found. In any case, it must be understood that this is the most accurate and recent information available and that new plans include an inventory of natural resources which has been duly confirmed and verified. It must be taken into account that average values do not express spatial and temporary

RBD	Series Origin	1st cycle (until 2005/06) (hm³/year)	2nd cycle (until 2011/12) (hm³/year)	Change (%)
COR	Short-term series (from 1980/81)	4,659	4,458 (*)	-4.31
COC	Short-term series (from 1980/81)	11,763	11,848 (*)	+0.72
	Long-term series (from 1940/41)	12,697	12,734 (*)	+0.29
GAL	Short-term series (from 1980/81)	11,532	12,718	+10.28
	Long-term series (from 1940/41)	12,354	13,102	+6.05
MIÑ	Short-term series (from 1980/81)	11,810	11,821 (**)	+0.09
	Long-term series (from 1940/41)	13,122	13,036 (**)	-0.66
DUE	Short-term series (from 1980/81)	12,385	12,777	+3.17
	Long-term series (from 1940/41)	13,778	14,231	+3.29
TAJ	Short-term series (from 1980/81)	8,273	8,222	-0.62
	Long-term series (from 1940/41)	10,210	9,808	-3.93
GDN	Short-term series (from 1980/81)	4,756	4,999	+5.11
	Long-term series (from 1940/41)	5,757	5,778	+0.36
TOP	Short-term series (from 1980/81)	623	658	+5.62
	Long-term series (from 1940/41)	697	706	+1.29
GDQ	Short-term series (from 1980/81)	5,754	7,092	+23.25
	Long-term series (from 1940/41)	7,043	8,260	+17.28
GYB	Short-term series (from 1980/81)	753	769	+2.12
	Long-term series (from 1940/41)	874	871	-0.34
CMA	Short-term series (from 1980/81)	2,703	2,819	+4.29
	Long-term series (from 1940/41)	3,026	3,027	+0.03
SEG (***)	Short-term series (from 1980/81)	704	740	+5.11
	Long-term series (from 1940/41)	848	824	-2.83
JUC (***)	Short-term series (from 1980/81)	3,056	3,111	+1.79
	Long-term series (from 1940/41)	3,278	3,337	+1.80
EBR	Short-term series (from 1980/81)	14,623		---
	Long-term series (from 1940/41)	16,448		---
CAT	Short-term series (from 1980/81)	2,441		---
	Long-term series (from 1940/41)	2,613		---
BAL	Short-term series (from 1980/81)	144	161	+11.81
MEL	Series 2002/12	14		---
CEU	Series 2002/12	3		---
PENINSULAR TOTAL	Short-term Series	95,835	99,096	+3.40
	Long-term Series	107,404	109,233	+1.70

Table 17. Total contributions under the natural regime in the different river basin districts.

(*) The series used for the Cantabrian river basin districts in the second cycle plan cover until 2009/2010.

(**) Data corresponding to the Spanish territory of the river basin district.

(***) Values offered do not include natural discharges directly into the sea.

RBD	Renewable Resources (hm³/year)		Available Resources (hm³/year)	
	1st cycle	2nd cycle	1st cycle	2nd cycle
COR	1,782		1,508	
COC	4,217		3,328	
GAL	3,869	3,869	3,471	3,422
MIÑ	3,774	3,789	3,193	3,205
DUE	3,737	4,406	2,992	3,278
TAJ	1,795	3,101	1,078	1,859
GDN	569	569	564	564
TOP	66	96	48	70
GDQ	2,686	2,894	1,965	2,141
GYB	282	287	170	160
CMA	803	848	676	645
SEG	692	685	546	541
JUC	3,315	3,744	2,332	2,828
EBR	3,128		2,496	
CAT	1,930	1,722	1,141	1,093
TOTAL PENINSULAR	32,645	35,137	25,508	27,138

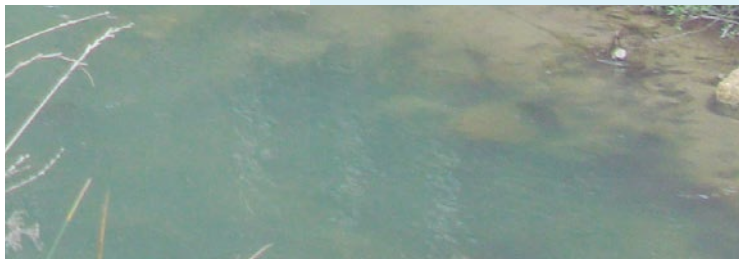
Table 18. Renewable and available resources (hm³/year) for all groundwater bodies within each district. Comparison between the first and the second planning cycle.

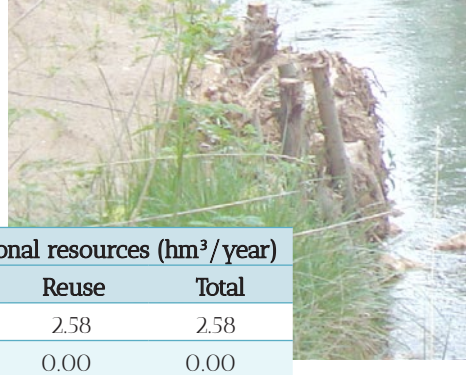
irregularity in the distribution of resources, characteristic of the Mediterranean climate.

Total amounts at the bottom of Table 17 slightly deviate from the ones offered by the WPW (Section 3.1.4.1.4), which estimates that total Spanish run-off under the natural regime amounts to 111,000 hm³/year as average value for the period 1940/41-1995/96. Such amount is 106,990 for territorial peninsular scopes included in this table, which is very similar to the current total amounts for the long-term series.

The short-term series offer remarkably lower values than the ones provided by the long-term series. Such reduction amounts to 12% in accordance with data offered by first cycle plans and 10% with the resource assessment offered by second cycle plans. This is a common phenomenon in the Spanish hydrology, meaning that such behaviour is not homogeneous; the most significant differences are the ones of the Tagus river basin (23.4% reduction corresponding to the first cycle assessment and 19.3% to the second cycle assessment) and in the river basins of the Guadalquivir (22.4% and 16.5%, respectively), Guadiana (21.1% and 15.6%) and Segura (20.5% and 11.4%). However, the narrowest differences are the ones in the northern river basins, both in the Cantabrian river basins and in the river basin district of Catalonia, with variations amounting approximately to a 7% reduction when comparing the short-term series to the long-term series.

Due to their key importance in the management of water resources and related ecosystems, plans also estimate the portion of such resources corresponding to underground run-off. Therefore, Table 18 shows the estimation of groundwater renewable resources and the quantification of resources available, in application of the contents and definitions established in the IPH.





In order to reinforce and verify the estimation of the underground run-off which is integrated within the total natural resources, the "Patrical" Model (Pérez, 2005), complementary to the aforementioned SIMPA model and developed by the Environmental and Water Engineering Institute of the Universidad Politécnica de Valencia has been used. The model adjusted with "Patrical" so all peninsular Spain can work with the same meteorological information on rainfall and temperature, as basic components of the water cycle, to that used by the SIMPA model; all such data are obtained from the State Meteorological Agency (www.aemet.es).

The estimation carried out led to the adjustment, generally upwards, of the subsurface run-off amounts included in the first planning cycle. The variation observed is generally small, except in the Tagus river basin. In this particular case, the variation calculated results from adopting the common assessment criteria for resources established in the IPH rather than due to an actual variation in the amount of underground run-off. In the case with Cantabrian river basins, the estimations calculated for the first planning cycle are valid, so the amounts corresponding to renewable and available resources of groundwater are the same than the ones included in current plans.

Total amounts shown in Table 18 can be compared to the average recharge value under the natural regime offered by the WPW (table 21, page 138) coming up to 28,719 hm^3/year. These data show that, in average, 35% of total natural resources in peninsular Spain (Table 17) have a major underground stretch, giving rise to renewable resources of groundwater bodies.

Additionally to these conventional natural resources, some river basin districts have non-conventional resources (Table 19), from sea desalination processes or

River basin district	Non-conventional resources (hm^3/year)		
	Desalination	Reuse	Total
Eastern Cantabrian	0.00	2.58	2.58
Western Cantabrian	0.00	0.00	0.00
Galicia-Coast	0.00	0.00	0.00
Miño-Sil	0.00	0.00	0.00
Douro	0.00	0.00	0.00
Tagus	0.00	10.00	10.00
Guadiana	0.00	2.01	2.01
Tinto, Odiel and Piedras	0.00	0.00	0.00
Guadalquivir	0.00	15.40	15.40
Guadalete and Barbate	0.00	9.84	9.84
Andalusian Mediterranean Basins	43.59	27.43	71.02
Segura	158.00	82.60	240.60
Jucar	3.50	121.49	124.99
Ebro	0.00	4.80	4.80
Catalonia	16.70	7.96	24.66
Balearic Islands	15.26	26.84	42.10
Melilla	7.40	0.96	8.36
Ceuta	7.30	4.40	11.70
Lanzarote (*)	19.30	0.65	19.95
Fuerteventura (*)	77.12	6.08	83.20
Gran Canaria (*)	77.91	12.70	90.61
Tenerife (*)	18.26	11.13	29.39
La Gomera (*)	0.01	0.74	0.75
La Palma (*)	0.00	0.00	0.00
El Hierro (*)	1.37	0.02	1.39
TOTAL	445.72	347.63	793.35

Table 19. Currently used non-conventional resources (2012-2015).

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

reuse of reclaimed waste-water, which allows for the incorporation of certain potential flows which, in some cases are or might grow to be significant. The river basin districts where the relative importance of these non-conventional resources, as shown in the new river basin management plans, is particularly relevant are: Segura, Canary Islands, Balearic Islands and Jucar, as well as, due to their geographic characteristics, the river basins districts of Ceuta and Melilla due to the production of desalinated water.

Data on non-conventional resources shown in Table 19 have been collected, when available, from the table summarising the analysis of the recovery of the water service costs included in the dossiers of the river basin management plans.

Natural resources assessed have been updated for a hypothetical long-term scenario which, for the purposes of these second cycle plans, is established in the year 2033. In order to do so, the reduction previsions for water contributions by district offered by the Spanish Office for Climate Change have been followed. These reductions range between 3% and 12% in relation to a control series, that is to say, to the series 1690/1961-1990/1991.

It is important to point out that these variations in the amount of resources due to the effects of the climate change fall within the levels of the variations stated at the beginning of this section. In particular, it must be highlighted the fact that the reduction in the estimation of natural resources available which involves the application of the short-term series instead of the long-term series, is generally higher than the reduction prevision shown in the models assessing the effects of the climate change on natural water resources.

4.4

Identification of significant pressures

The hydrological planning procedure, regarding the achievement of environmental objectives, is based on adjusting a model, at least a conceptual one and, whenever possible, numerical, which explains how human activities negatively affecting the status of waters influence the gap between the average actual state of water bodies and the environmental objective established. Therefore, the pressure or impact analysis, which must be carried out before the review of river basin management plans, is essential. This analysis is particularly important so as to properly prepare monitoring programs, design the appropriate programmes of measures to reduce such gap and, based on its efficiency, calculate the term and achievement characteristics of environmental objectives.

River basin management plans must compulsory include a summary of said inventory of significant pressures, that is to say, those actions which negatively affect the status of water bodies, causing impact. Once the nature of these pressures is known, the appropriate type of measures will be designed and applied accordingly.

For new second cycle river basin management plans, an update of the previously existent inventory of pressures has been carried out. In order to complete this work, the inventory of pressures corresponding to first cycle river basin management plans was used while adding the new significant pressures obtained from data existing in each river basin authority, since each River Basin Authority registers and processes the authorisation of the different actions that may influence the environment (discharges, exploitations, permits for dams and reservoirs, works, occupation of water public domain, aggregate abstractions, etc.). Additionally, information has been collected from other entities, such as, for example, the competent authorities in coastal and transitional waters. Also included are the temporary series on nitrogen balances used for agriculture and livestock farming by municipality, particularly to assess the effects of diffuse pollution on groundwater bodies.

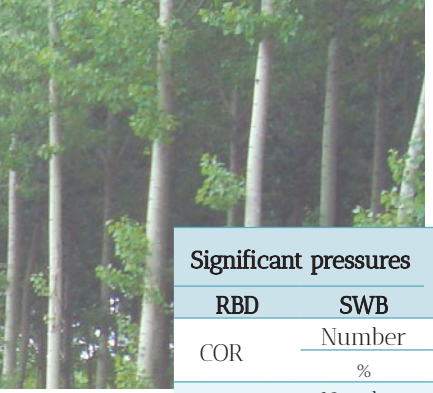
With the purpose of ensuring that this information is consistent with that subsequently submitted to the European Commission and for the purposes of systematise the inventory of pressures, criteria established in the Reporting Guide for 2016 (EC, 2016) have been followed. This Guide includes a classification of pressures into types and subtypes, which are grouped as shown in the tables below for the purposes of summarising them. In particular, the following types of pressures are included: point source pressures, diffuse source pressures, water abstractions, other hydromorphological alterations and other pressures.

Table 20, which indicates the number and percentage of surface water bodies affected by the different pressure groups within each river basin district, compares the inventory of pressures corresponding to first cycle plans and the one established for second cycle plans, revealing a significant development progress of such works.

Hydromorphological pressures are the ones affecting a higher number of water bodies (55%), followed by pollution pressures whether corresponding to point source (44%) or diffuse source pressures (43%). Pressures due to water abstractions affect 30% of surface water bodies.

The apparent strong increase in the number of surface water bodies impacted by significant pressures is basically due to the fact that second cycle plans offer a more detailed and better design inventory of pressures than the one prepared for first cycle plans, rather than to the fact that there might have been an increase in the number or type of pressures over the water environments, which is how it may be interpreted based on the information provided by new second cycle plans.

In the case with groundwater bodies, Table 21 offers similar information to that previously offered for surface water bodies. In this case, it is obvious that data corresponding to first cycle plans were not treated in a systematic way that enabled their proper documentation, which is something that has noticeably improved in the new plans. Diffuse source pollution is pressure affecting the highest number of groundwater bodies (56%), followed by pressure due to water abstractions (36%) and pollution pressure corresponding to point source (33%).



Significant pressures		Point source		Diffuse		Abstractions		Hydromorphological alterations		Others	
RBD	SWB	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle
COR	Number	75	64	33	9	74	15	89	30	59	3
	%	54%	46%	24%	7%	54%	11%	64%	22%	43%	2%
COC	Number	177	175	17	16	189	154	198	193	175	12
	%	60%	60%	6%	5%	65%	53%	68%	66%	60%	4%
GAL	Number	178	69	181	109	3	0	54	29	277	9
	%	61%	24%	62%	37%	1%	0%	18%	10%	95%	3%
MIÑ	Number	58	154	34	235	49	229	47	216	30	180
	%	21%	55%	12%	84%	18%	82%	17%	77%	11%	65%
DUE	Number	264	463	92	284	74	126	439	555	1	125
	%	37%	65%	13%	40%	10%	18%	62%	78%	0%	18%
TAJ	Number	67	216	18	96	45	141	20	132	0	61
	%	21%	67%	6%	30%	14%	44%	6%	41%	0%	19%
GDN	Number	136	150	23	49	166	167	113	169	68	292
	%	43%	47%	7%	16%	53%	53%	36%	53%	22%	92%
TOP	Number	22	25	25	40	17	20	26	31	10	3
	%	32%	37%	37%	59%	25%	29%	38%	46%	15%	4%
GDQ	Number	163	207	78	433	147	346	84	368	29	122
	%	37%	46%	18%	97%	33%	78%	19%	83%	7%	27%
GYB	Number	22	35	25	51	17	27	26	36	10	6
	%	23%	36%	26%	53%	18%	28%	27%	37%	10%	6%
CMA	Number	119	35	87	23	86	32	32	16	11	24
	%	68%	20%	50%	13%	49%	18%	18%	9%	6%	14%
SEG	Number	38	63	73	97	40	24	34	65	42	35
	%	33%	55%	64%	85%	35%	21%	30%	57%	37%	31%
JUC	Number	122	224	201	222	78	72	140	292	145	168
	%	35%	64%	58%	64%	22%	21%	40%	84%	42%	48%
EBR	Number	147	72	155	256	39	80	120	334	1	144
	%	18%	9%	19%	31%	5%	10%	15%	41%	0%	17%
CAT	Number	159	265	117	235	62	96	109	304	185	338
	%	46%	77%	34%	68%	18%	28%	32%	88%	53%	98%
BAL	Number	18	40	32	55	9	14	11	24	13	29
	%	10%	23%	19%	32%	5%	8%	6%	14%	8%	17%
MEL	Number	2	2	0	3	0	1	2	2	0	0
	%	50%	50%	0%	75%	0%	25%	50%	50%	0%	0%
CEU	Number	--	1	--	2	--	1	--	3	--	0
	%	--	33%	--	67%	--	33%	--	100%	--	0%
CAN	Number	--	20	--	16	--	15	--	30	--	0
	%	--	50%	--	40%	--	38%	--	75%	--	0%
TOTAL	Number	1,767	2,280	1,191	2,231	1,095	1,560	1,544	2,829	1,056	1,551
	%	34%	44%	23%	43%	21%	30%	30%	55%	21%	30%

Table 20. Number of surface water bodies affected by the main types of significant pressures corresponding to both planning cycles.

(*) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

Significant pressures		Point Source		Diffuse		Abstractions		Hydrological alterations		Others	
RBD	GWB	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle
COR	Number	3	2	0	0	0	0	0	0	0	0
	%	11%	10%	0%	0%	0%	0%	0%	0%	0%	0%
COC	Number	20	17	20	0	20	18	0	0	0	0
	%	100%	85%	100%	0%	100%	90%	0%	0%	0%	0%
GAL	Number	--	0	--	0	--	0	--	0	--	1
	%	--	0%	--	0%	--	0%	--	0%	--	6%
MIÑ	Number	1	6	0	6	1	6	0	0	0	0
	%	17%	100%	0%	100%	17%	100%	0%	0%	0%	0%
DUE	Number	--	0	--	35	--	8	--	0	--	0
	%	--	0%	--	55%	--	13%	--	0%	--	0%
TAJ	Number	--	0	--	6	--	0	--	0	--	0
	%	--	0%	--	25%	--	0%	--	0%	--	0%
GDN	Number	20	0	20	20	20	20	0	0	--	20
	%	100%	0%	100%	100%	100%	100%	0%	0%	--	100%
TOP	Number	--	0	--	3	--	0	--	0	--	0
	%	--	0%	--	75%	--	0%	--	0%	--	0%
GDQ	Number	--	72	--	67	--	27	--	0	--	0
	%	--	84%	--	78%	--	31%	--	0%	--	0%
GYB	Number	--	0	--	9	--	3	--	0	--	0
	%	--	0%	--	64%	--	21%	--	0%	--	0%
CMA	Number	--	2	--	24	--	25	--	0	--	12
	%	--	3%	--	36%	--	37%	--	0%	--	18%
SEG	Number	--	1	--	36	--	40	--	0	--	3
	%	--	2%	--	57%	--	63%	--	0%	--	5%
JUC	Number	20	24	27	28	32	33	0	12	--	4
	%	22%	27%	30%	31%	36%	37%	0%	13%	0%	4%
EBR	Number	--	0	--	71	--	0	--	0	--	0
	%	--	0%	--	68%	--	0%	--	0%	--	0%
CAT	Number	--	37	--	37	--	31	--	19	--	0
	%	--	100%	--	100%	--	84%	--	51%	--	0%
BAL	Number	--	75	--	67	--	47	--	0	--	0
	%	--	86%	--	77%	--	54%	--	0%	--	0%
MEL	Number	--	3	--	3	--	3	--	0	--	0
	%	--	100%	--	100%	--	100%	--	0%	--	0%
CEU	Number	--	0	--	1	--	0	--	0	--	0
	%	--	0%	--	100%	--	0%	--	0%	--	0%
CAN (*)	Number	--	16	--	17	--	12	--	0	--	8
	%	--	48%	--	52%	--	36%	--	0%	--	24%
TOTAL	Number	--	255	--	430	--	273	--	31	--	48
	%	--	33%	--	56%	--	36%	--	4%	--	6%

Table 21. Number of groundwater bodies affected by the main types of significant pressures corresponding both planning cycles.

(*) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

As in the case with many other topics dealt with in the plans, the progress made is relevant in several river basin districts, but it is also evident that an ongoing progress, carried out in a systematic manner, is required in this type of works, particularly some river basin districts which are starting to have difficulties implementing contents which, as stated above, must be developed before the commencement of the review cycle and, therefore, will have to be redesigned so as to the tackle third cycle after submitting second cycle plans to the European Union.

4.5

Uses and demands

River basin management plans describe water uses and existing demands under the terms set out in the RPH. In order to this, plans include a detailed analysis of water demands to meet different uses corresponding to each one of the planning horizons set forth in the relevant regulations.

Such task was carried out by grouping exploitations collecting the resource in the same area and discharging or producing impacts in a more or less joint manner, into demand units. Said demand units refer to different uses; therefore, they generally fall into three categories: urban demand units (UDU), agricultural demand units (ADU) or industrial demand units (IDU). Plans describe each one of these units in accordance with the requirements set out in the IPH or equivalent regulations adopted by Autonomous Communities with intra-community river basins by assessing their water needs and the ones which are foreseeable within the different time horizons set forth in the new river basin management plans, in particular, for horizon 2021, the year to which the allocation and reservation of resources established in these second cycle river basin management plans refers.

Table 22 shows the estimation of said demand for the main consumptive uses. Data corresponding to the current situation refer generally to year 2012, but they may very slightly depending on the case. Data corresponding to horizon 2021 are the ones estimated by each one of the river basin management plans in accordance with the evolution forecasts for the demands they study. This table does not include other water uses which are generally less important from a quantitative point of view or other uses which are barely or not at all consumptive, such as aquaculture or hydroelectric generation.

River Basin District	Horizon	Demands included in river basin management plans (hm³/year)			
		Urban use	Agricultural use	Industrial use	TOTAL
Eastern Cantabrian	RBMP preparation year	233.87	2.84	35.61	272.32
	2021	227.33	2.71	35.61	265.65
	Change (%)	-2.8	-4.6	+0.0	-2.4
Western Cantabrian	RBMP preparation year	256.02	74.67	128.06	458.75
	2021	264.68	73.37	128.06	466.11
	Change (%)	+3.4	-1.7	+0.0	+1.6
Galicia-Coast	RBMP preparation year	225.76	31.19	90.09	347.04
	2021	219.75	30.38	90.09	340.22
	Change (%)	-2.7	-2.6	+0.0	-2.0
Miño-Sil	RBMP preparation year	97.99	319.71	17.28	434.98
	2021	92.54	306.92	20.47	419.93
	Change (%)	-5.6	-4.0	+18.5	-3.5
Douro	RBMP preparation year	287.10	3,425.47	45.78	3,758.35
	2021	263.38	3,484.68	45.78	3,793.84
	Change (%)	-8.3	+1.7	+0.0	+0.9
Tagus	RBMP preparation year	741.32	1,929.37	42.54	2,713.23
	2021	864.38	1,973.45	60.64	2,898.47
	Change (%)	+16.6	+2.3	+42.6	+6.8
Guadiana	RBMP preparation year	166.08	1,915.77	48.60	2,130.45
	2021	166.65	2,019.39	82.30	2,268.34
	Change (%)	+0.3	+5.4	+69.3	+6.5
Tinto, Odiel and Piedras	RBMP preparation year	49.42	171.28	41.72	262.42
	2021	55.99	359.19	50.44	465.62
	Change (%)	+13.3	+109.7	+20.9	+77.4
Guadalquivir	RBMP preparation year	379.45	3,356.77	43.40	3,779.62
	2021	400.00	3,327.84	43.40	3,771.24
	Change (%)	+5.4	-0.9	+0.0	-0.2
Guadalete and Barbate	RBMP preparation year	107.94	306.87	17.20	432.01
	2021	117.33	287.85	12.06	417.24
	Change (%)	+8.7	-6.2	-29.9	-3.4
Andalusian Mediterranean Basins	RBMP preparation year	344.85	977.05	28.80	1,350.70
	2021	367.07	926.17	28.80	1,322.04
	Change (%)	+6.4	-5.2	+0.0	-2.1
Segura	RBMP preparation year	185.50	1,487.10	9.00	1,681.60
	2021	194.30	1,487.10	9.50	1,690.90
	Change (%)	+4.7	+0.0	+5.6	+0.6
Jucar	RBMP preparation year	524.70	2,580.66	123.37	3,228.73
	2021	482.31	2,384.79	153.49	3,020.59
	Change (%)	-8.1	-7.6	+24.4	-6.4

Table 22. Water demands for each river basin district.

River Basin District	Horizon	Demands included in river basin management plans (hm³/year)			
		Urban use	Agricultural use	Industrial use	TOTAL
Ebro	RBMP preparation year	358.90	7,680.66	147.30	8,186.86
	2021	382.20	8,379.25	216.95	8,978.40
	Change (%)	+6.5	+9.1	+47.3	+9.7
Catalonia	RBMP preparation year	571.60	378.80	96.00	1,046.40
	2021	530.50	377.30	100.00	1,007.80
	Change (%)	-7.2	-0.4	+4.2	-3.7
Balearic Islands	RBMP preparation year	164.03	68.53	2.72	235.28
	2021	138.54	103.32	2.72	244.58
	Change (%)	-15.5	+50.8	+0.0	+4.0
Melilla	RBMP preparation year	7.47	0.00	3.05	10.52
	2021	7.70	0.00	3.15	10.85
	Change (%)	+3.1	--	+3.3	+3.1
Ceuta	RBMP preparation year	7.30	0.00	1.30	8.60
	2021	7.55	0.00	1.35	8.90
	Change (%)	+3.4	--	+3.8	+3.5
Canary Islands	RBMP preparation year	209.61	232.52	12.68	454.81
	2021	204.68	226.14	12.67	443.48
	Change (%)	-2.4	-2.7	-0.1	-2.5
TOTAL SPAIN	RBMP preparation year	4,918.91	24,939.26	934.50	30,792.67
	2021	4,986.88	25,749.85	1,097.48	31,834.20
	Change (%)	+1.4	+3.3	+17.4	+3.4

cont. Table 22. Water demands for each river basin district.

(*) Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan

According to data shown, water demands in Spain, defined as the amount of water users expect to receive, come up to 30,792.67 hm³/year; 81% of such total amount corresponds to agricultural uses, 16% to supplies to population centres and 3.0% to industries unconnected to urban networks. This estimate is remarkably similar to the one included in the WPW, which calculates that the total Spanish water demand amounts to 31,088 hm³/year. Such calculations were taken 15 years apart; a period during which both irrigation area and Spanish population have increased noticeably.

Forecasts for 2021 involve an increase in demand of 1,040 hm³/year, although the distribution of such variation is very heterogeneous; special mention must be made to the Jucar river basin district, which would reach during such time horizon a saving amounting to 210 hm³/year and others such as the Ebro river basin district, which foresees an increase in demand of over 790 hm³/year. Among the uses, agriculture and livestock farming stand out with a global increase of 810 hm³/year in 2021, even though such increase is very heterogeneous. Besides, it is the use which provides

River basin district	Estimation river basin management plans	Estimation SPIDER-CENTRE		Average of previous estimations	Data WPW
		2014	2015		1996
Eastern Cantabrian	--	--	--	--	133,783
Western Cantabrian	34	--	--	34	
Galicia-Coast	4,237	--	--	4,237	
Miño-Sil	21,235	15,067	18,390	18,231	
Douro	547,780	501,670	557,047	535,499	550,326
Tagus	256,583	214,182	201,378	224,048	230,720
Guadiana	463,231	458,591	482,045	467,956	340,974
Tinto, Odiel and Piedras	46,662	24,713	25,197	32,191	
Guadalquivir	856,429	695,348	697,838	749,872	483,170
Guadalete and Barbate	60,942	65,500	62,609	63,017	
Andalusian Mediterranean Basins	167,168	73,758	79,629	106,852	159,607
Segura	262,393	172,020	196,249	210,221	265,969
Jucar	390,038	323,741	352,725	355,501	370,000
Ebro	900,623	724,822	762,429	795,958	783,948
Catalonia	66,568	76,266	81,521	74,785	64,502
TOTAL	4,043,923	3,345,678	3,517,057	3,638,400	3,382,999

Table 23. Irrigation areas (ha) in the different peninsular planning scopes.

the highest savings in some river basin districts, as the already mentioned river basin of the Jucar, with a reduction for its agricultural demand of 200 hm^3/year as per forecasts for 2021.

According to its River Basin Management Plan, the Ebro river basin district is in highest demand, amounting to 26.6% of the Spanish total, which will increase to 28.2% of the total Spanish water demand in 2021; the Ebro is followed by the Guadalquivir river basin district (12.3% now and 11.8% of the Spanish demand in 2021) and Douro river basin district (12.2% and 11.9%), followed by the Jucar river basin district (10% of the national demand), Tagus (9%), Guadiana (7%) and Segura (5.4%); the water demand of the other river basin districts amount to less than 5% of the Spanish total.

Special mention must be made to irrigation due to its quantitative relevance. 3.7 million hectares are currently irrigated with the river basin distribution shown in Table 23. SPIDER-CENTER estimation comes from a study by MAGRAMA-UCLM (2016) which calculates the irrigation surfaces and water need of crops by means of land observation technologies supported by hydrometeorological data provided by the AISI network (Agro-Climatic Information System for Irrigation).

4.6

Transfer of water resources

Considering transfers between the different planning scopes before dealing with the allocation of resources is necessary. River basin management plans cannot alter the transfer regimes set out in the National Hydrological Plan and in other specific regulations, but it must be taken into account that some river basin districts obtain and provide resources by means of different water transfers, which are recorded by river basin management plans as pressures by abstraction in transferring basins (Tagus, Ebro...) and additional sources of resources to meet certain demands in receiving basins (Cantabrian districts, Segura...), which may even produce returns.

Table 24 offers a list of the main water transfers currently in operation. Those with an amount lower than 1 hm^3/year (equivalent to a continuous flow of 31 l/s) are not included, nor those returning flows received. Special mention must be made to the transfer between Carol river (Ebro) and Ariège river (Garona) between Spain and France, which may be considered as balanced and which is therefore not included in the following lists.

Water transfer	Scope		Purpose	Value* (hm^3/year)
	Transferring basin	Receiving basin		
Eiras-Porriño	GAL	MIÑ	Water supply	1.84
Tagus-Segura	TAJ	JUC	Water supply, irrigation, industry and environmental restoration	650.00
		GDN		
		SEG		
		CMA		
Finisterre Reservoir (Algodor)	TAJ	GDN	Water supply	14.50
Llerena Reservoir	GDN	GDQ	Water supply	1.12
Tarancón	GDN	TAJ	Water supply	1.67
Orellana-Tagus Canal	GDN	TAJ	Water supply	1.06
Chanza-Piedras	GDN	TOP	Water supply, industry, irrigation	167.40
Tinto, Odiel and Piedras	TOP	GDQ	Water supply	4.99
Fresneda Reservoir (Valdepeñas)	GDQ	GDN	Water supply	3.61
Montoro Reservoir	GDQ	GDN	Water supply	1.21
Sierra Boyera Reservoir	GDQ	GDN	Water supply	2.00
Negratín-Almanzora	GDQ	SEG	Water supply and irrigation	50.00
		CMA		
Bujeo system	GYB	CMA	Water supply	1.60
Guadiaro-Guadalete	CMA	GYB	Water supply and industry	110.00
Bidirectional interbasin transfer Ebro-Besaya	EBR	COC	Water supply	3.60
New bidirectional interbasin Transfer Ebro-Besaya	EBR	COC	Water supply	27.00
Cerneja-Ordunte	EBR	COR	Water supply	8.50
Zadorra-Arratia	EBR	COR	Water supply, industry and hydroelectricity	283.80
Alzania-Oria	EBR	COR	Water supply, industry and hydroelectricity	1.26
Minitransfer (Ebro-Campo de Tarragona)	EBR	CAT	Water supply and industry	121.60
Ciurana-Ruidecanyes	EBR	CAT	Water supply and irrigation	5.40

Table 24. Main transfers (over 1 hm^3/year) between Spanish planning scopes.

(*) Data correspond to the maximum transferable flow. When not provided, the average flow transferred in the last years is shown.

Values in hm³/year		Receiving planning scope of transferred waters															TOTAL
		COR	COC	GAL	MIÑ	DUE	TAJ	GDN	TOP	GDQ	GYB	CMA	SEG	JUC	EBR	CAT	
Transferring planning scope	COR	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COC	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GAL	0.00	0.00	---	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
	MIÑ	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DUE	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TAJ	0.00	0.00	0.00	0.00	0.00	---	8.20	0.00	0.00	0.00	50.00	310.00	1.80	0.00	0.00	370.00
	GDN	0.00	0.00	0.00	0.00	0.00	3.30	---	157.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160.71
	TOP	0.00	0.00	0.00	0.00	0.00	0.00	10.00	---	4.99	0.00	0.00	0.00	0.00	0.00	0.00	14.99
	GDQ	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	---	0.00	20.70	17.00	0.00	0.00	0.00	40.70
	GYB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	1.60	0.00	0.00	0.00	0.00	1.60
	CMA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.76	---	0.00	0.00	0.00	0.00	45.76
	SEG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00
	JUC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00
	EBR	212.55	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	70.00	286.55
	CAT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	0.00
	TOTAL	212.55	4.00	0.00	2.00	0.00	3.30	21.20	157.41	4.99	45.76	72.30	327.00	1.80	0.00	70.00	922.31

Table 25. General estimation of average resources recently transferred among the different planning scopes. Amounts in hm³/year.

The hydrological situation does not allow these transfers to exceed the maximum amounts foreseen in enabling regulations, so exchanged flows may be noticeably lower than the maximum mentioned. In order to illustrate the actual situation, Table 25 shows an indicative figure of the flow effectively transferred in the last years; as a result, it may be stated that 900 hm³ are exchanged annually among the Spanish peninsular river basins. Tagus (370 hm³/year), Ebro (287 hm³/year) and Guadiana (161 hm³/year) are the main transferring river basins whereas Segura (327 hm³/year), the Eastern Cantabrian (213 hm³/year) and Tinto, Odiel and Piedras river basins (157 hm³/year) are the main receiving basins.

4.7

Ecological flows

The establishment of ecological flow regimes is another of the compulsory contents which must be included in river basin management plans; since it is a restriction prior to the use of operation systems, it is included before the section dealing with the allocation and reservation of resources. The need to further define such concepts has been repeatedly highlighted both by the Council of State in its opinions on the approving regulations of river basin management plans (see opinions 1,151 / 2015 and 1,228 / 2015), and in the environmental reports of first cycle plans as well as in the strategic environmental statements of these new plans. Likewise, the European Commission has also expressed its concern in such regard recently adopting a guidance document on this issue (EC, 2015b); from which it is considered that, in particular in river basins suffering so much pressure due to scarcity such as the Spanish basins (Figure 4), it is necessary to establish environmental restrictions for the artificial modification of the flow regime so as not to hinder the achievement of environmental objectives.

RBD	Minimum flows		Minimum flows in drought periods		Maximum flows		Generating flows		Exchange rates	
	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle	1st cycle	2nd cycle
COR	120	120	74	74	3	3	0	0	0	0
COC	240	240	96	96	5	5	0	0	0	0
GAL	394	396	181	181	0	25	0	25	0	25
MIÑ	237	244	172	177	8	242	235	242	30	30
DUE	646	645	646	645	0	0	0	20	0	20
TAJ	19	19	1	1	0	0	0	0	0	0
GDN	27	199	7	7	17	17	17	17	27	27
TOP	43	43	43	43	0	0	0	0	0	0
GDQ	60	339	46	267	8	14	0	0	0	0
GYB	56	58	56	58	0	0	0	0	0	0
CMA	117	117	16	16	0	0	0	0	0	0
SEG	18	61	3	9	4	11	0	20	0	11
JUC	37	185	9	10	30	30	0	0	12	82
EBR	41	70	5	5	0	0	1	1	0	0
CAT	248	248	0	0	0	0	0	10	0	248

Table 26. Number of water bodies with components corresponding to the ecological flow regimes allocated in both planning cycles.

The second planning cycle shows very significant progress in the regulatory definition of ecological flow regimes. Efforts have been specially focused on the establishment of minimum flows, both for standard hydrological scenarios and drought scenarios. This quantification is relevant and necessary for all water bodies falling within the river category so as to objectify the limitation to water exploitation, whether by means of extraction or alteration of the hydrological regime. Likewise, there has been progress in the establishment of other components of the ecological flow regime, the applicability of which are limited to those water bodies in which it would not be possible to reach environmental objectives without implementing them.

Table 26 includes some significant data regarding the progress carried out by these second cycle river basin management plans, a progress which is more evident in the graph included as Figure 2, particularly regarding the river basins of the Guadiana, Guadalquivir, Segura and, to a lesser extent, Jucar.

On the contrary, in the Tagus and Ebro river basin districts, there is still a major percentage of water bodies without a minimum flow component established. In both cases, the respective river basin management plans are to implement an extension of ecological flow regimes to cover all water bodies falling into the river category before 2019 (see Article 9.5 of the Regulation

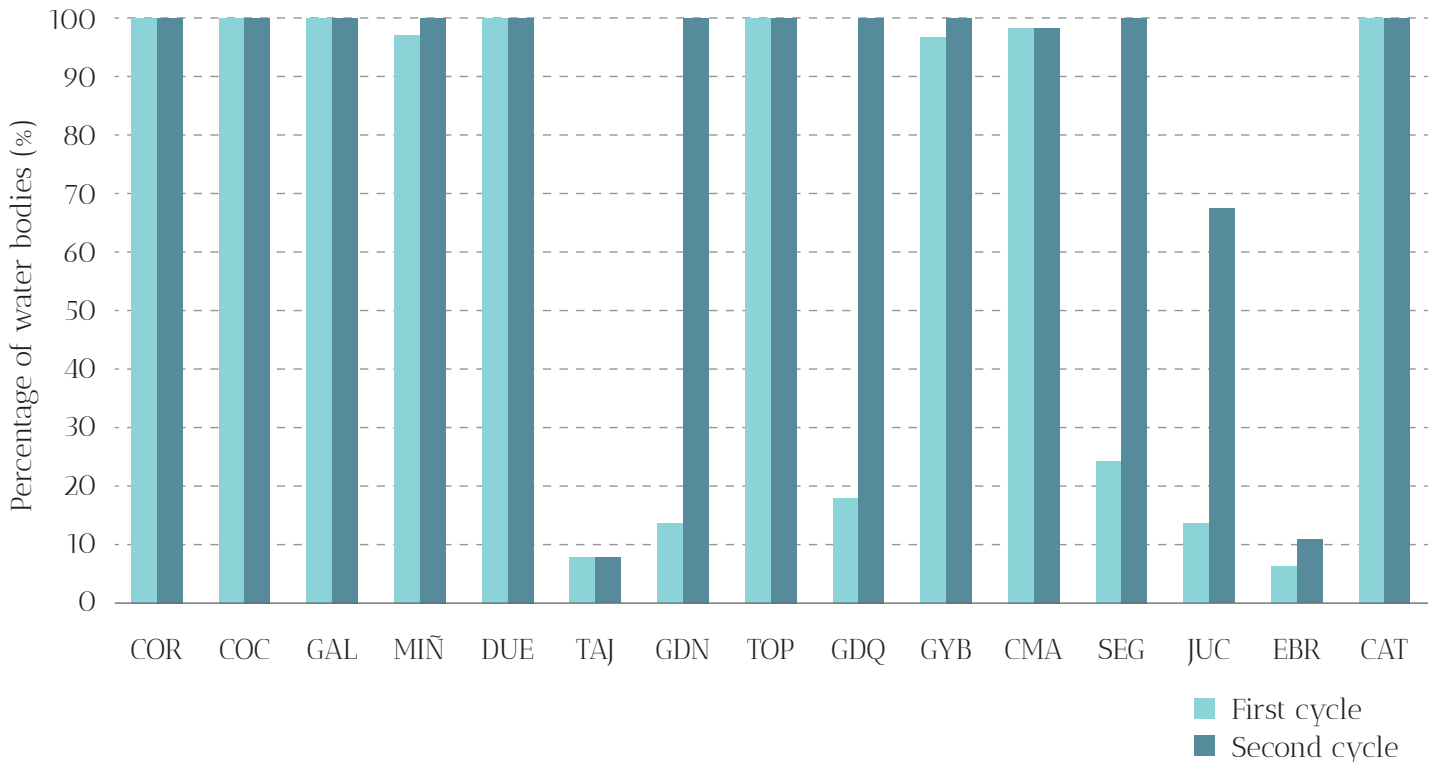


Figure 2. Evolution of the implementation of the ecological flow regime.

Percentage of water bodies falling into the river category (reservoirs excluded) for which the component of minimum ecological flow regime has been defined.

of the Tagus River Basin Management Plan and Article 10.2 of the Regulation of the Ebro River Basin Management Plan).

Therefore, after the approval of second cycle river basin management plans, the total number of water bodies falling into the river category with a minimum ecological flow regime duly defined and applicable by virtue of legal regulations, amounts to 75% in relation to the total number of water bodies within such category. At the end of the first planning cycle, said percentage amounted to just 57%.

As well as those ecological flows generically established for water bodies falling into the river category, plans cover the environmental needs of some particularly relevant wet areas. This is the case with the Tablas de Daimiel, Lagunas de Ruidera and other wetlands in the Guadiana river basin district; and Doñana in the Guadalquivir river basin district, considering a zoning that has allowed detailed establishment of the groundwater resources in the water bodies associated to the natural environment; this is also the case with El Hondo de Elche and other wetlands in the Segura river basin district and of the lake of the Albufera de Valencia and other wetlands of the Jucar river basin district.

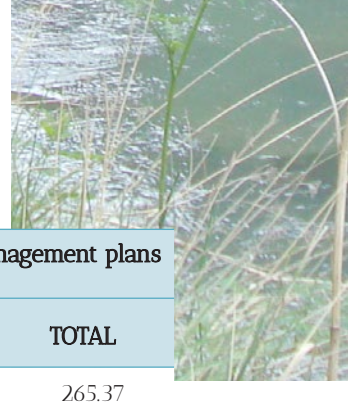
4.8

Allocation and reservation of resources

One of the most significant, key and unique contents of the Spanish river basin management plans is the one concerning the allocation and reservation of water resources so as to meet the water needs for current and future uses, that is to say, so as to establish water distributions within each river basin district. This is an aspect which is not required by the WFD but, on grounds of the relevance of water movements it involves (some 30,000 hm^3/year) and its logical relationship to the circulating flow regimes, it is critical not only for dealing with the socioeconomic aspects to which it particularly addresses, but also for assessing the impact produced by it, calculating accurately the environmental objectives in water bodies and, as the case might be, rationalising the application of exemptions to the compliance of such objectives.

The allocation and reservation of resources available for the foreseeable demands has been carried out based on the results of the balance obtained for the demands scenario established for the year 2021, using the water resource series corresponding to the period starting in 1980/81 (Table 17, short-term series). Likewise, river basin management plans have listed those demands which cannot be met with the resources available within the corresponding river basin districts.

In order to carry out these calculations, numerical models reproducing the behaviour of operation systems have been used in monthly stages during the entire data series under simulation. These models have been designed with the support of the tool Aquatool (http://www.upv.es/aquatool/es/index_es.html), developed by the Environmental and Water Engineering



Institute of the Universidad Politécnica de Valencia.

Table 27 shows a summary of the allocations established in the new plans. It must not be construed that the addition of allocation and reservations, shown in Figure 3, directly corresponds to the use or exploitation levels since, in many cases, allocations and reservations have been applied by means of alternative solutions which are implemented simultaneously in order to guarantee supplies in the event that any of the foreseen sources fail. Such is the case of the progressive integration of non-conventional resources, from desalination or reuse processes because, since they are included in the allocations and reservations category, they may lead to a double counting effect. Such is also the case of the double counting of those flows reserved for the replacement of other supply sources. In any case and in general terms, allocated flows must not significantly exceed the flow demanded within horizon 2021, for which allocations are made.

RBD	Allocation of resources included in river basin management plans (hm³/year)			
	Urban use	Agricultural use	Industrial use	TOTAL
COR	226.92	2.33	36.12	265.37
COC	246.54	64.36	173.28	484.18
GAL	222.30	30.60	84.71	337.61
MIÑ	195.95	195.66	11.47	403.08
DUE	284.53	3,425.60	45.78	3,755.91
TAJ	994.03	1,911.53	96.26	3,001.82
GDN	254.21	2,022.20	82.15	2,358.56
TOP	55.99	359.17	52.69	467.85
GDQ	400.00	3,327.84	43.40	3,771.24
GYB	117.33	287.85	8.58	413.76
CMA	278.74	770.49	50.79	1,100.02
SEG	238.00	1,353.00	9.00	1,600.00
JUC	572.17	2,181.55	35.43	2,789.15
EBR	614.05	7,678.54	85.40	8,377.99
CAT	530.50	377.30	100.00	1,007.80
BAL	99.90	47.02	3.30	150.22
MEL	10.85	0.00	0.00	10.85
CEU	9.10	0.00	0.00	9.10
CAN (*)	232.69	230.47	29.49	492.65
TOTAL:	5,583.80	24,265.51	947.85	30,797.16

Table 27. Summary of the allocation and reservation values for 2021 included in second cycle river basin management plans.

(*) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

Allocations for industrial uses, generally with a low consumption and high return, have been incorporated in some cases into allocations for urban supply, since a major percentage of industries meet its water demands through urban networks. Within industrial uses, allocations for major refrigeration demands for thermal power plants for the generation of power are particularly relevant, in contrast with hydroelectric exploitations which do not require any other use.

In conclusion, it may be stated that these new plans, with small variations arising from the harmonisation of calculation and adjustment criteria regarding the support information used, reproduce allocations included in first cycle river basin management plans.

Figure 3 shows graphically the information offered in the previous table.

In order to assess the impact of these abstractions, an exploitation index may be used which, calculated in a homogeneous manner, may offer a useful comparative view to evaluate the effect of these allocations.

Table 28 includes basic data previously presented which allows the exploitation indexes offered by the table to be calculated. The first column shows the resource available, calculated as the natural conventional resource included in Table 17 to which the non-conventional one is added (Table 19) while subtracting those flows transferred to other river basins and adding the ones received by means of transfer from other planning scopes (Table 25). The second column, allocated flow, reproduces the total allocation values for 2021 included in Table 27. Consumptions contained in the third column derive, when available, from the ones collected in the table on cost recovery each plan adds in a

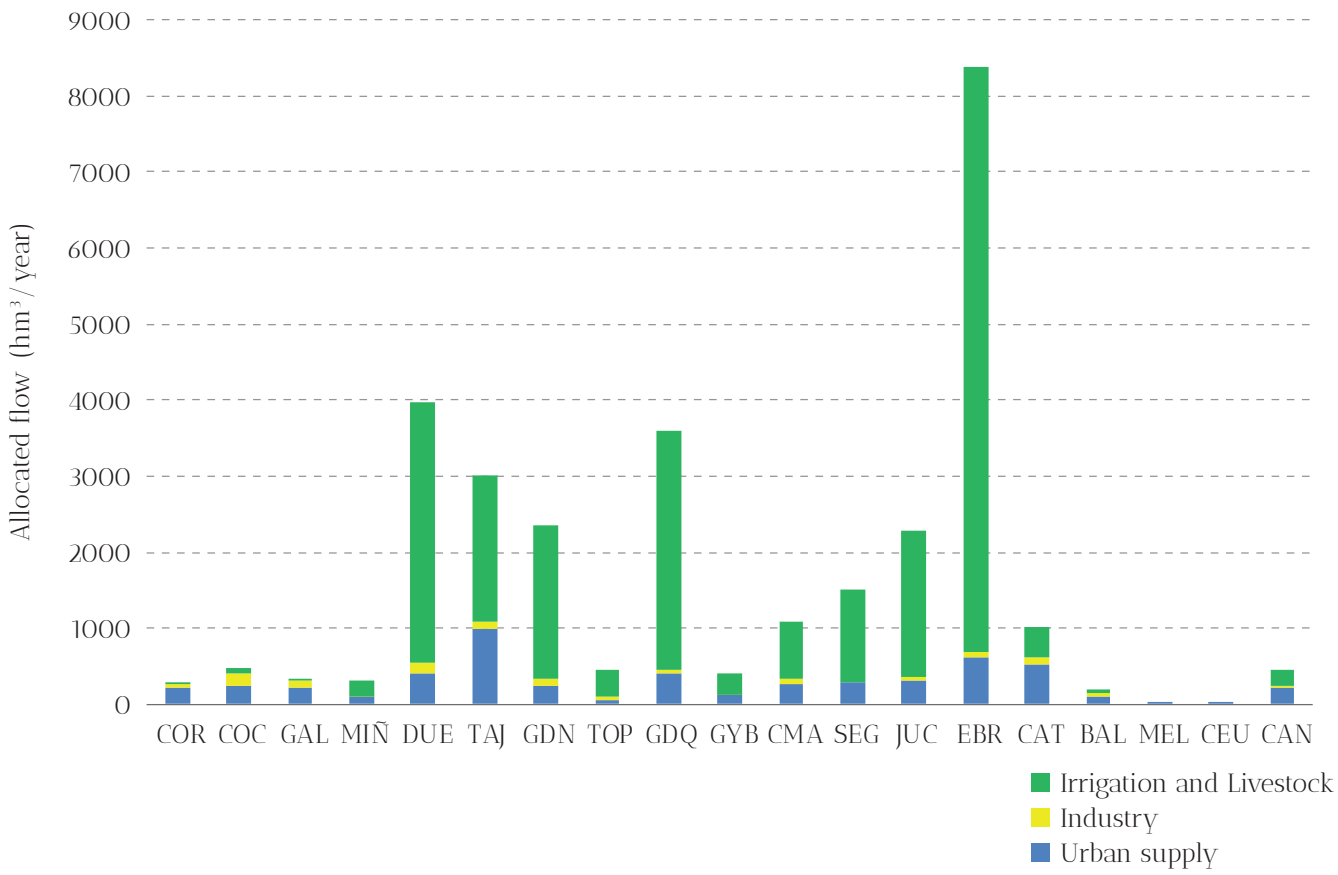


Figure 3. Flow allocated for 2021 in each planning scope.

noticeably homogeneous manner. In those cases when the aforementioned source has not been used, data have been calculated from demands met.

Exploitation indexes are calculated from the information contained in the aforementioned three columns. Both cases represent average results corresponding to water use and consumption in the districts; at the bottom of the table, average results for Spain are shown.

The first index (S-WEI) has been obtained by calculating the percentage corresponding to allocations in relation to the resource, that is to say, the foreseeable abstraction against the resource. It must be taken into account that allocations are distributed based on a detailed calculation by means of simulation models, which include the rules and management elements playing a significant role in the calculation of the balance of operation systems. For example, the possible exploitation of returns generated by those demands located upstream.

RBD	Resource (hm^3/year)	Allocated flow (hm^3/year)	Consumption (hm^3/year)	Exploitation indexes (%)			
				S-WEI(1)	WEI+	WEI+(2)	WEI+(m)
COR	4,673	265.37	22,8	5.7	0.5	1.24	2 / AG
COC	11,855	484.18	131,4	4.1	1.1	---	7 / AG
GAL	12,716	337.61	93,2	2.7	0.7	---	6 / AG
MIÑ	11,823	403.08	364,8	3.4	3.1	2.00	29 / AG
DUE	12,777	3,755.91	2,322.0	29.4	18.2	18.70	156 / JL
TAJ	7,865	3,001.82	1,707.0	38.2	21.7	---	357 / AG
GDN	4,869	2,358.56	1,741.3	48.4	35.8	16.46	1.163 / AG
TOP	801	467.85	133.3	58.4	16.6	---	603 / AG
GDQ	7,071	3,771.24	3,199.7	53.3	45.3	---	544 /AG
GYB	823	413.76	223.3	50.3	27.1	---	784 / AG
CMA	2,916	1,100.02	747.7	37.7	25.6	56.60	325 / AG
SEG	1,425 (*)	1,600.00	1,109.5	112.3	77.9	124.00	264 / JL
JUC	3,194	2,789.15	1,627.6	87.3	51.0	65.00	226 / JL
EBR	14,340	8,377.99	5,726.6	58.4	39.9	34.00	249 / AG
CAT	2,536	1,007.80	848.3	39.7	33.5	32.00	118 / AG
BAL	212	150.22	206.2	70.9	97.3	---	---
MEL	22	10.85	4.4	49.3	20.0	---	---
CEU	14	9.10	4.4	65.0	31.4	---	---
CAN(**)	1,083	492.25	223.2	45.3	20.6	---	---
TOTAL	99,590	30,795	20,437	30.9	20.5	---	---
PENINSULA	99,684	30,134	19,999	30.2	20.1	---	172 / JL

Table 28. Exploitation indexes.

(*) Resources of the district which do not drain in the Segura river are counted.
(1) Data calculated with the information offered in the table,
(2) Data contained in the river basin management plan.
JL: July, AG: August
(**) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

The second indicator (WEI+) corresponds to the definition adopted by the European Water Directors in 2012: "*the total consumption of water divided by the renewable freshwater resources*", proposing for its calculation a fraction in which the numerator corresponds to consumptions (abstractions minus returns) and the denominator includes renewable freshwater resources. Besides, considering that some plans calculate this exploitation index in detail, the table reflects the value set out in the corresponding River Basin Management Plan (WEI+[2]). Differences are the result of exceptional cases in the calculations which are explained in each one of the affected plans.

Values obtained herein are graphically represented in Figure 4. This image clearly shows the way these average values do not allow to appreciate the remarkable and heterogeneous water irregularity in Spain, which

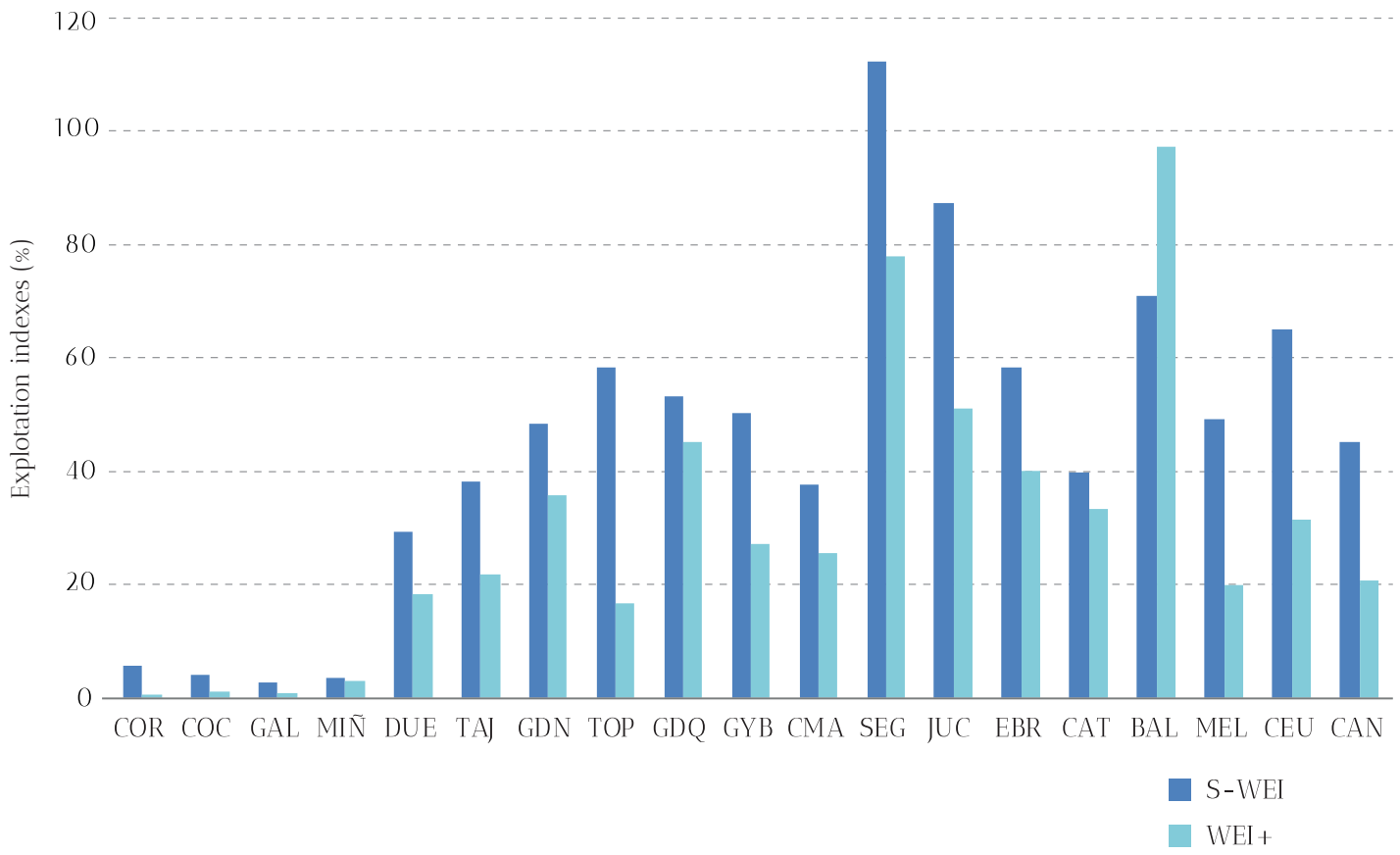


Figure 4. Exploitation degree of water resources according to each river basin management plan.

is evident when studying the monthly values of the exploitation index.

The calculation of the monthly exploitation index – WEI+(m) – has been made using average monthly values of the series of natural resources and theoretical monthly distribution of consumptions. This calculation has been made for the twelve months of the year, including the datum with a highest value stating the corresponding month, July or August in all cases.

The annual distribution of rainfall in the Mediterranean scope usually presents maximum figures in the equinox with a tendency to be concentrated during the winter in Atlantic areas; although always under a wide irregularity scenario. Nevertheless, demands peak during the summer months mainly due to irrigation needs. Therefore, Cantabrian river basins, with a lower specific relevance regarding irrigation than other Spanish river basin districts, offer the lowest values of the exploitation indexes, both annually and monthly. Major river basins (Douro, Tagus, Guadiana, Guadalquivir and Ebro) offer very high values in monthly indexes which may even exceed 1,000%, due to the scarcity of summer contributions and the high concentration of demand in the middle of the summer. These values show the special characteristics of river basins in Spain, the supply system of which is governed by the supply regulations for major reservoirs so as to adapt availability to water demand. It should be noted that Mediterranean river basins of Eastern Spain (Segura and Jucar), which show the highest annual values in the exploitation index, are not the ones presenting the greatest monthly imbalance since the demand is less seasonal than in other areas of Spain and because of the fact that contributions show a more irregular distribution throughout the year, that is why it is homogenised when considering average values of different years.

4.9

Identification of protected areas

River basin management plans must include a summary of the Register of Protected Areas of the corresponding area. A specific chapter has been devoted to comply with such requirement, as shown in Table 11, as well as an addendum to the Dossier in which such contents are developed in further detail. Table 29 shows the number of protected areas corresponding to each one of the classes that, according to Article 24 of the RPH, must include the aforementioned Register of Protected Areas of each river basin district. The respective plans include interactive maps showing the location of each protected area and, consistently with their specific regulation, a summary of the information available regarding their degree of conservation.

The inventory of protected areas included in these plans has been specially reinforced in the treatment of Natura 2000 Network areas. In order to do so, with the support of the Directorate-General for Environmental Quality and the Environment of the MAPAMA, the inventory

of habitats and species dependent on the water environment has been updated and, based on that, a new identification of those areas which must be considered by river basin management plans have been carried out for the purposes of taking into account their particular conservation objectives and to contribute to their achievement.

In this second planning cycle, new information on the conservation plans of these areas, which have been or are being adopted by the Autonomous Communities in their respective scopes of competence, was made available. A major part of such information was unavailable for the preparation of first cycle river basin management plans, but within the reporting obligations framework of

Protected area		Cycle	COR	COC	GAL	MIÑ	DUE	TAJ	GDN
Abstraction areas for water supply	SWB/GWB	1st	106	123	2,183	754	3,518	476	1,521
	From SWB	2nd	75	101	132	157	179	114	78
	From GWB		17	20	17	6	3,302	142	506
Protection areas for economically significant aquatic species		1st	12	31	103	9	21	15	29
		2nd	14	30	133	451	52	15	29
Recreational water bodies (including bathing waters)		1st	36	99	448	32	26	32	26
		2nd	53	107	459	46	27	35	29
Vulnerable Areas		1st	0	0	0	0	10	7	10
		2nd	0	0	0	0	10	7	10
Sensitive Areas		1st	12	8	2	6	36	53	19
		2nd	12	7	24	6	35	47	36
Areas for the protection of habitats and species	SCI-SAC	1st	36	79	37	20	78	85	61
		2nd	31	66	37	29	74	72	61
	SPA	1st	4	16	9	11	53	63	43
		2nd	4	17	13	14	49	48	36
Protection perimeters for mineral and thermal waters		1st	4	18	17	24	31	24	15
		2nd	3	22	17	44	32	12	7
River Natural Reserves	In the Plan	1st	6	15	13	7	24	40	1
	Declared	2nd	5	14	13	7	4	15	3
	Proposed		1	1	0	0	20	25	3
Wet Areas		1st	64	83	4	64	393	29	160
		2nd	14	3	4	573	393	27	77

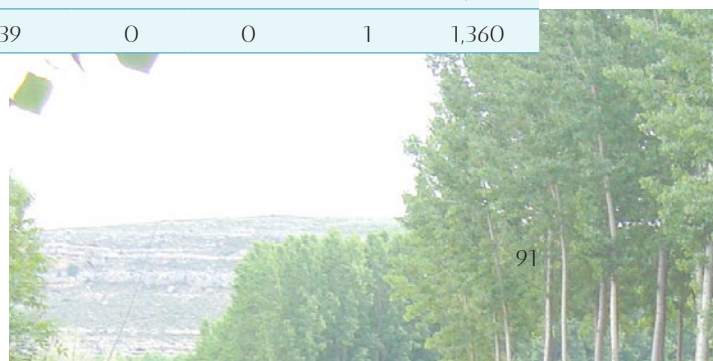
Table 29. Inventory of Protected Areas. Number of protected areas by district.

(*) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

the Habitats Directive, it has been made available to the European Commission and is now included in the updated second cycle river basin management plans.

Therefore, the objectives established in the specific regulation for each protected area have been included in river basin management plans as additional requirements for the relevant water bodies, in compliance with Article 4.1.c) of the WFD. Notwithstanding the foregoing, it must be highlighted that, in general terms, the good status objective meets the requirements of protected areas even though, with some exceptions, other additional objectives could be expressed by means of accurate quality elements.

TOP	GDQ	GYB	CMA	SEG	JUC	EBR	CAT	BAL	MEL	CEU	CAN (*)	Total
86	954	109	882	119	1,980	7,072	1,292	80	21	5	--	21,281
10	57	3	32	7	20	255	36	0	0	0	116	1,372
4	1,111	8	54	95	85	1,196	844	75	3	0	41	7,526
5	22	10	39	8	11	20	37	4	0	1	--	377
5	22	10	39	9	18	7	110	4	0	1	0	949
25	32	53	237	116	176	43	208	26	8	7	--	1,630
4	32	41	239	122	208	48	208	167	7	9	172	2,013
3	9	3	14	9	280	23	20	13	0	0	--	401
3	7	3	14	8	10	29	9	13	0	0	7	130
3	13	3	3	7	30	29	113	125	0	0	--	462
8	13	4	3	7	30	29	130	118	0	0	18	527
19	38	25	70	73	83	292	56	71	0	2	--	1,125
17	67	24	54	29	89	186	55	31	1	1	2	926
6	13	14	21	33	44	132	24	24	2	2	--	514
5	27	14	14	20	45	80	0	22	0	1	41	450
0	21	2	49	10	36	55	43	0	0	0	--	349
0	20	0	12	9	35	60	43	0	0	0	19	335
2	7	6	16	1	8	25	38	0	0	0	0	209
0	7	0	0	7	10	13	38	0	0	0	0	136
2	0	6	16	1	0	12	0	0	0	0	0	87
35	12	30	71	131	51	60	0	60	0	0	--	1,247
0	108	0	33	5	51	32	0	39	0	0	1	1,360



4.10

Monitoring of water bodies and protected areas

With the purpose of getting a general and ever updated view, which is both consistent and comprehensive of the status of water bodies within each river basin district, several monitoring programmes on the status of waters must be implemented and maintained. The design of such programmes which, by virtue of Article 8 of the WFD, is established from the analysis provided in Article 5 of the Directive, is also an element that river basin management plans must compulsory include. Programmes must enable the monitoring of surface water bodies, both epicontinental as well as coastal and transitional waters, and groundwater. Additionally, specific programmes addressed to protected areas are required; programmes which must be designed in accordance with the nature and characteristics of each one of the areas (Table 29).

These new river basin management plans, together with the general regulations set forth on the matter, contribute significantly to the improvement and consolidation of the aforementioned monitoring programmes. There follows a summary of some explanatory data regarding, on the one hand, the monitoring of surface water bodies and, on the other hand, groundwater while integrating controls on protected areas into these two groups.

Below a summary table can be found (Table 30), showing the number of monitoring sites introduced to each monitoring programme, comparing data from the first and second planning cycles. The aforementioned table evidences the size of these programmes which, for the second planning cycle, have 22,109 monitoring sites.

Many adjustments have been applied between both cycles in order to efficiently improve information, which led to a reduction in the number of monitoring sites amounting to 6.2% in relation to the first cycle total amount.

Programmes for surface water bodies –divided into rivers, lakes, transitional and coastal waters– include 9,779 control points, which means a reduction of 25.8% in relation to the number of points used for the preparation of the first plans. The application of the new measurements newly required to assess the status of water bodies required a major diagnosis effort carried out during the first stages for the implementation of the WFD. Today, thanks to the improvement in the explanation between impacts and pressures, the dimension of the monitoring programmes for surface water bodies could be noticeably optimised.

In some cases, the same monitoring site is used for different monitoring programmes so it can record different variables at different times; therefore, the total number of monitoring sites previously stated does not necessarily match the total number of sites in which different controls are carried out.

In the case of groundwater monitoring programmes, for which the experience in the collection of data as required by the WFD was broader, the evolution was the opposite. Second cycle plans set out monitoring programmes including 12,330 control points, 18.5% more than the number of points used during the first cycle.

Among the monitoring sites for groundwater, the ones devoted to quantitative control (basically piezometric surveys) stand out, since between the first and the second cycle, there were 749 new sites, which mean an increase of 26.7% in relation to the number of sites available during the first planning cycle.

RBD	Surface water								Groundwater									
	Surveillance		Operative		Research		Protected areas		Surveillance		Operative		Research		Quantitative		Protected areas	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
COR	207	266	244	94	0	0	179	191	38	41	21	16	0	0	28	30	10	64
COC	806	255	344	70	0	0	327	240	53	38	0	0	0	0	36	36	20	37
GAL	657	238	29	48	0	0	255	111	51	83	0	0	0	0	51	57	44	0
MIÑ	91	147	74	90	21	13	110	212	44	44	18	23	1	14	8	23	9	21
DUE	851	174	728	571	233	423	648	314	486	341	140	131	0	0	555	547	144	173
TAJ	486	357	173	179	23	38	155	331	214	71	59	68	0	3	202	215	0	45
GDN	196	181	240	262	0	17	254	103	121	169	33	60	0	0	207	383	0	169
TOP	93	58	128	38	0	4	0	0	42	56	15	45	0	0	0	30	0	16
GDQ	328	49	134	114	3	2	68	77	155	31	78	400	0	0	266	311	80	69
GYB	90	76	139	66	0	2	3	3	75	96	36	96	0	0	0	59	0	26
CMA	106	182	101	93	2	1	36	54	98	183	98	142	0	0	0	366	0	0
SEG	145	130	183	139	7	7	214	72	45	75	368	46	0	0	172	193	28	58
JUC	431	216	243	280	0	0	136	34	218	261	99	116	0	0	287	293	0	83
EBR	476	379	385	207	0	68	172	148	1,693	675	0	1,040	0	0	377	312	348	1,214
CAT	389	638	141	416	0	0	961	475	613	472	867	496	0	0	446	225	138	557
BAL	166	0	68	79	0	0	343	2	328	184	123	122	0	0	126	127	204	165
MEL	4	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0
CEU	7	7	7	7	0	0	4	4	0	0	0	0	0	0	0	0	0	0
LAN (*)	66	50	41	0	0	0	0	37	0	7	0	0	0	0	0	7	0	0
FUE (*)	0	50	0	0	0	0	0	32	198	0	60	33	0	0	0	33	0	0
GCA (*)	0	90	0	0	0	0	0	70	0	83	0	109	0	0	0	185	0	37
TEN (*)	0	119	0	0	0	0	0	171	54	54	5	5	0	0	38	56	0	6
GOM (*)	23	33	0	0	0	0	0	12	8	32	3	2	0	5	5	28	0	27
LPA (*)	0	28	0	0	0	0	0	8	0	16	0	7	0	0	0	18	0	0
HIE (*)	0	18	0	0	0	0	0	4	0	6	0	13	0	0	0	19	0	0
TOTAL	5,618	3,746	3,403	2,753	289	575	3,865	2,705	4,534	3,018	2,023	2,970	1	22	2,804	3,553	1,045	2,767

Table 30. Monitoring programmes for water bodies. Number of sites by control type and planning cycle.

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

4.10.1. Assessment methods for surface water bodies

The new plans show a significant progress in the availability of assessment methods for monitoring the state of surface water bodies, and in their protocols. Both are included in Royal Decree 817/2015, of 11 September, establishing the monitoring and assessment criteria of the status of surface water and environmental quality standards. In order to boost the effective application of these new general regulations, Royal Decree 1/2016, approving the plans corresponding to inter-community river basin districts, includes transitional provision nº one, setting out the progressive replacement of quality standards and methodologies.

Table 31 shows the degree of development of methods for each quality element in the different river basin management plans that allow the assessment of ecological status regarding natural surface water bodies. For heavily modified and artificial water bodies, there are special situations documented in the relevant plans.

The information shown in the table indicates that progress still needs to be done regarding the availability of methods, particularly concerning fish indicators for rivers. However, there are cases, such as that of the Spanish lakes, where the use of this indicator is not deemed appropriate since they are mostly small lakes without fish populations or, when they do have them, they are populations with little value for the diagnosis intended, which is established by comparing reference conditions. Therefore, when interpreting the table, the lack of certain methods must not be construed as a need to develop them.

Likewise, the existence of a certain method does not necessarily mean that such method was used in the corresponding river basin management plan. In many cases, this availability of methods has become evident with the adoption of RD 817/2015, of 11 September, when most plans were already in the final preparation stages. For these reasons, the actual use of these status assessment systems must be applied during the following months by means of the follow-up works of the now updated river basin management plans.

Category	Element of quality		River Basin District and Planning Cycle																					
			COR		COC		GAL		MIÑ		DUE		TAJ		GDN		TOP		GDQ		GYB		CMA		SEG	
			1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Rivers	Biological	Phytoplankton																								
		Macrophytes																								
		Phytobenthos																								
		Benthic Invertebrates																								
		Fish																								
	Physicochemical																									
	Hydromorphological																									
Lakes	Biological	Phytoplankton																								
		Macrophytes																								
		Phytobenthos																								
		Benthic Invertebrates																								
		Fish																								
	Physicochemical																									
	Hydromorphological																									
Transitional	Biological	Phytoplankton																								
		Macroalgae																								
		Angiosperms																								
		Benthic Invertebrates																								
		Fish																								
	Physicochemical																									
	Hydromorphological																									
Coastal	Biological	Phytoplankton																								
		Macroalgae																								
		Angiosperms																								
		Benthic Invertebrates																								
	Physicochemical																									
	Hydromorphological																									

Assessment methods developed

Assessment methods partially developed or under developing

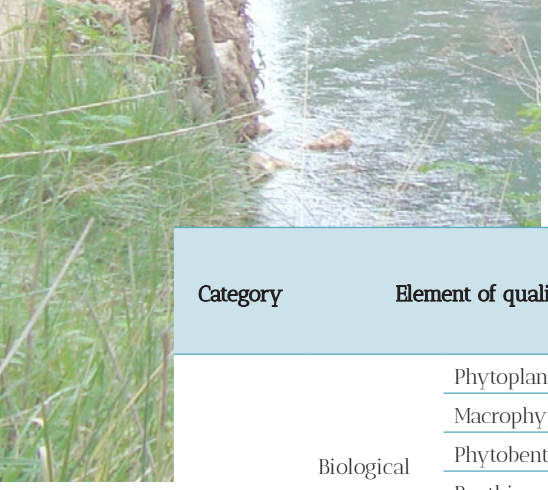
Non-developed assessment methods

Not applicable since such water body category has not been identified

No Information

Table 31. Availability of assessment methods on the ecological status of natural surface water bodies.

The column corresponding to the first cycle has been filled with data included in EC (2015a).



Category	Element of quality		River Basin District and Planning Cycle																							
			JUC		EBR		CAT		BAL		MEL		CEU		LAN		FUE		GCA		TEN		GOM		LPA		HIE	
			1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Rivers	Biological	Phytoplankton																										
		Macrophytes																										
		Phytobenthos																										
		Benthic Invertebrates																										
		Fish																										
	Physicochemical																											
	Hydromorphological																											
Lakes	Biological	Phytoplankton																										
		Macrophytes																										
		Phytobenthos																										
		Benthic Invertebrates																										
		Fish																										
	Physicochemical																											
	Hydromorphological																											
Transitional	Biological	Phytoplankton																										
		Macroalgae																										
		Angiosperms																										
		Benthic Invertebrates																										
		Fish																										
	Physicochemical																											
	Hydromorphological																											
Coastal	Biological	Phytoplankton																										
		Macroalgae																										
		Angiosperms																										
		Benthic Invertebrates																										
	Physicochemical																											
	Hydromorphological																											

- Assessment methods developed
- Assessment methods partially developed or under developing
- Non-developed assessment methods
- Not applicable since such water body category has not been identified
- No Information

cont. Table 31. Availability of assessment methods on the ecological status of natural surface water bodies.

4.10.2. Assessment methods for groundwater bodies

Methods for the diagnosis of the status of groundwater bodies are taken from CIS guidance document n° 18 (EC, 2009). Considering this and other requirements, Spanish regulations separate assessment criteria for chemical status from assessment criteria for quantitative status.

Criteria for the assessment of the chemical status of groundwater bodies have also been recently updated by means of RD 1075/2015, of 27 November, updating the basic Spanish regulation on such topic, RD 1514/2009, of 2 October, regulating the protection of groundwater against pollution and deterioration. Therefore, as a consequence of the adaptation of the Community regulation, Directive 2006/118/EC (so-called "daughter" of the WFD), on the protection of groundwater against pollution and deterioration was adopted, by means of Directive 2014/80/EU, of 20 June 2014.

The methodology for assessing the chemical status of groundwater bodies is based on indicators that use the concentration of pollutants (nitrates, active substances of pesticides, arsenic and fluoride) and other substances as parameters. Each plan can set threshold values to identify the pollution (cadmium, lead, mercury, ammonium, chloride, sulfate, nitrite, phosphate, trichlorethylene and tetrachlorethylene and conductivity).

Regarding the quantitative status, general criteria can be found in the IPH, section 5.2.3.1, which reproduces and clarifies the application of tests proposed in the aforementioned guidance document of the Commission.

Concretely, the piezometric level (measured at control points) and the exploitation index of groundwater bodies (balance between abstractions and the available resources) are used as indicators.

4.11

Status of water bodies

One of the basic purposes of river basin management plans is to achieve the environmental objectives defined in the WFD, a goal which is pursued by means of the implementation of a number of measures aimed at the reduction of the negative effect of significant pressures (Table 20). Therefore, both the assessment of the status of water bodies and the registration of their time evolution are key contents of the river basin management plans.

These second cycle plans have improved by overcoming some of the problems arising from the status assessment of first cycle plans, both regarding surface and groundwater bodies.

There follows a summary of the status assessment of water bodies according to the diagnosis offered in river basin management plans, including separately, based on their special characteristics, the assessment of the status of surface water bodies and the status of groundwater bodies.

4.11.1. Assessment of the status of surface water bodies

The status of surface water bodies is obtained as the worst value of their ecological and chemical status. For the purposes of this summary, the ecological status referring to natural water bodies is dealt together with the ecological potential, referring to artificial and heavily modified artificial water bodies.

After that, given the relevance of this issue, results are stated separately: on the one hand, the assessment of the ecological status and potential and, on the other hand, the chemical status. The addendum 3 includes more detailed information, sorted by category and the nature of water bodies, the information of which is summarised below.

4.11.1.1. Assessment of the ecological status/potential

Table 32 below describes the results of the ecological status or potential for each river basin district while comparing first and second cycle data; finally total amounts by category and nature of water bodies are included.

Diagnosis problems have been clearly reduced as a result of the second cycle review. These problems continue, on the one hand, in artificial and heavily modified water bodies within the river category and, on the other hand, in both natural and heavily modified water bodies of the lake category. In any case, the important progress shown by the diagnosis carried out must be acknowledged. This progress is clearly noticeable in the Jucar, Guadiana and Tagus river basins, and especially in the Ebro river basin district. The river basin district of the Balearic Islands and the intra-community river basin district of Catalonia are the ones currently encompassing the main problems.

RBD	Category and Nature			Number of SWB		Ecological Status/Pot. 1st cycle			Ecological Status/Pot. 2nd cycle		
				1st cycle	2nd cycle	Good or higher	Less than good	Unknown	Good or higher	Less than good	Unknown
COR	Total			138	138	60	75	3	88	50	0
COC	Total			293	293	209	79	5	244	49	0
GAL	Total			462	466	222	115	125	361	105	0
MIÑ	Total			278	279	195	78	5	212	67	0
DUE	Total			710	709	161	548	1	211	498	0
TAJ	Total			324	323	170	134	20	182	135	6
GDN	Total			313	316	87	212	14	96	216	4
TOP	Total			68	68	25	28	15	34	32	2
GDQ	Total			443	446	255	188	0	276	170	0
GYB	Total			97	97	22	41	34	44	53	0
CMA	Total			175	177	91	82	2	104	73	0
SEG	Total			114	114	55	58	1	61	53	0
JUC	Total			349	349	149	114	86	127	222	0
EBR	Total			821	823	240	149	432	582	234	7
CAT	Total			346	346	78	172	96	133	188	25
BAL	Total			172	171	73	35	64	69	39	63
MEL	Total			4	4	2	1	1	3	1	0
CEU	Total			3	3	2	1	0	2	1	0
CAN (*)	Total			40	40	37	0	3	40	0	0
TOTAL	River	Natural		3,627	3,480	1,516	1,495	616	2,008	1,412	60
		Heavily Mod.	Reserv..	406	421	199	135	72	252	159	10
			River	331	478	52	264	15	163	306	9
		Artificial		17	11	6	5	6	5	4	2
	Lake	Natural		227	220	65	81	81	101	117	2
		Heavily Mod.		61	56	6	10	45	33	21	2
		Artificial		41	50	10	12	19	22	27	1
	Transitional	Natural		120	116	63	40	17	56	51	9
		Heavily Mod.		60	70	17	35	8	28	42	0
	Coastal	Natural		212	211	179	24	9	176	29	6
		Heavily Mod.		48	49	20	9	19	25	18	6
	TOTAL			5,150	5,162	2,133	2,110	907	2,869	2,186	107

Table 32. Assessment of the ecological status or potential of surface water bodies by category and nature.

Comparison between the first and the second planning cycle.

(*) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

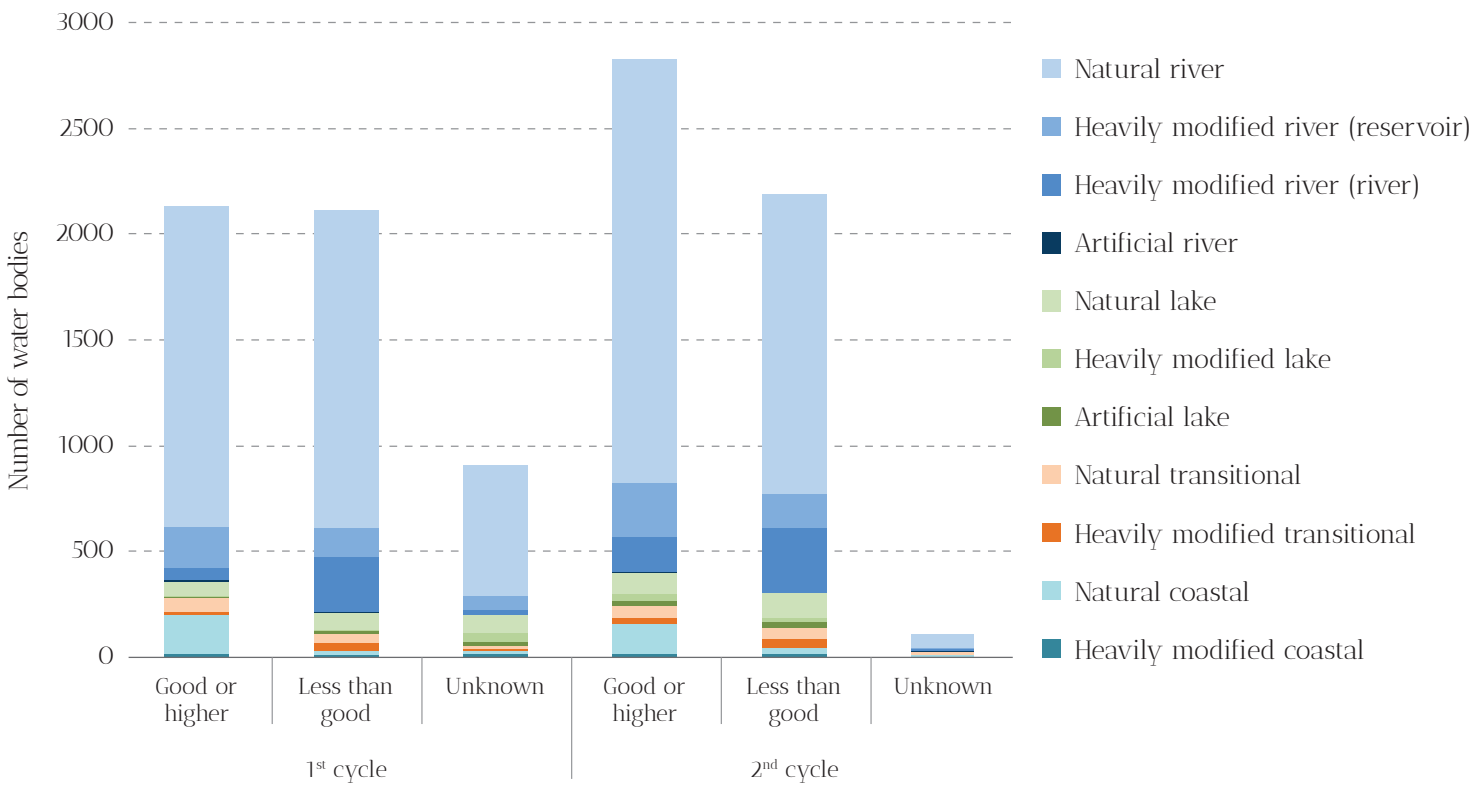


Figure 5. Ecological status/potential of surface water bodies

Figure 5, comparing the diagnosis of the ecological status or potential in both planning cycles, shows a general improvement of water bodies diagnosed as "good" and a noticeable reduction of the number of bodies with an unknown status. Figure 6 sets out this information for each one of the river basin districts.

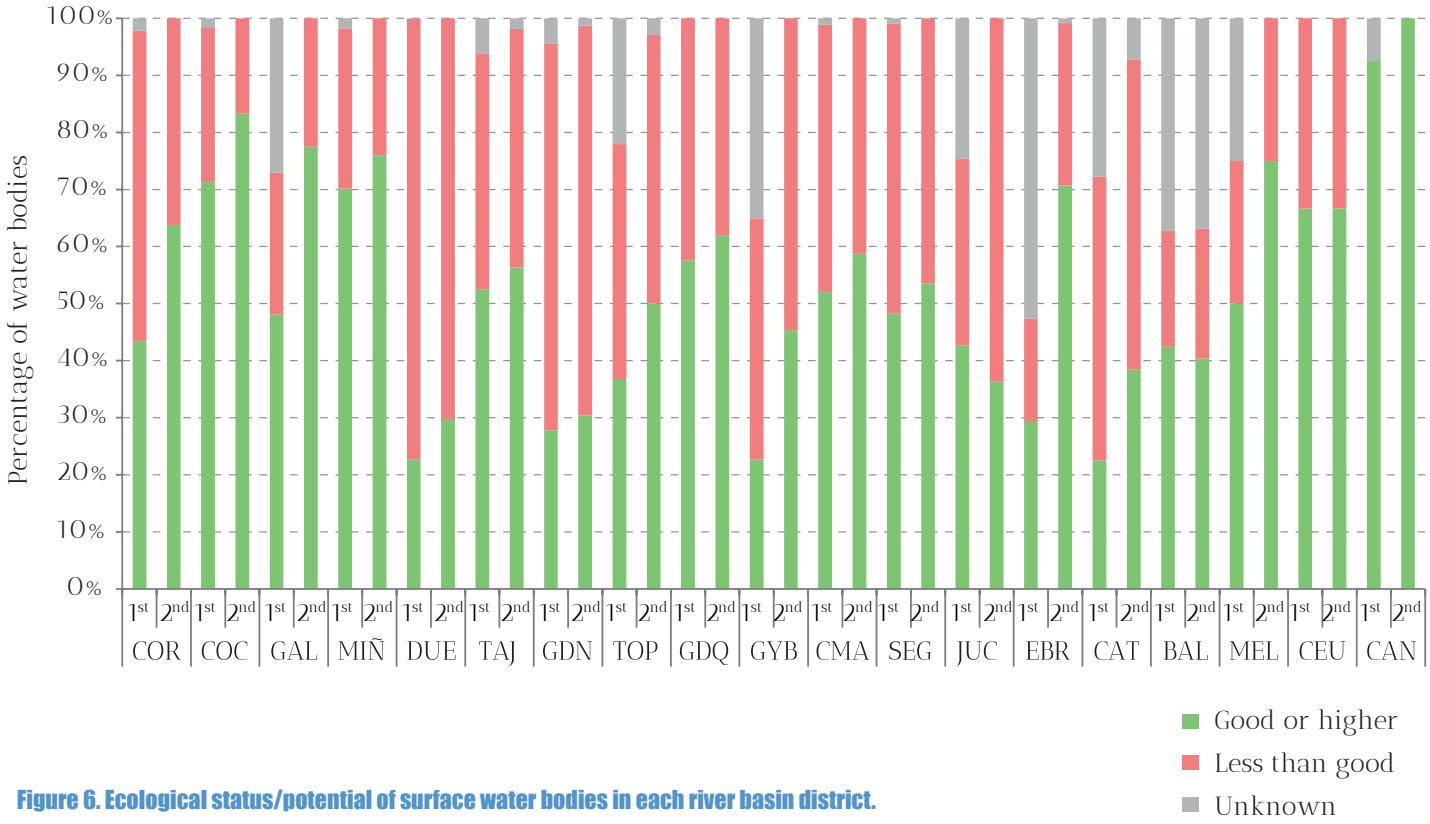
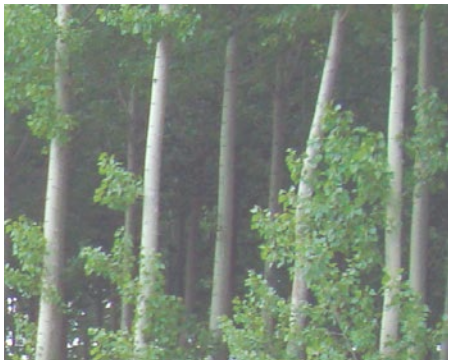
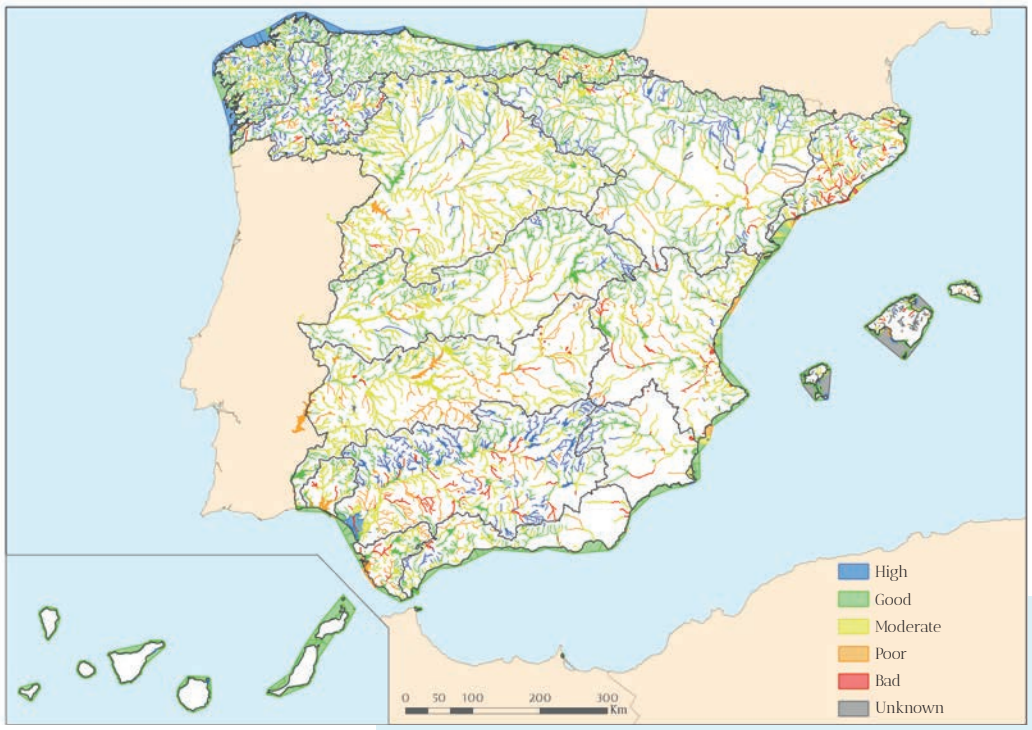


Figure 6. Ecological status/potential of surface water bodies in each river basin district.





Map 7. Ecological status/Potential of surface water bodies.

4.11.1.2. Assessment of chemical status

Regarding the chemical status, a similar summary has been prepared, included below as Table 33. As in the previous case, regarding the ecological status/potential, a noticeable reduction can be observed in the number of water bodies with unknown status. The progress is very important in the Miño-Sil river basin district, but it is also significant in the Jucar river basin, as evidenced by the analysis of hydromorphological pressures and point source pressures. In the case of the Ebro river basin district, a major reduction in the number of water bodies without a diagnosis can be observed.

RBD	Category and Nature			Number of SWB		Chemical Status 1st cycle			Chemical Status 2nd cycle		
				1st cycle	2nd cycle	Good	Failing to achieve good	Unknown	Good	Failing to achieve good	Unknown
COR	Total			138	138	81	19	38	127	11	0
COC	Total			293	293	81	6	206	284	9	0
GAL	Total			462	466	382	45	35	453	13	0
MIÑ	Total			278	279	56	7	215	269	10	0
DUE	Total			710	709	686	24	0	677	28	4
TAJ	Total			324	323	313	11	0	320	3	0
GDN	Total			313	316	268	2	43	282	1	33
TOP	Total			68	68	28	23	17	39	25	4
GDQ	Total			443	446	383	25	35	420	26	0
GYB	Total			97	97	50	12	35	70	23	4
CMA	Total			175	177	156	2	17	156	18	3
SEG	Total			114	114	97	16	1	100	11	3
JUC	Total			349	349	181	17	151	307	35	7
EBR	Total			821	823	0	34	787	790	33	0
CAT	Total			346	346	177	30	139	177	83	86
BAL	Total			172	171	0	0	172	69	0	102
MEL	Total			4	4	2	1	1	3	0	1
CEU	Total			3	3	0	0	3	2	0	1
CAN (*)	Total			40	40	35	0	5	40	0	0
TOTAL	River	Natural		3,627	3,480	2,148	163	1,316	3,189	171	120
		Heavily Mod.	Reserv.	406	421	281	19	106	384	25	12
			River	331	478	225	53	53	390	75	13
		Artificial		17	11	10	2	5	10	1	0
	Lake	Natural		227	220	64	0	163	179	9	32
		Heavily Mod.		61	56	6	3	52	53	1	2
		Artificial		41	50	18	0	23	43	1	6
	Transitional	Natural		120	116	31	9	80	71	11	34
		Heavily Mod.		60	70	32	8	20	51	13	6
	Coastal	Natural		212	211	142	10	60	192	4	15
		Heavily Mod.		48	49	19	7	22	23	18	8
	TOTAL			5,150	5,162	2,976	274	1,900	4,585	329	248

Table 33. Assessment of the chemical status of surface water bodies, by category and nature.

Comparison between the first and the second planning cycle.

(*) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

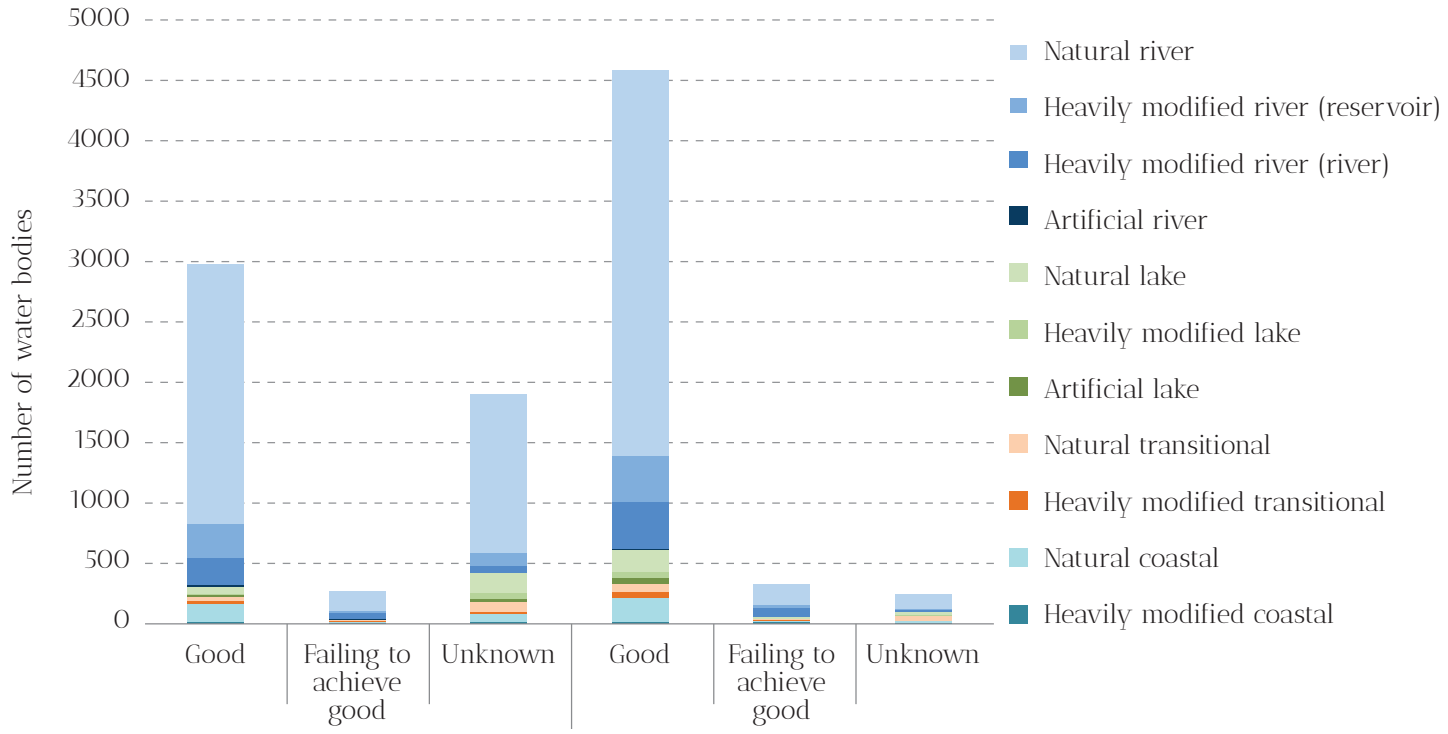


Figure 7. Chemical status of surface water bodies.

In the aforementioned case of the Ebro river basin district, as well as in the case of the Guadalquivir river basin district, the diagnosis of the chemical status has been completed with a specific analysis of pressures and impacts, which led to the qualification of an important number of water bodies as having good chemical status, without direct information.

As in the previous case, when explaining the evolution observed in the diagnosis of the ecological status, Figure 7 shows a comparison between the results of both planning cycles. The increase of surface water bodies qualified as having good chemical status is evident, as well as the reduction in the number of undiagnosed water bodies.

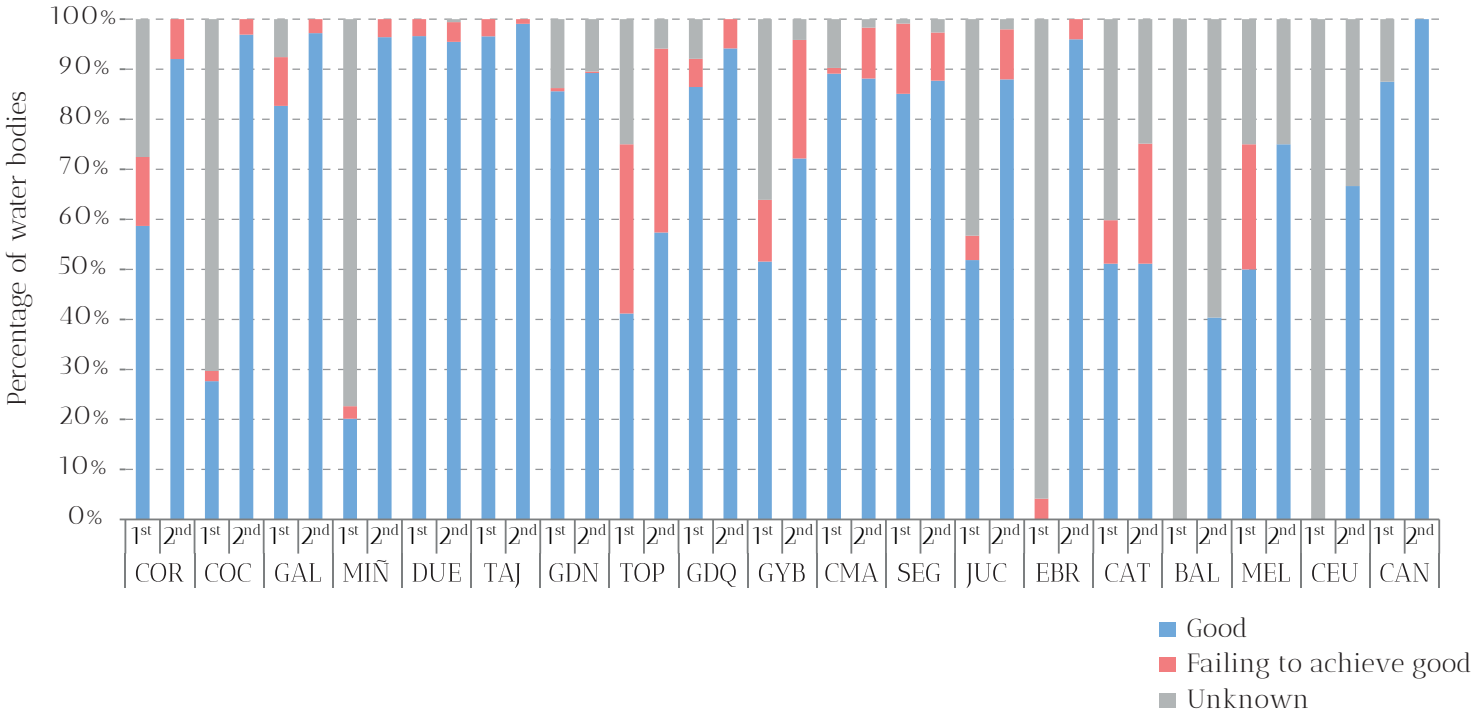


Figure 8. Chemical status of surface water bodies in each river basin district.

Figure 8 includes the information on the diagnosis of the chemical status of surface water bodies for each one of the river basin districts. It is obvious that the main diagnosis problems detected in the Cantabrian river basin districts, particularly in the Western Cantabrian, Miño-Sil and Ebro river basin districts have been addressed. In other cases, such as with the Tinto, Odiel and Piedras, Guadalete and Barbate and Jucar river basin districts, very significant progresses have also been detected.

Map 8. Chemical status of surface water bodies.

4.11.2. Assessment of status of groundwater bodies

The status of groundwater bodies is evaluated from the independent assessment of the chemical and quantitative status, resulting in the global classification of the worst value among both of them (Table 34).

RBD	Cycle	Number of GWB	Chemical Status		Quantitative Status		GWB Status		
			Good	Poor	Good	Poor	Good	Poor	No data
COR	1st	28	26	2	28	0	26	2	0
	2nd	20	19	1	20	0	19	1	0
COC	1st	20	20	0	20	0	20	0	0
	2nd		20	0	20	0	20	0	0
GAL	1st	18	18	0	18	0	18	0	0
	2nd		18	0	18	0	18	0	0
MIÑ	1st	6	5	1	6	0	5	1	0
	2nd		4	2	6	0	4	2	0
DUE	1st	64	50	14	59	5	48	16	0
	2nd		49	15	60	4	48	16	0
TAJ	1st	24	18	6	24	0	18	6	0
	2nd		18	6	24	0	18	6	0
GDN	1st	20	7	13	9	11	5	15	0
	2nd		5	15	9	11	4	16	0
TOP	1st	4	2	2	3	0	2	2	0
	2nd		1	3	4	0	1	3	0
GDQ	1st	60	44	16	42	18	33	27	0
	2nd	86	62	24	64	22	54	32	0
GYB	1st	14	5	7	3	3	5	7	2
	2nd		5	9	11	3	5	9	0
CMA	1st	67	32	35	35	32	27	40	0
	2nd		28	39	43	24	23	44	0
SEG	1st	63	39	24	22	41	16	47	0
	2nd		38	25	23	40	17	46	0
JUC	1st	90	63	27	60	30	50	40	0
	2nd		67	23	60	30	49	41	0
EBR	1st	105	82	23	104	1	82	23	0
	2nd		81	24	104	1	81	24	0
CAT	1st	39	16	23	33	6	14	25	0
	2nd	37	15	22	30	7	13	24	0
BAL	1st	90	55	35	53	37	47	43	0
	2nd	87	44	42	53	34	34	52	1
MEL	1st	3	0	3	0	3	0	3	0
	2nd		0	3	0	3	0	3	0
CEU	1st	1	0	0	0	0	0	0	1
	2nd		1	0	1	0	1	0	0
CAN (*)	1st	32	7	20	13	18	3	24	5
	2nd	33	19	14	27	6	16	17	0
TOTAL	1st	748	489	251	532	205	419	321	8
	2nd	762	494	267	577	185	425	336	1

Table 34. Assessment of the chemical, quantitative and global status of groundwater bodies in both planning cycles.

(*) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

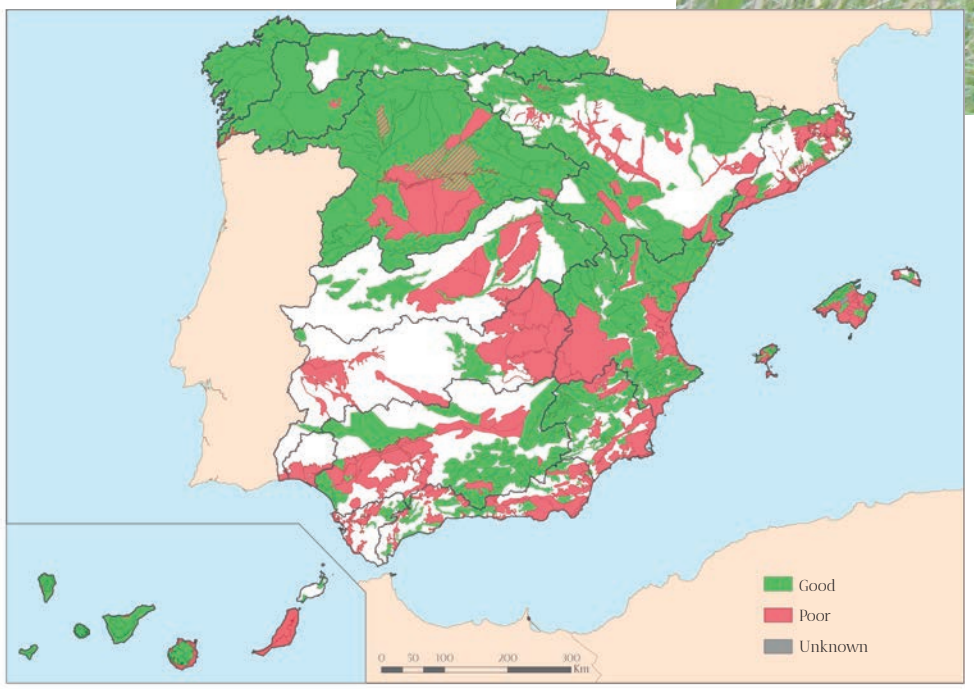
Figure 9. Chemical status of groundwater bodies.

Figure 10. Quantitative status of groundwater bodies.

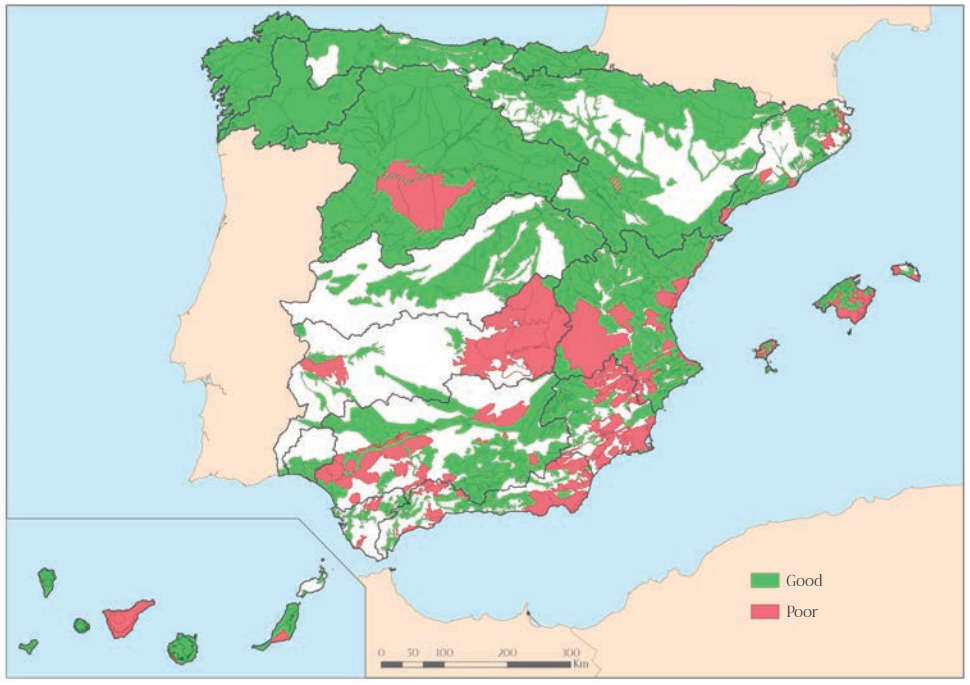
The percentage of groundwater bodies achieving a good chemical status is shown in Figure 9. Equivalently, Figure 10 offers the percentage of groundwater bodies achieving a good quantitative status. Second cycle data are offered together with first cycle data, so as to recognise the changes registered, which are scarce in relation to the variations observed in the assessment of surface water bodies, as a consequence, in this case, of the greater influence of groundwater flow inertia.

As in the case of the first cycle, almost all water bodies classified by these plans have received a diagnosis of their chemical and quantitative status, without appreciating remarkable differences in the overall assessment.

The most common problem preventing the achievement of good chemical status is the impact of pollution due to diffuse sources, exceeding in many areas the limits set out in the quality standards of Directive 91/676, concerning the protection of waters against pollution caused by nitrates from agricultural sources. In the case of the problems related to quantitative status, the basic cause is the intensive and ongoing abstraction of these resources. It is common that both problems (the qualitative and the quantitative) are associated in the same water bodies.



Map 9. Chemical status of groundwater bodies.
Striped areas represent areas of overlapping water bodies with different characteristics.



Map 10. Quantitative status of groundwater bodies.
Striped areas represent areas of overlapping water bodies with different characteristics.

Despite the fact that the scarce final variations shown in Figure 10 do not allow developments to be recognised, second cycle river basin management plans include an improved assessment of the quantitative status of groundwater bodies in relation to first cycle plans. Therefore, and particularly in those river basin districts with problems identified in that regard, the new quantitative assessment has been carried out considering all relevant criteria, such as water balance tests, surface flow tests, tests on groundwater dependent terrestrial ecosystems and saline intrusion tests, among others. It is reminded that the need to improve the analysis of these issues was pointed out by the European Commission in the assessment of first cycle plans.

4.12

Environmental objectives and exemptions

River basin management plans, as well as the objectives for meeting demands, which are assessed on the extent to which the established allocation of resources allows uses to be met while covering certain guarantee criteria, must also assess the extent to which generic objectives corresponding to good status and non-deterioration are met as provided in the national and Community regulations.

With the exception of the non-deterioration objective, mandatory since 2004, the other environmental objectives must be met before the end of 2015 (unless they are protected areas for which an earlier deadline is set out in the regulation by virtue of which they were established). However, general objectives required for water bodies, under certain circumstances, may be subject to deadline extension, to the definition of less stringent environmental objectives (LSO) or it may even be possible to accept new physical modifications of water bodies which prevent the achievement of the aforementioned general environmental objectives.

Tables included below for surface water bodies (Table 35) and for groundwater bodies (Table 36) offer comparative information on the time limit for achieving the good status objective and, where appropriate, information on the use of less stringent environmental objectives.

Regarding surface water bodies, there are no remarkable changes regarding the objectives established in first cycle river basin management plans; only the expectation of compliance is slightly reduced in the year 2015.

RBD	Cycle	Number of SWB	Horizon of achievement of good status (accumulated)								SWB with LSO	
			2015		2021		2027 or beyond		Unknown			
			Number	%	Number	%	Number	%	Number	%	Number	%
COR	1st	138	96	69.6	138	100	138	100	0	0	0	0
	2nd		98	71	134	97.1	138	100	0	0	0	0
COC	1st	293	253	86.3	290	99	293	100	0	0	0	0
	2nd		249	85	283	96.6	286	97.6	4	1.4	3	1
GAL	1st	462	397	85.9	451	97.6	455	98.5	0	0	7	1.5
	2nd	466	357	76.6	454	97.4	466	100	0	0	0	0
MIÑ	1st	278	232	83.5	247	88.8	275	98.9	0	0	3	1.1
	2nd	279	212	76	245	87.8	279	100	0	0	0	0
DUE	1st	710	293	41.3	299	42.1	627	88.3	0	0	83	11.7
	2nd	709	214	30.2	349	49.2	643	90.7	0	0	66	9.3
TAJ	1st	324	228	70.4	262	80.9	296	91.4	10	3.1	18	5.6
	2nd	323	209	64.7	265	82.0	299	92.6	6	1.9	18	5.6
GDN	1st	313	88	28.1	168	53.7	312	99.7	1	0.3	0	0
	2nd	316	93	29.4	201	63.6	316	100	0	0	0	0
TOP	1st	68	28	41.2	35	51.5	56	82.4	12	17.6	0	0
	2nd		27	39.7	41	60.3	68	100	0	0	0	0
GDQ	1st	443	299	67.5	391	88.3	434	98	0	0	9	2
	2nd	446	256	57.4	363	81.4	398	89.2	25	6	23	5.2
GYB	1st	97	40	41.2	51	52.6	79	81.4	17	17.5	1	1
	2nd		40	41.2	69	71.1	97	100	0	0	0	0
CMA	1st	175	137	78.3	155	88.6	168	96	0	0	7	4
	2nd	177	102	57.6	151	85.3	168	94.9	2	1.1	7	4
SEG	1st	114	58	50.9	94	82.5	114	100	0	0	0	0
	2nd		64	56.1	94	82.5	114	100	0	0	0	0
JUC	1st	349	152	43.6	186	53.3	349	100	0	0	0	0
	2nd		122	35	150	43	349	100	0	0	0	0
EBR	1st	821	552	67.2	552	67.2	626	76.2	183	22.3	12	1.5
	2nd	823	560	68.0	607	73.8	789	95.9	22	2.7	12	1.5

Table 35. Horizon of achievement of good status regarding surface water bodies.

Comparison between estimations corresponding to both planning cycles.

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

RBD	Cycle	Number of SWB	Horizon of achievement of good status (accumulated)								SWB with LSO	
			2015		2021		2027 or beyond		Unknown			
			Number	%	Number	%	Number	%	Number	%	Number	%
CAT	1st	346	195	56.4	197	56.9	346	100	0	0	0	0
	2nd		126	36.4	160	46.2	295	85.3	0	0	51	14.7
BAL	1st	172	73	42.4	73	42.4	73	42.4	99	57.6	0	0
	2nd	171	132	77.2	132	77.2	132	77.2	39	22.8	0	0
MEL	1st	4	3	75	4	100	4	100	0	0	0	0
	2nd		3	75	4	100	4	100	0	0	0	0
CEU	1st	3	2	66.7	3	100	3	100	0	0	0	0
	2nd		2	66.7	3	100	3	100	0	0	0	0
LAN (*)	1st	6	4	66.7	4	66.7	4	66.7	2	33.3	0	0
	2nd		6	100	6	100	6	100	0	0	0	0
FUE (*)	1st	5	5	100	5	100	5	100	0	0	0	0
	2nd	6	6	100	6	100	6	100	0	0	0	0
GCA (*)	1st	6	5	83.3	5	83.3	5	83.3	1	16.7	0	0
	2nd	8	8	100	8	100	8	100	0	0	0	0
TEN (*)	1st	11	11	100	11	100	11	100	0	0	0	0
	2nd	8	8	100	8	100	8	100	0	0	0	0
GOM (*)	1st	4	2	50	2	50	2	50	2	50	0	0
	2nd		4	100	4	100	4	100	0	0	0	0
LPA (*)	1st	5	5	100	5	100	5	100	0	0	0	0
	2nd		5	100	5	100	5	100	0	0	0	0
HIE (*)	1st	3	3	100	3	100	3	100	0	0	0	0
	2nd		3	100	3	100	3	100	0	0	0	0
TOTAL	1st	5,150	3,161	61.4	3,631	70.5	4,683	90.9	327	6.3	140	2.7
	2nd	5,162	2,906	56.3	3,745	72.5	4,884	94.6	98	1.9	180	3.5

cont. Table 35. Horizon of achievement of good status regarding surface water bodies.

Comparison between estimations corresponding to both planning cycles.

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

Map 11. Horizon of achievement of good status regarding surface water bodies.

There are 98 surface water bodies without established objectives. This value is lower than the 327 water bodies without environmental objectives included in the first cycle river basin management plans.

Figure 11 shows the development towards achieving the environmental objectives for surface water bodies each river basin management plan offers for those cycles designed so far. The reprogramming established by the second cycle river basin management plan does not introduce major amendments in relation to the contents of first cycle plans, even though the justifications for the deferral on objectives have been improved and the number of water bodies for which less stringent environmental objectives are set has slightly increased, from 140 in first cycle plans (2.7%) to 180 (3.5%). This exemption has been particularly applied by the Douro river basin district (66), the river basin districts of Catalonia (51), Guadalquivir (23), Tagus (18) and Ebro (12). The graph shows the group of those not reaching the good status, which also includes those water bodies with no objectives set.

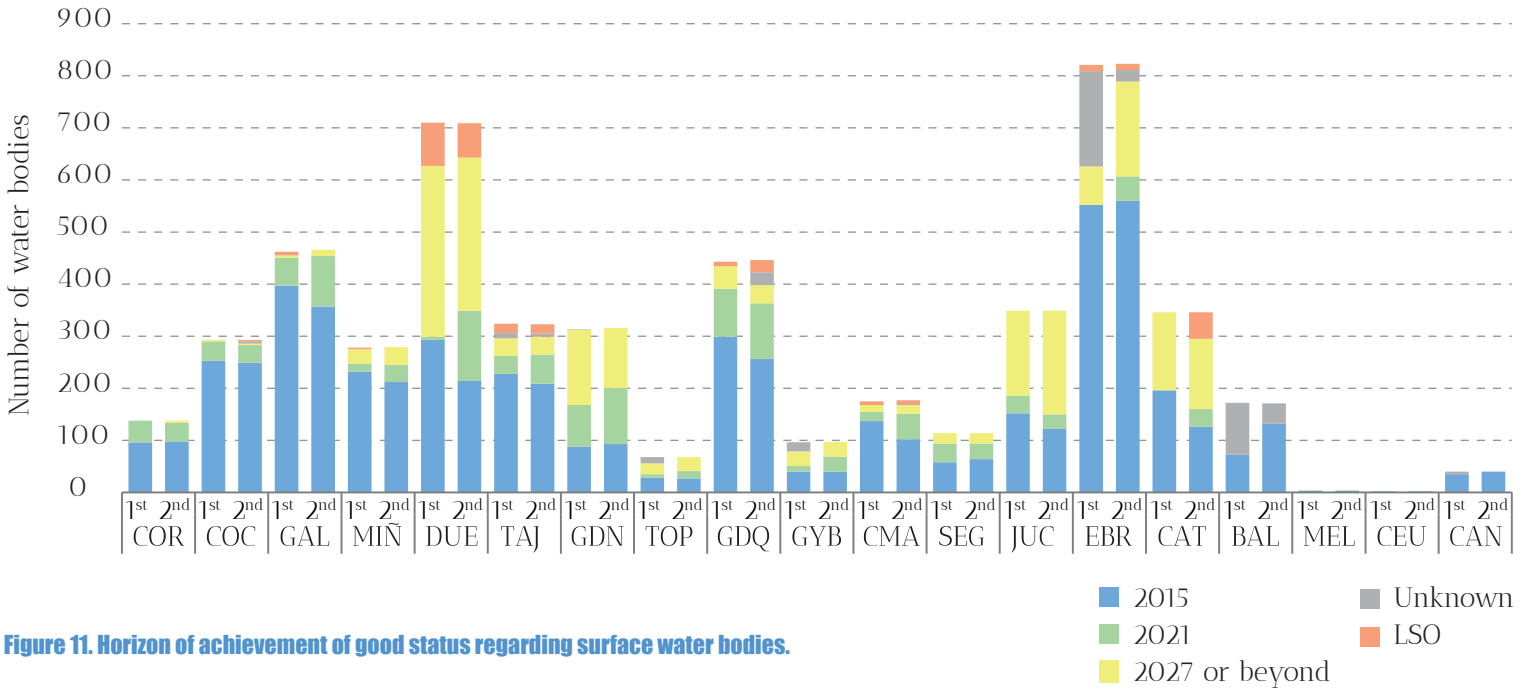


Figure 11. Horizon of achievement of good status regarding surface water bodies.

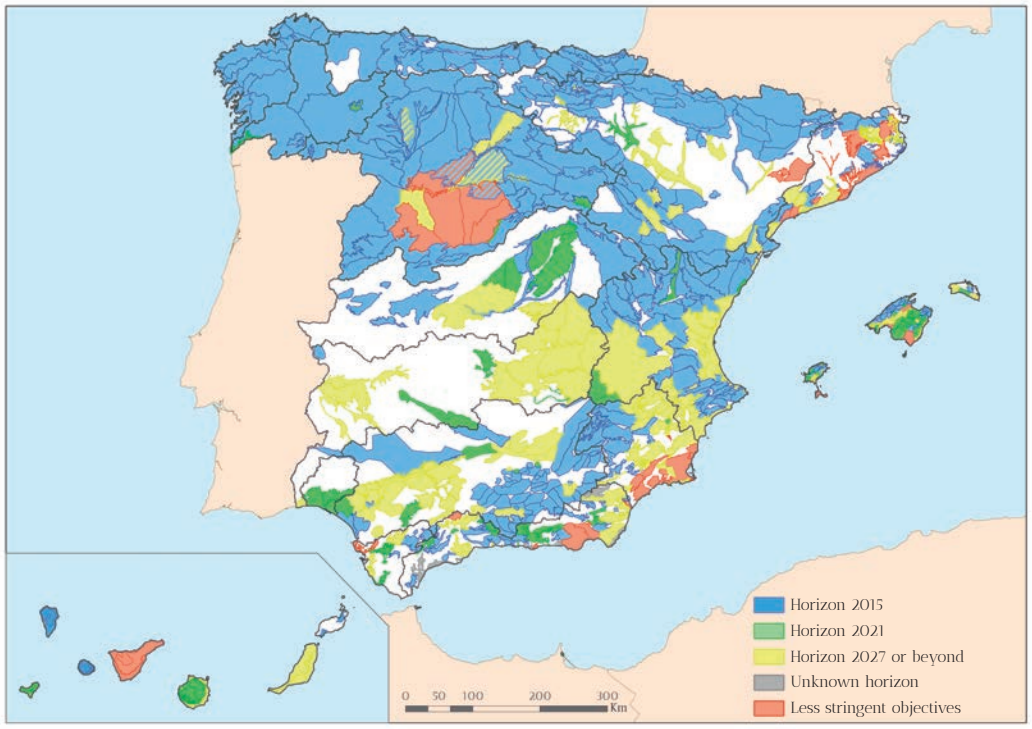
RBD	Cycle	Number of GWB	Horizon of achievement of good status (accumulated)								GWB with LSO	
			2015		2021		2027 or beyond		Unknown			
			Number	%	Number	%	Number	%	Number	%	Number	%
COR	1st	28	27	96.4	28	100	28	100	0	0	0	0
	2nd	20	19	95	20	100	20	100	0	0	0	0
COC	1st	20	20	100	20	100	20	100	0	0	0	0
	2nd		20	100	20	100	20	100	0	0	0	0
GAL	1st	18	18	100	18	100	18	100	0	0	0	0
	2nd		18	100	18	100	18	100	0	0	0	0
MIÑ	1st	6	5	83.3	6	100	6	100	0	0	0	0
	2nd		4	66.7	6	100	6	100	0	0	0	0
DUE	1st	64	47	73.4	47	73.4	50	78.1	0	0	14	21.9
	2nd		48	75	50	78.1	56	87.5	0	0	8	12.5
TAJ	1st	24	18	75	22	91.7	24	100	0	0	0	0
	2nd		18	75	22	91.7	24	100	0	0	0	0
GDN	1st	20	5	25	5	25	20	100	0	0	0	0
	2nd		3	15	7	35	20	100	0	0	0	0

RBD	Cycle	Number of GWB	Horizon of achievement of good status (accumulated)								GWB with LSO	
			2015		2021		2027 or beyond		Unknown			
			Number	%	Number	%	Number	%	Number	%	Number	%
TOP	1st	4	2	50	4	100	4	100	0	0	0	0
	2nd		1	25	4	100	4	100	0	0	0	0
GDQ	1st	60	35	58.3	48	80	60	100	0	0	0	0
	2nd	86	54	62.8	59	68.6	86	100	0	0	0	0
GYB	1st	14	7	50	7	50	12	85.7	0	0	2	14.3
	2nd		5	35.7	9	64.3	12	85.7	0	0	2	14.3
CMA	1st	67	41	61.2	52	77.6	62	92.5	0	0	5	7.5
	2nd		23	34.3	40	59.7	54	80.6	8	11.9	5	7.5
SEG	1st	63	17	27	19	30.2	53	84.1	0	0	10	15.9
	2nd		17	27	19	30.2	55	87.3	0	0	8	12.7
JUC	1st	90	50	55.6	57	63.3	87	96.7	0	0	3	3.3
	2nd		49	54.4	53	58.9	90	100	0	0	0	0
EBR	1st	105	82	78.1	82	78.1	103	98.1	0	0	2	1.9
	2nd		81	77.1	82	78.1	103	98.1	0	0	2	1.9
CAT	1st	39	18	46.2	18	46.2	39	100	0	0	0	0
	2nd	37	15	40.5	15	40.5	25	100	0	0	12	32.4
BAL	1st	90	64	71.1	75	83.3	87	96.7	0	0	3	3.3
	2nd	87	33	37.9	63	72.4	83	95.4	0	0	4	4.6
MEL	1st	3	0	0	3	100	3	100	0	0	0	0
	2nd		0	0	3	100	3	100	0	0	0	0
CEU	1st	1	0	0	1	100	1	100	0	0	0	0
	2nd		1	100	1	100	1	100	0	0	0	0
LAN (*)	1st	1	0	0	0	0	0	0	1	100	0	0
	2nd	2	2	100	2	100	2	100	0	0	0	0
FUE (*)	1st	4	0	0	4	100	4	100	0	0	0	0
	2nd		0	0	0	0	4	100	0	0	0	0
GCA (*)	1st	10	0	0	10	100	10	100	0	0	0	0
	2nd		0	0	2	20	10	100	0	0	0	0
TEN (*)	1st	4	0	0	0	0	0	0	0	0	4	100
	2nd		0	0	0	0	0	0	0	0	4	100
GOM (*)	1st	5	3	60	3	60	3	60	2	40	0	0
	2nd		5	100	5	100	5	100	0	0	0	0
LPA (*)	1st	5	0	0	0	0	0	0	5	100	0	0
	2nd		4	80	4	80	5	100	0	0	0	0
HIE (*)	1st	3	0	0	3	100	3	100	0	0	0	0
	2nd		0	0	3	100	3	100	0	0	0	0
TOTAL	1st	748	459	61.4	532	71.1	697	93.2	8	1.1	43	5.7
	2nd	762	420	55.1	507	66.5	709	93.0	8	1.0	45	5.9

Table 36. Horizon of achievement of good status regarding groundwater bodies.

Comparison between estimations corresponding to both planning cycles..

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.



Map 12. Horizon of achievement of good status regarding groundwater bodies.

Striped areas represent areas of overlapping water bodies with different characteristics.

There are no major changes in the programming of objectives for groundwater bodies, as shown in Table 36.

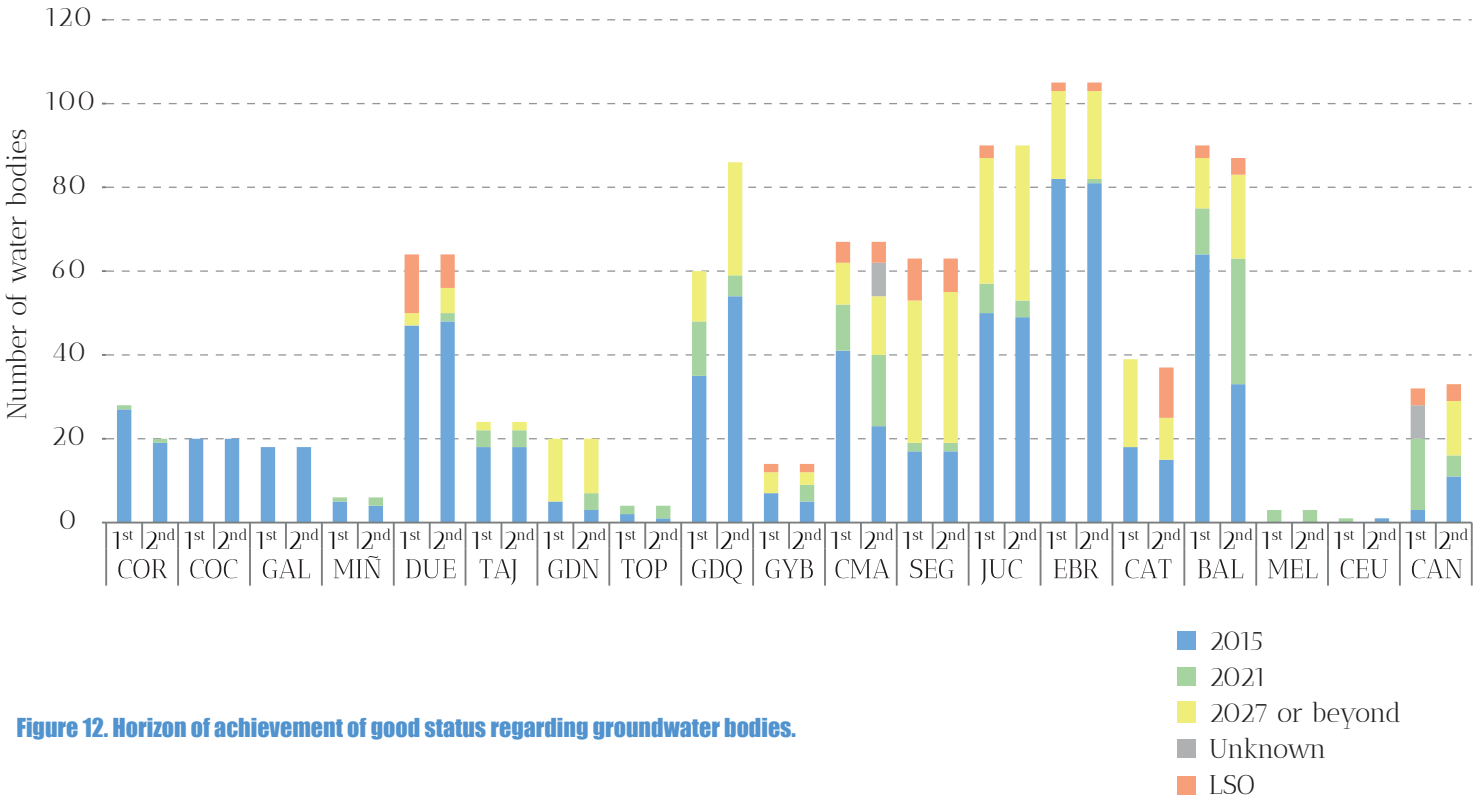
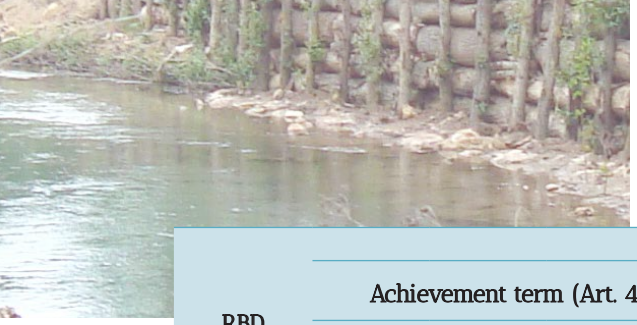


Figure 12. Horizon of achievement of good status regarding groundwater bodies.

Figure 12 shows the comparison in programming the achievement of objectives for groundwater bodies in each one of the river basin districts between both planning cycles. It is obvious that some river basin districts, such as the Andalusian Mediterranean Basins, Jucar river basin district, river basin district of Catalonia or the Balearic Islands, acknowledge delays in programming. In general, such delays are caused by a better characterisation of the problems instead of being caused by new pressure sources involving an additional deterioration.

Any exemption to the achievement of the general objectives, usually involving meeting the deadline, must be documented in river basin management plans, both for surface water bodies (Table 35) and groundwater bodies (Table 36). Additionally, Table 37 details the number of water bodies, whether surface or groundwater, for which the different plans analysed herein set out the use of any of the three types of exemption already mentioned: term, less stringent environmental objective or new modification.

Plans presented offer a duly detailed explanation by means of individual data sheets for each water body (instance foreseen in Articles 4.4 and 4.5 of the WFD) or action (instance foreseen for new modifications set forth in Article 4.7 of the WFD), of the exemptions to the achievement of environmental objectives.



RBD	Exemptions to environmental objectives											
	Achievement term (Art. 4.4 WFD)				Less stringent environmental objective (Art. 4.5 WFD)				New modifications (Art. 4.7 WFD)			
	N° water bodies 1st cycle		N° water bodies 2nd cycle		N° water bodies 1st cycle		N° water bodies 2nd cycle		N° water bodies 1st cycle		N° water bodies 2nd cycle	
	SWB	GWB	SWB	GWB	SWB	GWB	SWB	GWB	SWB	GWB	SWB	GWB
COR	42	1	40	1	0	0	0	0	0	0	1(*)	0
COC	40	0	41	0	0	0	3	0	2	1	1	1
GAL	58	0	109	0	7	0	0	0	0	0	0	0
MIÑ	43	1	67	2	3	0	0	0	0	0	0	0
DUE	334	3	429	8	83	14	66	8	0	0	11	0
TAJ	68	6	36	6	18	0	18	0	0	0	0	0
GDN	224	15	223	17	0	0	0	0	0	0	0	0
TOP	28	2	41	3	0	0	0	0	0	0	1	0
GDQ	135	25	167	32	9	0	23	0	0	0	12	2
GYB	39	5	57	7	1	2	0	2	0	0	0	0
CMA	31	21	68	39	7	5	7	5	0	0	0	0
SEG	56	36	50	38	0	10	0	8	0	0	3	0
JUC	197	37	227	41	0	3	0	0	0	0	25	0
EBR	74	21	251	22	12	2	12	2	0	0	7	0
CAT	151	21	169	10	0	0	51	12	0	0	0	0
BAL	0	23	39	50	0	3	0	4	0	0	0	0
MEL	1	3	1	3	0	0	0	0	0	0	2	0
CEU	1	1	1	0	0	0	0	0	0	0	2	0
LAN (**)	0	0	0	0	0	0	0	0	0	0	1	0
FUE (**)	0	4	0	4	0	0	0	0	0	0	0	0
GCA (**)	0	10	0	8	0	0	0	0	0	0	1	0
TEN (**)	0	0	0	1	0	4	0	4	0	0	2	0
GOM (**)	0	0	0	0	0	0	0	0	0	0	0	0
LPA (**)	0	0	0	1	0	0	0	0	0	0	0	0
HIE (**)	0	3	0	0	0	0	0	0	0	0	0	0
TOTAL	1,522	238	2,016	293	140	43	180	45	2	1	69	3

Table 37. Exemptions to achievement the environmental objectives. Comparison between planning cycles.

(*) Action regarding the Lekubaso stream, which currently does not qualify as water body. The new reservoir will constitute a heavily modified or artificial water body.

(**) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

During the second planning cycle, it has been attempted to reduce the exemptions set out in Article 4.5 as much as possible, which involves the definition of less stringent environmental objectives, and therefore, the exemption to the basic objectives established by the WFD. In many cases, deadline extensions have been granted until 2027 or 2033 (due to natural conditions, as set out in Article 4.4.), if they propose the necessary

measures so that WFD may be finally achieved without imposing other less stringent environmental objectives. That was the case, for example, of different groundwater bodies in the Douro, Jucar, Segura, Guadiana and Guadalquivir river basin districts, with problems that arose due to nitrate pollution, and a trend that means that good status achievement values may not be reached until horizons set after year 2027.

The consideration granted to the exemptions by the new modifications set out in Article 4.7 of the WFD is particularly relevant in the plans submitted. The previous Tables lack virtually any information on the number of water bodies affected by Article 4.7 as regards the first cycle plan. Even though the corresponding actions and their effects were considered in those plans, exemptions were not reported to a water body level, so it was decided not to include herein a heterogeneous consideration on the number of water bodies affected. However, for the second planning cycle, and taking into consideration the remarks made by the European Commission, a Technical Instruction of the Directorate-General for Water was adopted for the analysis of the compliance with the requirements of said Article 4.7 in those actions planned which may lead to new modifications. All plans considering this type of cases have included data sheets in which such compliance analysis is detailed, taking into account those water bodies falling into such exemption.

In particular, new modifications of water bodies to be developed during the 2015-2021 planning cycle in accordance with the programme of measures, which are described in the relevant plans and also including the justification proven by means of the aforementioned exemption analysis set out in Article 4.7, are the ones listed in Table 38.

River Basin Districts	Actions considered in second cycle plans involving the application of the exemption by virtue of Article 4(7) of the WFD	Type and number of affected water bodies
Eastern Cantabrian	Regulation increase in the supply system for the Bilbao Bizkaia Water Consortium	Lekubaso stream
Western Cantabrian	Infrastructure Master Plan for the increase of the operating capacity in the Multi-Purpose Port of Santander	AT-HM (1)
	Alteration of the level of the groundwater body 012.012 (Coalmining District of Asturias) by means of flooding of mines upon cessation of operations.	SUB (1)
Douro	Villafría Dam and De Las Cuevas Dam. Valdavia River IA	R-NAT (1)
	Castrovido Dam	R-NAT (1)
	Aranzuelo Dam. Aranzuelo IA	R-NAT (2)
	Cueza 1 Dam, Cueza 2 Dam and Fuentearriba Dam	R-HM (2)
	Rial Dam	R-NAT (1)
	Ciguiñuela Dam	R-NAT (1)
	Cerrato Valley Pond and Cerrato Valley IA	R-NAT (1)
	Dor Dam. Arandilla River IA	R-NAT (2)
Tinto, Odiel and Piedras	Alcolea Dam	R-NAT (1)

Table 38. Exemptions for the achievement of objectives in 2021 analysed under the requirements of Article 4(7) of the WFD.

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

River Basin Districts	Actions considered in second cycle plans involving the application of the exemption by virtue of Article 4(7) of the WFD	Type and number of affected water bodies
Guadalquivir	Castillo de Montizón Dam	R-NAT (2)
	San Calixto Dam	R-HM (1)
	Drainage works for the deepening of the navigation canal of the Port of Seville in the estuary of the Guadalquivir river	AT-HM (5)
	Enlargement of the Agrio Reservoir	R-NAT (2) R-HM (2)
	Actions necessary for the commissioning of the Marquesado Mines	SUB (2)
Segura	New infrastructure of the new dock of Cartagenta (Gorguel Dock)	AC-HM (2)
	Enlargement of the Camarillas Dam	R-NAT (1)
Jucar	Alternative to the Marquesado Dam. Regulation of the Bajo Magro River	R-NAT (3)
	Geomorphological restoration of the Estany of Cullera	AC-NAT (1)
	Restoration of the river morphology and improvement of the vegetation cover in the final section of the Valdemembra river	R-HM (1)
	Railway bridge and northern railway connection of the Port of Castellón	AC-HM (1)
	Maintenance of draughts of those ports managed by the Autonomous Community of Valencia	AC-NAT (16) AC-HM (1)
	Enlargement of the MSC terminal by the East	AC-HM (1)
	Drainage works for the Príncipe Felipe dock and improvement of the draughts in the quay	
	Conditioning of the Southern quay of the Port of Valencia	
	Drainage works of the Levante and Llovera quays and improvement of draughts	
	Drainage works of the new dock and entrance canal for the enlargement of the Port of Valencia	
	Filling container quay for the enlargement of the Port of Valencia	
	Cruise ship quay and bottom dock VPA for the enlargement of the Port of Valencia	
	Drainage works for the entrance canal of the Port of Gandía	AC-HM (1)
	Mooring area Serpis Quay 2 in the Port of Gandía	
Ebro	Mularroya reservoir in Grío river and Territorial Restoration Plan	R-NAT (1)
	Albagés reservoir in Sed river and Territorial Restoration Plan	R-NAT (1)
	Enciso reservoir in Cidacos river and Territorial Restoration Plan	R-NAT (1)
	Biscarrués reservoir in the Gállego river	R-NAT (2)
	Soto-Terroba Reservoir	R-NAT (1)
	San Pedro Manrique reservoir	R-NAT (1)
Melilla	Enlargement of the Port of Melilla, preliminary environmental studies and other	AC-NAT (1) AC-HM (1)
Ceuta	Construction of protection infrastructures: enlargement works of the Port of Ceuta (2nd phase)	AC-NAT (1) AC-HM (1)
Lanzarote (*)	Enlargement of the Port of Playa Blanca	AC-NAT(1)
Gran Canaria (*)	Enlargement of the Port of Agaete	AC-NAT (1)
Tenerife (*)	Construction of the Port of La Cruz	AC-NAT (1)
	Construction of the Port of Fonsalía	AC-NAT (1)

cont. Table 38. Exemptions for the achievement of objectives in 2021 analysed under the requirements of Article 4(7) of the WFD.

(*) In the case with the river basin districts of the Canary Islands, provisional data from the second cycle are reproduced pending final approval of the river basin management plan.

4.13

Recovery of the costs of water services

The study of the recovery of the costs is one of the most relevant aspects in the review of river basin management plans since it is one of the main implementation strategies of the European water policy and therefore, as explained in section 1.6 herein, it is one of the aspects highlighted in the Association Agreement Spain-European Union, for the use of Community funds during the programming period 2014-2020.

In particular, the aforementioned Agreement requires that second cycle water river basin management plans contain a homogeneous estimation of the degree of the recovery of the costs of water services, including those environmental costs3 related to the provision of said service. Likewise, regardless of the analysis of the recovery of the costs, river basin management plans must include an estimate of the costs of the resource under ordinary supply conditions, according to the planning scenario foreseen for 2021.

Water services are, according to definition 38 of Article 2 of the WFD, *all services which provide, for households, public institutions or any economic activity: a) abstraction, impoundment, storage, treatment and distribution of surface water or groundwater, b) waste water collection and treatment facilities which subsequently discharge into surface water.*

According to the foregoing, water administration and monitoring works, such as works for the maintenance of the Water Registry or monitoring networks, as well as many other activities developed by river basin authorities, do not fall within the water service category for the purposes of the calculation of the recovery of the costs and recovery level.

Table 11 herein shows the chapter of the Dossier where this mandatory content is developed in each one of the river basin management plans.

In order to guarantee the harmonisation of calculation criteria and homogenisation and comparability of results, the different river basin authorities involved have been provided with guidance documents prepared by the DGA, based on the works of the Common Implementation Strategy of the WFD, promoted by the European Commission. The results of the workshop on financial aspects to be considered in second cycle river basin management plans, developed in Brussels in October 2013, have been especially taken into account.

Under these conditions, Spanish second cycle river basin management plans offer the estimate of the costs of water services as set out in Table 39. The information corresponding to the Canary Islands is not included.

[3] The environmental cost is the additional cost which has not been previously internalised and which must be undertaken in order to recover the good status or good potential of water bodies, eliminating the environmental deterioration (gap) caused by the water service for which the recovery level is assessed.

The total cost includes the non-internalised environmental cost, estimated in 1,859.56 million Euros; however, it does not include the cost of the resource. Out of this environmental cost, amounting to 15% of the total cost, 43% corresponds to urban use, 41% to agricultural use and 16% to industrial use.

The environmental cost is valued as the cost that planned measures to achieve the environmental objectives. Plans also include an estimation of the way in which those individuals holding different water resources contribute to the recovery of these costs which, at least initially, are covered by public funding.

Among the different recovery instruments, it can be found taxes for the use of water services to be collected by the General State Administration, through river basin authorities, and regional and local taxes, which are collected by means of different mechanisms. In the case of self-services, income is equivalent to the cost. In accordance with the criteria set out, income for water services in Spain comes up to 8,575.07 million Euros per year.

As a result of the work carried out, a certain dispersion of results regarding the recovery level of financial costs (those which do not include environmental costs) is noticeable, which is even more evident when considering the recovery level of total costs, as a consequence of a different internalisation level of environmental costs.

The final results offered by river basin management plans in relation to the recovery percentage of the service cost are summarised in Table 40.

According to the commitments undertaken by virtue of the Association Agreement, once all relevant information is collected and processed for the 25 Spanish river basin districts, it is necessary to study the appropriateness of the recovery instruments currently available so as to assess their usefulness or the achievement of planning objectives and, as appropriate, review them in the future. In any case, it must be made clear that these new second cycle river basin management plans do not amend the current economic and financial regime because, among other reasons, the regulation of such concepts is constitutionally bonded to the law and therefore, does not fall within the regulation competences of royal decrees approving river basin management plans.

River Basin District	Cost of water use (millions €)			Total
	Urban	Agricultural	Industrial	
Eastern Cantabrian	248.87	6.43	219.71	475.01
Western Cantabrian	322.59	26.60	170.55	519.74
Galicia-Coast	232.66	8.99	137.64	379.29
Miño-Sil	147.76	4.78	24.11	176.65
Douro	375.12	730.11	177.79	1,283.02
Tagus	819.90	107.29	218.90	1,146.09
Guadiana	246.99	219.00	5.22	471.21
Tinto, Odiel and Piedras	56.67	35.34	26.28	118.29
Guadalquivir	581.53	393.69	69.08	1,044.30
Guadalete and Barbate	118.14	35.15	19.36	172.65
Andalusian Mediterranean Basins	402.13	273.95	60.33	736.41
Segura	328.48	361.90	63.83	754.21
Jucar	552.66	546.61	168.44	1,267.71
Ebro	1,017.99	874.35	350.30	2,242.64
Catalonia	1,100.35	27.13	437.25	1,564.73
Balearic Islands	138.77	51.90	10.69	201.36
Melilla	31.15	0.00	0.00	31.15
Ceuta	38.56	0.00	0.00	38.56
TOTAL	6,760.32	3,703.22	2,159.48	12,623.02

Table 39. Equivalent annual cost of water services in Spain.

Thus, any mention in this regard that may be contained in river basin management plans, concerning criteria or proposals for the exemption of the application of the recovery principle for the cost of water services due to justified circumstances, must be considered as a preliminary proposal. For the materialisation, as the case may be, of the aforementioned proposal, it will be necessary to develop the mechanisms set out in Article 111 bis.3 of the TRLA, requiring a resolution of the competent authority after the preliminary and justified report prepared by the relevant river basin authority. Within the scope of the General State Administration, such resolution must be issued by the MITECO.

RBD	Cost Recovery Index (%)							
	Urban use		Agricultural use		Industrial use		Total Uses	
	Financial	Total	Financial	Total	Financial	Total	Financial	Total
COR	69.9	63.4	85.1	84.7	78.7	70.8	74.1	67.1
COC	78.4	66.3	89.6	82.6	94.7	94.1	84.9	76.3
GAL	40.7	40.7	0.0	0.0	26.6	26.6	34.6	34.6
MIÑ	36.1	33.1	82.2	76.4	37.1	34.1	37.5	34.4
DUE	50.4	46.0	70.1	45.5	77.7	71.7	64.5	49.3
TAJ	94.5	84.8	66.6	66.6	91.4	76.4	91.0	81.5
GDN	80.6	57.9	80.1	59.8	82.8	52.8	80.3	58.7
TOP	94.8	80.2	72.2	55.5	96.5	86.8	89.0	74.3
GDQ	86.2	79.3	76.6	65.8	88.8	75.3	82.9	74.0
GYB	97.2	91.4	81.5	65.8	97.3	91.7	94.4	86.2
CMA	93.7	74.1	83.8	67.2	96.2	87.6	90.2	72.6
SEG	92.4	70.7	74.6	45.4	77.4	57.5	83.5	57.5
JUC	86.3	82.6	81.4	73.0	85.8	79.3	84.2	78.0
EBR	86.7	75.5	81.5	72.1	91.9	63.6	85.3	72.3
CAT	76.7	68.2	86.3	62.3	78.0	67.0	77.2	67.8
BAL	85.9	67.3	93.6	69.7	95.8	70.3	88.3	68.1
MEL	40.5	40.3	--	--	--	--	40.5	40.3
CEU	69.3	67.8	--	--	--	--	69.3	67.8
TOTAL	80.2	70.7	78.1	62.1	80.4	69.3	79.7	67.9

Table 40. Recovery index for total and financial costs (including environmental costs) for water uses.

05

Programmes of measures. Investments foreseen for River Basin Management Plans

Programmes of measures are a set of actions to be implemented in river basin districts so that a desired situation can be achieved while achieving the relevant environmental and socioeconomic objectives.

Considering the special characteristics of Spanish hydrological planning, measures can be divided into five groups:

a) Measures required by the WFD aimed at the achievement of environmental objectives.
b) Investments for the improvement of the offer of resources aimed at meeting demands.
c) Measures for mitigating the effects of extreme hydrometeorological phenomena (floods and droughts).
d) Governance measures and measures for the improvement of knowledge.
e) Other investments required by the different uses associated to water.

"Measures required by the WFD" are those set out in Article 11 of the aforementioned Directive aimed at the achievement of environmental objectives set by means of this EU regulation. Their organisation and differentiation is based on Community requirements and, in particular, on the criteria established in the guidance document for reporting (EC, 2016).

These measures can be classified as basic or complementary measures. Basic measures, of mandatory consideration, are the instrument to achieve minimum requirements that must be accomplished by each river basin district. Complementary measures are additionally applied to basic measures in order to achieve the environmental objectives or to reach an extra protection in water bodies, only if the realization of basic measures is not enough to achieve environmental objectives.

"Investments for the improvement of the offer of resources" are not measures required by Community regulations but are necessary given the particular characteristics of Spanish hydrological planning. Such actions are aimed at increasing the resources available by means of regulation and transportation works so as to meet the objectives of water demand as provided by Spanish legislation (Article 40.1 of the TRLA).

Those measures aiming to "mitigate the effects of extreme hydrometeorological phenomena" have also been differentiated. This group or measures also includes those investments required by Flooding Risks Management Plans and follow-up and updating measures for Special Plans for Droughts. Even though those measures have been included in a separate group, they cannot be considered as strictly different from the ones required by the WFD since some synergies or links with the hydrological planning can be found, due to their effect on the water bodies and on the offer of resources.

"Governance measures and measures for the improvement of knowledge" include investments for the improvement of the operating capacity of river basin authorities when processing authorisations or concessions, keeping the Water Registry updated, supporting monitoring programmes for the status of waters and performing the corresponding studies. They are measures differentiated from the other measures but clearly related to the purposes of the previous groups since they improve the managerial and administrative capacity of river basin authorities.

Some river basin management plans have included information, in an explanatory and heterogeneous manner, on the cost of other investments foreseen in the time horizons of this programming in relation to sectoral policies (on power, irrigation, transportation...) affecting the evolution of the status of water bodies. In order to separate them from the other, they have been grouped into a category called "Other investments required by the different uses associated to water". Regarding the environmental objectives, these investments involve certain actions that may lead to the occurrence

of new pressures that may be analysed by river basin management plans in order to verify their feasibility. In relation to the offer of resources, the aforementioned investments usually lead to the increase of demands, which may also require a specific analysis in the co-rresponding management plans regarding the allocation and reservation of resources.

Investment programmes included in first cycle river basin management plans did not allow the effective contribution of measures to reduce the gap regarding the achievement of environmental objectives or regarding the guarantee improvement based on water demands to be clearly established. Therefore, and also taking into consideration the aforementioned guidance

Type of measure		Amount 2016 - 2021	Amount 2022 - 2027	Amount 2028 - 2033	Total (million €)	N° of measures
Key	Description					
1	Reduction of point source pollution	7,442.55	3,826.52	340.82	11,609.90	4,007
2	Reduction of diffuse source pollution	324.61	251.35	96.62	672.58	348
3	Reduction of pressure due to water abstractions	2,807.63	2,820.17	2,687.25	8,315.06	496
4	Reduction of morphological pressures	478.41	740.74	288.63	1,507.78	618
5	Reduction of hydrological pressures	54.87	9.73	45.29	109.89	113
6	Conservation and improvement of the structure and operation of water ecosystems	118.86	64.15	71.06	254.07	269
7	Measures not applicable over a specific pressure but on an identified impact	599.27	686.15	7.50	1,292.92	129
8	General measures to be applied on those sectors acting as determinants	8.58	1.04	0.00	9.61	18
9	Specific measures for the protection of drinking water not directly related to pressures and impacts	145.57	166.45	0.00	312.03	21
10	Specific measures for priority substances not directly related to pressures and impacts	30.05	0.79	0.00	30.84	16
11	Related to the governance improvement	874.15	637.60	98.67	1,610.42	1,482
12	Related to the increase of resources available	3,367.58	2,795.58	3,255.70	9,418.86	1,058
13	Prevention of floods	367.28	111.99	35.95	515.22	366
14	Protection against floods	635.09	744.85	383.96	1,763.91	393
15	Preparation against floods	131.78	12.17	0.00	143.95	197
16	Recovery and review after floods	23.04	3.30	0.00	26.34	101
17	Other flood risk management measures	27.53	0.00	0.00	27.53	3
18	No actions for the reduction of flood risk at areas at potential risk of flooding	0.00	0.00	0.00	0.00	0
19	Measures for the meeting of other uses related to water	2,451.27	2,035.12	3,084.87	7,571.26	574
TOTAL		19,888.12	14,907.71	10,396.33	45,192.15	10,209

Table 41. Investment in million Euros considered by river basin management plans for each type of measure.

Information on the Canary Islands is not included. Information on CAT has been obtained from the version subject to public consultation.

document for the 2016 report (EC, 2016), a database system including 19 types of measures has been prepared; such a system allows summarised results to be obtained after collecting all relevant information in a harmonised manner, as shown in Table 41.

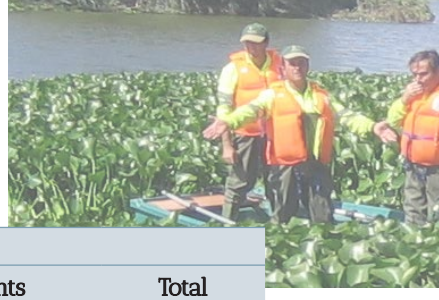
Measures falling into types 1 to 10 correspond directly to implementation measures of the Water Framework Directive related to the issues of achieving environmental objectives. Likewise, measures falling into types 13 to 18 correspond to the implementation of the Directive for the Assessment and Management of Flood Risks, regarding flood-related problems (extreme phenomena). Additionally, governance problems are covered with those measures falling into type 11. The objective for meeting demands is covered by investment falling into type 12. On the other hand, type 19 includes other parallel investment which, even though they are not measures directly associated to the Plan, have an impact on the evolution of water uses and determine the need for other types of measures among the aforementioned ones, such as river restoration, environmental adequation, etc.

These data are summarised in Table 42, covering the period 2016-2033, with the progression foreseen in Table 43. It is evident that the programming is specifically adjusted to the period until the end of 2021, the first horizon set for the updated planning and date on which these new river basin management plans must be reviewed in order to establish future plans corresponding to third planning cycle 2021-2027.

The total amount comes up to 45,192 million Euros to be invested in 18 years, which is limited to 37,621 million strictly taking into account hydrological planning measures necessary for achieving environmental, socioeconomic, and demand meeting objectives, pursued by means of this process.

RBD	N° of measures	Investment --> Environmental objectives	
		mill €	%
COR	403	713.69	43.97
COC	523	893.32	61.48
GAL	150	604.54	65.40
MIÑ	496	301.32	70.70
DUE	867	1,714.34	51.30
TAJ	991	2,595.29	79.13
GDN	703	1,181.35	46.74
TOP	163	179.55	17.75
GDQ	870	2,826.18	68.46
GYB	123	109.36	15.61
CMA	314	2,040.53	74.38
SEG	1,033	1,306.85	52.96
JUC	449	1,838.45	82.07
EBR	2,072	6,045.70	40.05
CAT	481	575.27	59.04
BAL	449	1,030.49	61.75
MEL	59	33.70	8.70
CEU	63	124.74	63.07
TOTAL	10,209	24,114.66	

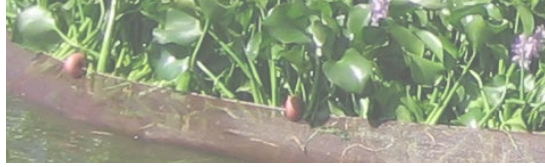
Table 42. Investment in million Euros considered by river basin management plans for each river basin district.



Investment								
Meeting demands		Extreme Phenomena		Knowledge and Governance		Other investments		Total
mill €	%	mill €	%	mill €	%	mill €	%	mill €
439.67	27.08	416.28	25.64	53.63	3.30	0.04	0.00	1,623.30
289.86	19.95	202.05	13.91	26.23	1.81	41.52	2.86	1,452.98
73.98	8.00	47.65	5.15	182.07	19.70	16.19	1.75	924.44
36.39	8.54	44.22	10.38	44.26	10.39	0.00	0.00	426.19
468.38	14.01	80.50	2.41	31.70	0.95	1,047.09	31.33	3,342.01
507.74	15.48	55.83	1.70	121.05	3.69	0.00	0.00	3,279.92
726.00	28.72	60.88	2.41	296.52	11.73	262.76	10.40	2,527.51
731.57	72.32	6.73	0.67	42.86	4.24	50.92	5.03	1,011.62
776.08	18.80	211.63	5.13	90.59	2.19	223.44	5.41	4,127.92
523.16	74.66	12.70	1.81	55.52	7.92	0.00	0.00	700.74
459.55	16.75	171.75	6.26	49.39	1.80	22.15	0.81	2,743.37
249.13	10.10	511.20	20.72	209.25	8.48	191.11	7.74	2,467.54
309.88	13.83	0.00	0.00	74.53	3.33	17.34	0.77	2,240.19
3,129.33	20.73	230.91	1.53	239.18	1.58	5,451.17	36.11	15,096.29
318.63	32.70	66.66	6.84	13.8	1.42	0.00	0.00	974.35
280.78	16.82	290.42	17.40	64.56	3.87	2.60	0.16	1,668.85
45.74	11.81	60.21	15.55	14.70	3.80	232.81	60.13	387.16
53.00	26.80	7.33	3.71	0.58	0.29	12.12	6.13	197.77
9,418.86		2,476.94		1,610.42		7,571.26		45,192.15

Type	Amount 2016 - 2021 (million €)	Amount 2022 - 2027 (million €)	Amount 2028 - 2033 (million €)	Total (million €)	%
Achievement of environmental objectives	12,010.40	8,567.09	3,537.17	24,114.66	53%
Meeting demands	3,367.58	2,795.58	3,255.70	9,418.86	21%
Management of extreme phenomena	1,184.72	872.31	419.92	2,476.94	5%
Knowledge and Governance	874.15	637.68	98.67	1,610.42	4%
TOTAL planning measures	17,436.85	12,872.58	7,311.46	37,620.88	- -
Other investments	2,451.27	2,035.12	3,084.87	7,571.26	17%

Table 43. Programming of investments foreseen in river basin management plans.



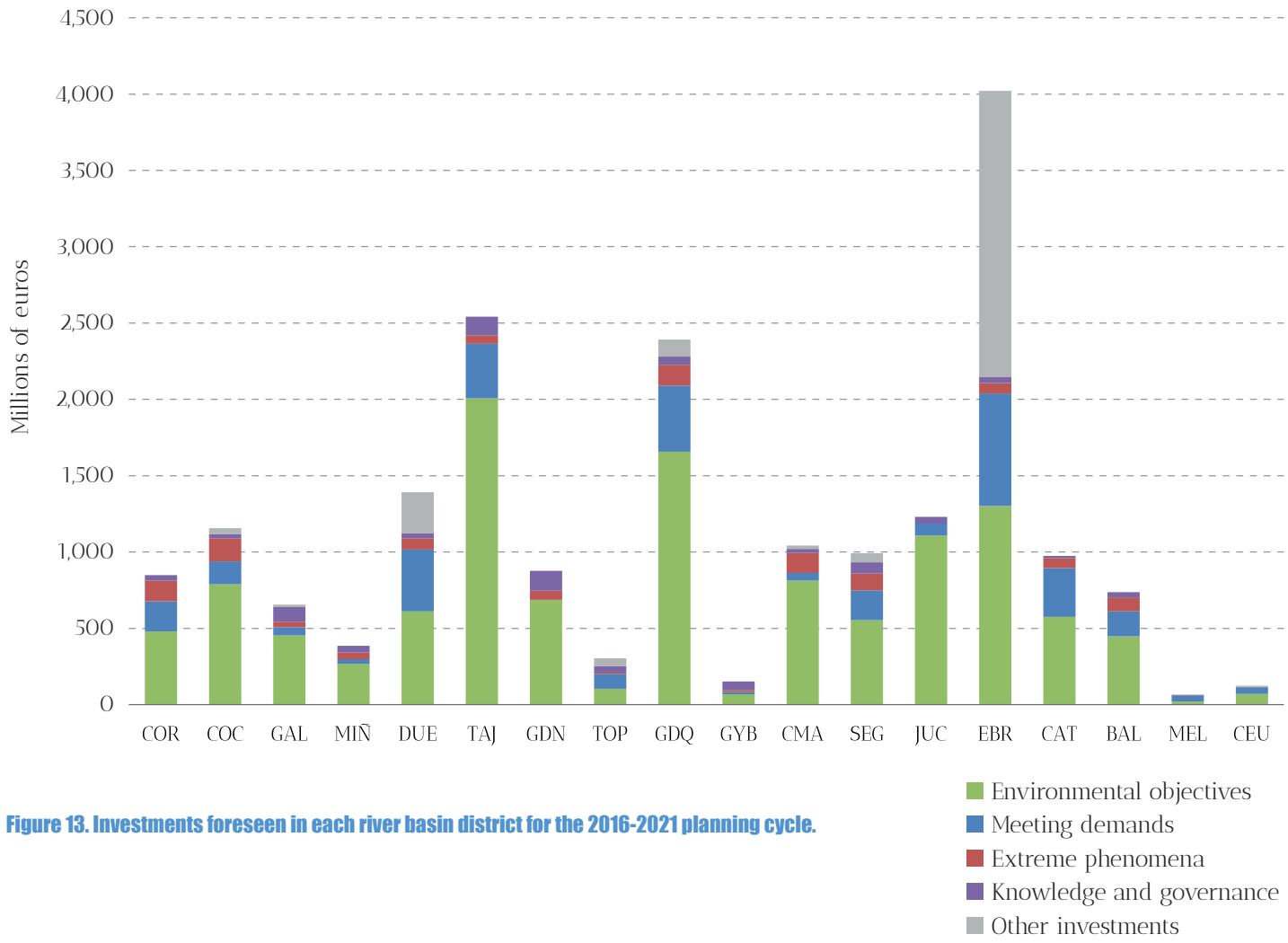


Figure 13. Investments foreseen in each river basin district for the 2016-2021 planning cycle.

In 2021, river basin management plans must be reviewed and the programmes of measures and future investments must be updated accordingly. Said program of measures will be previously valued in 2018, and its conclusions will be included in the mid-term report sent to the European Commission about the degree of implementation of this program. Therefore, those measures currently identified mainly focus on the first programming period, that is to say, the period until the year 2021, as per the information included in Figure 13, in which the amount of the foreseen investment in each river basin district based on type of measure is represented, as well as in Figure 14, in which the number of measures based on type and river basin district

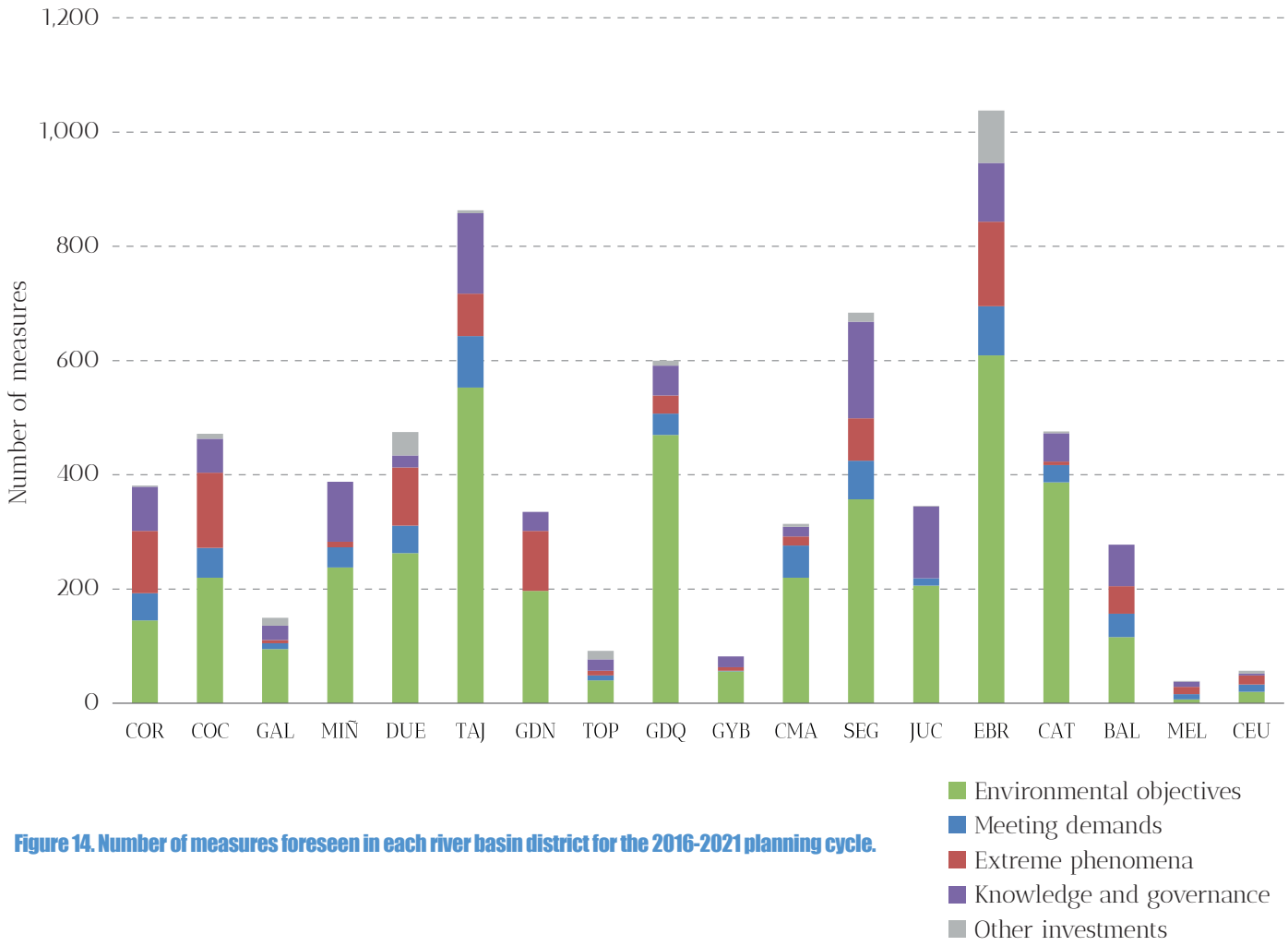


Figure 14. Number of measures foreseen in each river basin district for the 2016-2021 planning cycle.

is represented comparably. Graphs include information on measures pending execution in the previous cycle and which, in some cases, were not expressly included in the review for the second cycle.

The prioritisation of investments has been carried out with the general purpose of achieving objectives and boosting the integration of Community policies and, consequently, European funds. In particular, investments aimed at complying the requirements for the collection and treatment of urban waste water are a priority, especially for those cases involved in sanctioning procedures filed by the European Commission before the CJEU.

The follow-up of these programmes of measures must verify if there is development towards achieving hydrological planning objectives, in particular due to the effects of such measures over the pressures preventing the achievement of the good status or over the offer of resources, thus improving the compliance level with guaranteed supply criteria, which allows the proper structural meeting the demands to be verified.

Therefore, Article 87 of the RPH provides that the Ministry is required to keep, without prejudice to the competences corresponding to the different public administrations, updated information on the status of water bodies and the development of programmes of measures. In particular, a progress report is required by the end of 2018 in which the level of the foreseen programme of measures is detailed.

In order to make such requirement easier, section 4 of additional provision nº two of RD 1/2016, of 8 January, provides that the MITECO is required to keep a database which must be updated with the information annually provided for such purpose by river basin authorities in accordance with the corresponding Committee of Competent Authorities. Said database will be used as a reference for obtaining the follow-up reports which may be necessary, as mentioned in the previous paragraph. Data offered in this report correspond with the information stored in the database on August 2016.

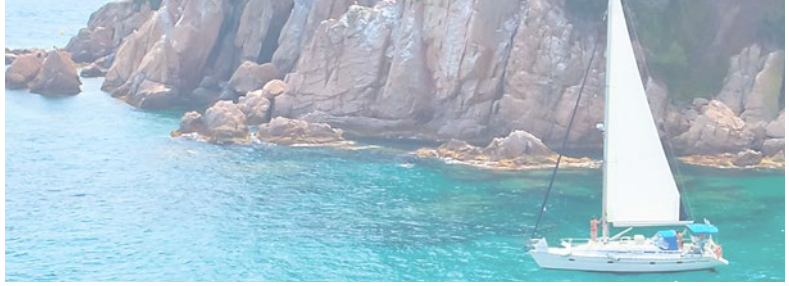
06
Final diagnosis

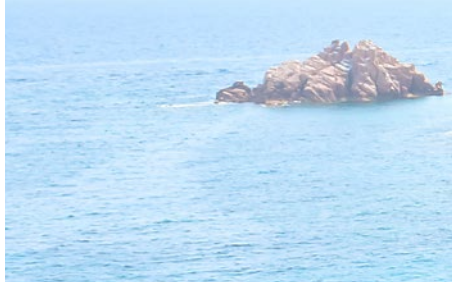
Nowadays, almost 18 years after the adoption of the WFD, it can be said that its implementation is a fact in Spain. Such materialisation is proven by the 25 river basin management plans covering the entire national territory. Although as of 22 December 2015 not all hydrological planning objectives have been achieved, the general approval of second cycle river basin management plans is a success for Spain and, due to the specific importance of our country in the Community context, it is also a success for the European Union.

In order to set out a global diagnosis of the current situation of the river basin management in Spain, a SWOT analysis is included (Table 44) for an initial consideration. Strengths and weaknesses are internal factors of the Water Administration, whereas opportunities and threats are external.

Weaknesses	Threats
There is certain imbalance between the many process requirements and the means available for their development, in particular, regarding to human resources. Spanish plans include several major requirements in addition to those provided by the WFD, such as: assessment of resources, allocation of resources for meeting demands, establishment of ecological flows or performance of a parallel assessment process for strategic environmental assessment which are not set forth in the WFD and, therefore, are not included in other European river basin management plans.	The momentum at the higher levels, key to the success achieved, may weaken after the overcoming of those problems suffered by the delays in the preparation and adoption of first cycle river basin management plans; such factors may deactivate or slow down the strategic process for hydrological planning, prioritising other activities that may require a short-term response.
In Spain, there are 25 districts with very heterogeneous characteristics, which lead to the preparation of a number of river basin management plans much higher than other European Countries. Besides, it is not easy to undertake common national criteria for the development of the works due to the distribution by competences arising from the administrative organisation of the State concerning waters, in particular, when establishing the difference between inter-community and intra-community river basin districts.	Third cycle plans must be adopted before 2021. This date may seem distant and lead to the disregard of follow-up needs of the plans approved and event in the undue deferral of the commencement of the reviewed works which must be carried out duly in advance.
The socioeconomic crisis of recent years led to the reduction of follow-up and updating works of river basin management plans. Today, even though it exists a recovery, the work strength and information registries available ten years ago have not been reached yet.	The economic situation is not sufficiently positive so as to rule out the fact that there are or there may be difficulties for the development of river basin management plans. The requirement of investing more than 20,000 million Euros before 2021, as provided by the plans, is not a trivial matter.
	If there is no development in the process and if it is not verified that there is certain progress towards the achievement of the environmental and socioeconomic objectives by following the actions programmed, a converse reaction may arise discouraging participation and the collaboration of stakeholders, thus ruining the process.

Table 44. SWOT analysis of the situation of hydrological planning in Spain.





Strengths

The planning process is consolidated. Stakeholders assume their needs and they are active in the relevant development of such needs. The collection of more than eight thousand documents with proposals, remarks or suggestions during the preparation of second cycle plans, shows the social relevance of a process in which very different stakeholders have participated.

After two planning cycles, it is safe to say that, in most river basin districts there has been a paradigm shift regarding the classic approach of Spanish hydrological planning; now we work with water bodies, environmental objectives, pressures, programmes of measures, exemptions... that is to say, after all work carried out, with its pros and cons, we have been able to materialise the implementation of the European Water Policy in Spain.

Plans are legally backed up, as shown by almost two dozen judgements of the High Court, by appeals against first cycle river basin management plans and by the broad consensus (not unanimous, however) reached among the different stakeholders for their approval.

In general terms, the river basins districts of Spain are currently prepared to face all works leading to the preparation of third cycle river basin management plans. It is the first time this situation has occurred in Spain.

National river basin authorities and river basin administration of the Autonomous Communities promoting the plans generally have duly qualified and committed technical teams with experience in the works carried out and the ones to be carried out in the future.

Opportunities

The European Commission will assess second cycle river basin management plans, both the Spanish ones and the ones corresponding to the other Member States of the EU. Such analysis may provide opportunities to improve what must be taken into account for the preparation of third cycle plans.

Assuming the conditions provided by the European funding framework for the use of Community funds (ERDF, EAFRD, ESF and EMFF) during the programming period 2014-2020 will no doubt contribute to the successful implementation of river basin management plans.

A duly designed and developed hydrological planning may strengthen visibility and increase the influence capacity of water administration, companies within the industry, research institutions and other stakeholders, both at European and global levels.

Hydrological planning may be an example of an efficient and loyal collaboration among the different Administration levels: National, Regional (Autonomous Communities) and Local, and among the different scopes of competences, since the territory of river basin districts includes different competences and functions which are integrated and organised by the River Basin Management Plan.

Another aspect, which is closely related to the planning process, is the fact that, even after almost 18 years from the adoption of the WFD and once the limit set for the 22 December 2015 has elapsed, Spain must continue working to achieve the compliance with environmental objectives and meeting the demands pursued by the hydrological planning. This problem does not only affect Spain and it may lead to the review of the WFD, which is scheduled for the end of 2019.

Currently valid river basin management plans must be subject to monitoring processes, issues which could not be duly developed with first cycle river basin management plans due to their short validity period. This follow-up must provide detailed information on the way gaps are reduced in relation to the achievement of the objectives pursued, both regarding environmental objectives of good status or good potential -the establishment of which is duly regulated-, and regarding the achievement of socioeconomic objectives as regards the guarantee level of the demands, in whose definition and numerical quantification, foreign to EU supervision, must be dealt with in further detail.

Likewise, such follow-up must provide information on the efficiency of programmes of measures being progressively developed, verifying that investments made offer the expected result while progressing towards the achievement of objectives, or else, proposing the necessary adjustments. Operational control programmes must contribute to such end; therefore, maintaining such programmes is a key element for the development of the hydrological planning process.

The National Water Council shall be annually informed on the follow-up of river basin management plans, as set forth in the RPH and RD 1/2016, approving inter-community river basin management plans; said body may adopt all measures deemed appropriate for correcting any deviations detected as regards the established programming.

In any case, there are problems these second cycle plans are unable to solve, whether because of the fact that their competencies do not fall within the action capacity of a river basin management plan or because the area associated to the problem must not be dealt with within the aforementioned framework.

In this sense, Spanish legislation introduces the National Hydrological Plan, which was adopted in the year 2001 and which has been subsequently amended. The National Hydrological Plan is the instrument for hydrological planning in charge of dealing with those issues hydrological planning by river basin districts cannot cover. Besides, because of its purpose and of its regulatory status, the approval of a National Hydrological Plan involves the adaptation of river basin management plans and programmes of measures according to the provisions of the National Hydrological Plan (Article 86.4 of the RPH).

Those measures necessary for the coordination of river basin management plans are the first content that must be provided by the National Hydrological Plan, which is why it may be an adequate instrument for the harmonisation of those contents within river basin management plans requiring such harmonisation, such as the regulation and quantification of pending ecological flows or the allocation and reservation of resources for certain uses, such as, for example, the ones the Segura, Jucar and Guadiana river basin management plans are reportedly unable to solve.

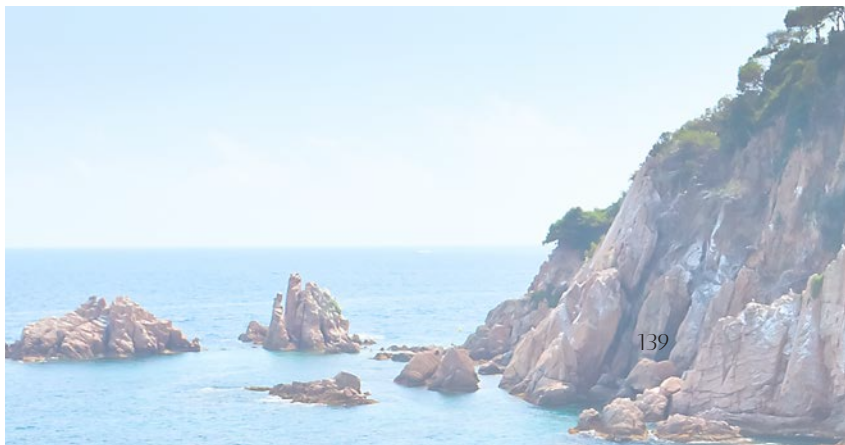
The prevision and conditions for the transfer of water resources among territorial scopes of the different river basin management plans is another of the key issues

set out in the National Hydrological Plan, and which may be related to the aforementioned adjustment of the allocation and reservation of resources. In any case, Article 69 of the RPH sets forth the degree of detail at which the study of transfers must be conducted, both current and future ones.

The settling of any problem regarding the allocation of resources in shared aquifers (Table 16) is another of the issues in which the contents requires the updated National Hydrological Plan, since it is the regulation in charge of establishing their delimitation and characterisation as well as the allocation of resources each of the river basins involved in the distribution is allowed to use.

On the other hand, there are major problems for which a large-scale treatment is required since river basin management plans cannot solve them, or they simply do not even consider them. Among the former, problems such as diffuse pollution, which leads to the establishment by river basin management plans of less stringent environmental objectives due to the proven inability of meeting general objectives within a reasonable term can be included. Among the latter, those matters which are not even included in river basin management plans but which are clearly an issue may be included, such as, for example, the analysis of the pricing policy regarding the use of water, a problem which is stated in the Association Agreement (MINHAP, 2014) and which must be addressed; or the need of reinforcing the regulations on water laws which are currently made up of a huge amount of provisions with different scopes and ranks, which sometime overlap; as a third example, it can be mentioned the study of the effects of climate change on natural resources, the assessment of the status, demands and hydromorphology, particularly in coastal areas which may be affected by the rise of sea level.

The opportunity of revising and updating the National Hydrological Plan, as well as its scope and procedures for doing so, is a decision which must be carefully assessed corresponding to the government when deemed appropriate, based on the general interest determining its actions. Meanwhile, there is no doubt that those works leading to the preparation of third cycle river basin management plans (2021-2027) must be duly dealt with and managed in good time.



07

Bibliographical references

Álvarez, J.; Sánchez, A., and Quintas, L. (2004): *SIMPA, a GRASS based tool for hydrological studies*. Minutes of Users Conference FOSS/GRASS. Bangkok, Thailand. 12–14 September 2004. Link: http://ceh-flumen64.cedex.es/Hidrologia/pub/doc/SIMPABangkok.pdf

EC (2009): *Guidance on groundwater status and trend assessment*. Guidance document no. 18. Common Implementation Strategy (CIS). Link: https://circabc.europa.eu/sd/a/ff303ad4-8783-43d3-989a-55b65ca03afc/Guidance_document_N%C2%B018.pdf

EC (2012a): *Report from the Commission to the European Parliament and the Council on the implementation of the water framework directive (2000/60/CE). River Basin Management Plans*. Link: http://ec.europa.eu/environment/water/water-framework/impl_reports.htm

EC (2012b): *A Blueprint to Safeward Europe's Water Resources*. European Commission, 2012. Link: http://ec.europa.eu/environment/water/blueprint/index_en.htm

EC (2015a): *Report on the implementation of the Water Framework Directive. River Basin Management Plans. Member State: SPAIN*. European Commission. Link: http://ec.europa.eu/environment/water/water-framework/pdf/4th_report/MS%20annex%20-%20Spain.pdf

EC (2015b): *Ecological flows in the implementation of water framework directive*. Guidance document no. 31. Common Implementation Strategy (CIS). Technical report-2015-086. ISBN 978-92-79-45758-6. European Commission. Link: https://circabc.europa.eu/sd/a/4063d635-957b-4b6f-bfd4-b51b0acb2570/Guidance%20No%2031%20-%20Ecological%20flows%20(final%20version).pdf

EC (2016): *WFD Reporting Guidance 2016*. Final Draft 6.0.6. April 2016. European Commission. Link: http://cdr.eionet.europa.eu/help/WFD/WFD_521_2016

CEDEX (2016): *Asignación de las masas de agua en España de la categoría ríos a los tipos comunes de intercalibración de acuerdo con la decisión de la Comisión 2013/480/UE*. Centro de Estudios Hidrográficos del CEDEX. Madrid, March 2016. Draft Version 1.0.

Estrela, T. and Quintas, L. (1996): *A distributed hydrological model for water resources assessment in large basins*. RIVERTECH 96. 1st International Conference on New/Emerging Concepts for Rivers. IWRA. Sep. 22–26, 1996. Chicago. USA.

MAGRAMA (2016): *Memoria de análisis de impacto normativo del proyecto de real decreto por el que se aprueba la revisión de los planes hidrológicos de las demarcaciones hidrográficas del Cantábrico Occidental, Guadalquivir, Ceuta, Melilla, Segura y Júcar y de la parte española de las demarcaciones hidrográficas del Cantábrico Oriental, Miño-Sil, Duero, Tajo, Guadiana y Ebro*. Ministry of Agriculture, Food and the Environment. Link: www.mapama.gob.es/es/agua/temas/planificacion-hidrologica/mainrealdecretoaprobacionplanes_tcm30-98553.pdf

MAGRAMA-UCLM (2016): *Estudio de innovación para un uso más eficiente del agua en el regadío mediante herramientas basadas en la red SIAR, teledetección y SIG. Años 2014-2015*. Convenio entre la Empresa de Transformación Agraria, S.A. (TRAGSA) and Universidad de Castilla-La Mancha. SPIDER-CENTRE Project 2014-2015. Sub-Directorate General for Irrigation and Water Economy. National Centre for Irrigation Technology. Link: http://maps.spiderwebgis.org/login/?custom=spider-center

MIMAM (2000): *White Paper on Water in Spain*. Publications Centre. General Technical Secretariat. Ministry of the Environment. ISBN: 84-8320-128-3. NIPO: 310-00-009-3. Link: http://www.magrama.gob.es/es/agua/temas/planificacion-hidrologica/libro-blanco-del-agua/

MINHAP (2014): *Association Agreement of Spain 2014-2020*. Ministry of Finance and Public Administrations. Link: http://www.dgfc.sgpg.meh.es/sitios/dgfc/es-ES/ipr/fcp1420/p/pa/Paginas/inicio.aspx

United Nations (2015): *Transforming our world: the 2030 Agenda for Sustainable Development*. Link: https://sustainabledevelopment.un.org/post2015/transformingourworld

Pérez, M.A. (2005): *Modelo distribuido de simulación del ciclo hidrológico y calidad del agua, integrado en sistemas de información geográfica, para grandes cuencas. Aportación al análisis de presiones e impactos de la Directiva Marco del Agua*. Thesis. Universidad Politécnica de Valencia. 387 pp.

Addendum 1

Territory and population of the Autonomous Communities in the river basin districts

River Basin District		Autonomous Communities																			
		GAL	AST	CTB	PVA	NAV	CLE	RIO	ARA	CAT	EXT	MAD	CLM	VAL	AND	MUR	BAL	MEL	CEU	CNR	TOTAL
Eastern Cantabrian	Area	–	–	–	4,356	1,150	283	–	–	–	–	–	–	–	–	–	–	–	–	–	5,790
	Population				1,874.0	28.2	3.6														1,905.8
Western Cantabrian	Area	1,907	10,585	4,453	185	–	276	–	–	–	–	–	–	–	–	–	–	–	–	–	17,405
	Population	26.5	1,044.4	565.2	3.8		0.8														1,640.6
Galicia-Coast	Area	13,029	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	13,029
	Population	2,001.2																			2,001.2
Miño-Sil	Area	13,515	12	–	–	–	4,027	–	–	–	–	–	–	–	–	–	–	–	–	–	17,554
	Population	670.4	0.1				141.5														812.0
Douro	Area	1,133	4	98	–	–	77,510	22	–	–	42	13	60	–	–	–	–	–	–	–	78,883
	Population	28.3	–	1.2			2,138.3	–			–	–	–								2,167.8
Tagus	Area	–	–	–	–	–	3,990	–	243	–	16,655	8,018	26,875	–	–	–	–	–	–	–	55,781
	Population						89.6		1.1		382.1	6,400.9	885.6								7,759.2
Guadiana	Area	–	–	–	–	–	–	–	–	–	23,414	–	26,474	–	5,604	–	–	–	–	–	55,492
	Population										693.1		629.6		118.7						1,441.5
Tinto, Odiel and Piedras	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	4,753		–	–	–	–	4,753
	Population														380.8						380.8
Guadalquivir	Area	–	–	–	–	–	–	–	–	–	1,513	–	4,070	–	51,545	67	–	–	–	–	57,195
	Population										12.8		68.5		4,251.1	–					4,332.3
Guadalete and Barbate	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	5,952	–	–	–	–	–	5,952
	Population														908.8						908.8
Andalusian Mediterranean Basins	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	17,950	–	–	–	–	–	17,950
	Population														2,713.9						2,713.9
Segura	Area	–	–	–	–	–	–	–	–	–	–	–	4,761	1,299	1,788	11,185	–	–	–	–	19,032
	Population												67.5	424.8	25.7	1,465.1					1,983.0
Jucar	Area	–	–	–	–	–	–	–	5,374	88	–	–	16,097	21,108	–	65	–	–	–	–	42,731
	Population								50.8	12.8			402.0	4,506.1		–					4,971.6
Ebro	Area	–	–	778	2,694	9,240	8,136	5,023	42,104	15,590	–	–	1,121	853	–	–	–	–	–	–	85,539
	Population			17.5	286.6	608.0	92.1	312.6	1,270.7	593.3			1.8	4.6							3,187.0
Catalonia	Area	–	–	–	–	–	–	–	–	16,435	–	–	–	–	–	–	–	–	–	–	16,435
	Population									6,792.5											6,792.5
Balearic Islands	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4,991	–	–	–	4,991
	Population																1,129.2				1,129.2

River Basin District		Autonomous Communities																			
		GAL	AST	CTB	PVA	NAV	CLE	RIO	ARA	CAT	EXT	MAD	CLM	VAL	AND	MUR	BAL	MEL	CEU	CNR	TOTAL
Melilla	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	13	–	–	**13**
	Population																	84.9			**84.9**
Ceuta	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20	–	**20**
	Population																		84.5		**84.5**
Lanzarote	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	845	**845**
	Population																			142.1	**142.1**
Fuerteventura	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1,661	**1,661**
	Population																			103.4	**103.4**
Gran Canaria	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1,560	**1,560**
	Population																			862.3	**862.3**
Tenerife	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2,036	**2,036**
	Population																			897.7	**897.7**
La Gomera	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	368	**368**
	Population																			22.5	**22.5**
La Palma	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	706	**706**
	Population																			85.6	**85.6**
El Hierro	Area	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	268	**268**
	Population																			12.8	**12.8**
TOTAL	**Area**	**29,584**	**10,601**	**5,329**	**7,235**	**10,390**	**94,223**	**5,045**	**47,721**	**32,112**	**41,624**	**8,031**	**79,458**	**23,259**	**87,591**	**11,317**	**4,991**	**13**	**20**	**7,444**	**505,989**
	Population	**2,726.3**	**1,044.5**	**583.9**	**2,164.3**	**636.1**	**2,465.9**	**312.6**	**1,322.5**	**7,398.5**	**1,088.1**	**6,400.9**	**2,054.9**	**4,935.5**	**8,399.0**	**1,465.1**	**1,129.2**	**84.9**	**84.5**	**2,100.3**	**46,423.1**

Area and population of river basin districts by Autonomous Community and Autonomous City.

Area: expressed in km². Population: expressed in thousands of inhabitants, based on the census of 01/07/2015.

GAL: Galicia; AST: Principality of Asturias; CTB: Cantabria; PVA: Basque Country; NAV: Autonomous Community of Navarra; CLE: Castilla y León; RIO: La Rioja; ARA: Aragón; CAT: Catalonia; EXT: Extremadura; MAD: Autonomous Community of Madrid; CLM: Castilla-La Mancha; VAL: Autonomous Community of Valencia; AND: Andalusia; MUR: Autonomous Community of Murcia; BAL: Balearic Islands; MEL: Melilla; CEU: Ceuta; CNR: Canary Islands.

Addendum 2

Types of surface water bodies. Total and by river basin district

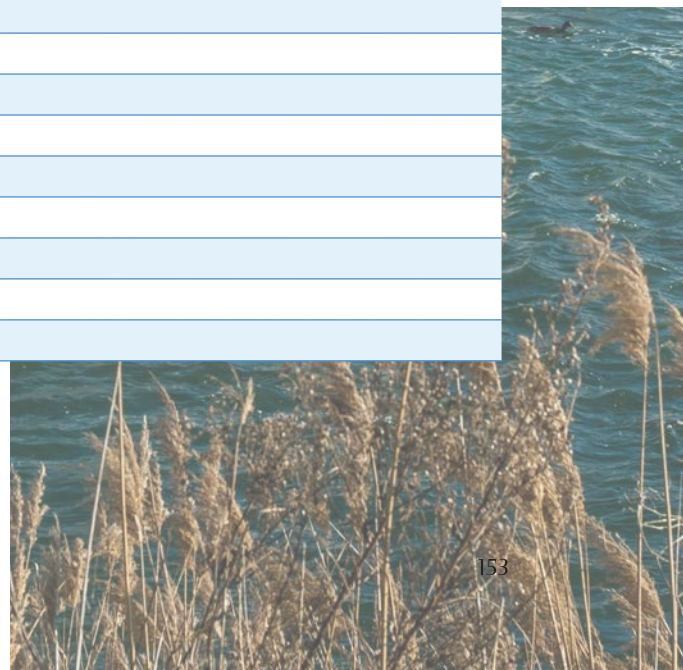
Types of surface water bodies

Code	Type description
AC-T01	Mediterranean coastal waters with a moderate fluvial influence, shallow and sandy
AC-T02	Mediterranean coastal waters with a moderate fluvial influence, shallow and rocky
AC-T03	Mediterranean coastal waters with a moderate fluvial influence, deep and sandy
AC-T04	Mediterranean coastal waters with a moderate fluvial influence, deep and rocky
AC-T05	Mediterranean coastal water with no influence of fluvial inputs, shallow and sandy
AC-T06	Mediterranean coastal water with no influence of fluvial inputs, shallow and mixed
AC-T07	Mediterranean coastal water with no influence of fluvial inputs, deep and sandy
AC-T08	Mediterranean coastal water with no influence of fluvial inputs, deep and rocky
AC-T09	Mediterranean coastal waters with a high fluvial influence, shallow and sandy
AC-T10	Mediterranean coastal waters influenced by Atlantic water
AC-T11	Coastal lagoon of Mar Menor
AC-T12	Exposed East Cantabrian Atlantic waters without upwelling
AC-T13	Atlantic coastal waters of the Gulf of Cadiz
AC-T14	Exposed West Cantabrian Atlantic waters with low upwelling
AC-T15	Atlantic coastal waters with medium upwelling
AC-T16	Semi-exposed or protected Atlantic coastal waters with intense upwelling
AC-T17	Atlantic coastal waters with intense upwelling
AC-T18	Semi-exposed or protected Atlantic coastal waters with medium upwelling
AC-T19	Atlantic coastal waters influenced by fluvial inputs
AC-T20	Atlantic coastal waters influenced by Mediterranean waters
AC-T21	Mediterranean coastal water with no influence of fluvial inputs, shallow and rocky
AC-T22	Deep rocky coastal waters
AC-T23	Deep sedimentary coastal waters
AC-T24	Shallow sedimentary coastal waters
AC-T25	Type I Canary Islands
AC-T26	Type II Canary Islands
AC-T27	Type III Canary Islands
AC-T28	Type IV Canary Islands
AC-T29	Type V Canary Islands
AC-T30	Deep waters of the Balearic Islands river basin district
AMP-T01	Atlantic transitional waters with low renewal rate
AMP-T02	Atlantic transitional waters with high renewal rate

Code	Type description
AMP-T03	Atlantic coastal waters with low renewal rate
AMP-T04	Atlantic coastal waters with high renewal rate
AMP-T05	Mediterranean coastal waters with low renewal rate
AMP-T06	Mediterranean coastal waters with high renewal rate
AT-T01	Mediterranean microtidal estuary without salt wedge
AT-T02	Mediterranean microtidal estuary with salt wedge
AT-T03	Mediterranean estuary-like bay
AT-T04	Mediterranean coastal lagoon with low inputs of fresh water
AT-T05	Mediterranean coastal lagoon with moderate inputs of fresh water
AT-T06	Mediterranean coastal lagoon with high inputs of fresh water
AT-T07	Salt marshes
AT-T08	Inter-tidal Atlantic estuary in which the river dominates the estuary
AT-T09	Inter-tidal Atlantic estuary with marine dominance
AT-T10	Sub-tidal Atlantic estuary
AT-T11	Atlantic transitional lagoon areas
AT-T12	Meso-tidal Atlantic estuary with irregular river discharges
AT-T13	Tinto-Odiel estuary
AT-T14	Euhaline
AT-T15	Mesohaline
AT-T16	Oligohaline
E-T01	Monomictic, siliceous of wet areas, with an average annual temperature lower than 15°C, corresponding to headwater rivers and high water courses
E-T02	Monomictic, siliceous of wet areas, with an average annual temperature higher than 15°C, corresponding to headwater rivers and high water courses
E-T03	Monomictic, siliceous of wet areas corresponding to rivers of the main network
E-T04	Monomictic, siliceous of wet areas corresponding to headwater rivers and high water courses
E-T05	Monomictic, siliceous of non-wet areas corresponding to rivers of the main network
E-T06	Monomictic, siliceous of non-wet areas corresponding to lower water courses of the main networks
E-T07	Monomictic, calcareous of wet areas, with an average annual temperature lower than 15°C, corresponding to headwater rivers and high water courses
E-T09	Monomictic, calcareous of wet areas corresponding to rivers of the main network
E-T10	Monomictic, calcareous of wet areas corresponding to headwater rivers and high water courses
E-T11	Monomictic, calcareous of non-wet areas corresponding to rivers of the main network
E-T12	Monomictic, calcareous of non-wet areas corresponding to lower water courses of the main rivers
E-T13	Dimictic

Code	Type description
L-T01	High northern mountain regions, deep, acid waters
L-T02	High northern mountain regions, deep, alkalyne waters
L-T03	High northern mountain regions, shallow, acid waters
L-T04	High northern mountain regions, shallow, alkalyne waters
L-T05	High northern mountain regions, temporary
L-T06	Middle mountain regions, acid waters
L-T07	Middle mountain regions, alkalyne waters
L-T08	Middle mountain regions, shallow, alkalyne waters
L-T09	High southern mountain regions
L-T10	Karst, calcareous, permanent, hypogenic
L-T11	Karst, calcareous, permanent, upwelling
L-T12	Karst, calcareous, permanent, travertine closing
L-T13	Karst, calcareous, temporary
L-T14	Karst, evaporites, hypogenic or mixed, large
L-T15	Karst, evaporites, hypogenic or mixed, small
L-T16	Inside sedimentation basin, permanent low mineralisation
L-T17	Inside sedimentation basin, temporary low mineralisation
L-T18	Inside sedimentation basin, permanent medium mineralisation
L-T19	Inside sedimentation basin, temporary medium mineralisation
L-T20	Inside sedimentation basin, permanent high to very high mineralisation
L-T21	Inside sedimentation basin, temporary high to very high mineralisation
L-T22	Inside sedimentation basin, permanent hyper-saline
L-T23	Inside sedimentation basin, temporary hyper-saline
L-T24	Inside sedimentation basin, fluvial origin, flood plain type, low to medium mineralisation
L-T25	Inside sedimentation basin, fluvial origin, flood plain type, high to very high mineralisation
L-T26	Inside sedimentation basin, fluvial origin, abandoned meander type
L-T27	Inside sedimentation basin, associated to alkaline peatlands
L-T28	Coastal lagoons without sea influence
L-T29	Coastaline in dune area, permanent
L-T30	Coastaline in dune area, temporary
R-B01	Mountain rivers in the Balearic Islands
R-B02	Canyon rivers in the Balearic Islands
R-B03	Plain rivers in the Balearic Islands
R-T01	Siliceous plain rivers of the Tagus and Guadiana

Code	Type description
R-T02	Rivers of the Guadalquivir Valley
R-T03	Siliceous peneplain rivers of the Meseta Norte
R-T04	Mineralised rivers of the Meseta Norte
R-T05	Rivers of Castilla-La Mancha
R-T06	Siliceous rivers of the foothills of Sierra Morena
R-T07	Low-altitude mineralised Mediterranean rivers
R-T08	Siliceous low-mountain Mediterranean rivers
R-T09	Mineralised low-mountain Mediterranean rivers
R-T10	Mediterranean rivers with karst influence
R-T11	Mediterranean siliceous mountain rivers
R-T12	Mediterranean calcareous mountain rivers
R-T13	Highly mineralised Mediterranean rivers
R-T14	Low-altitude mineralised Mediterranean axis
R-T15	Mediterranean-continental low-mineralised axis
R-T16	Mediterranean-continental mineralised axis
R-T17	Major axes in Mediterranean environments
R-T18	Coastal Mediterranean rivers
R-T19	Tinto river
R-T19bis	Odiel river
R-T20	Wet Baetic mountain range rivers
R-T21	Siliceous Cantabrian-Atlantic rivers
R-T22	Calcareous Cantabrian-Atlantic rivers
R-T23	Rivers of the Basque Country and the Pyrenees
R-T24	Gredos-Béjar Canyon
R-T25	Siliceous wet mountain rivers
R-T26	Calcareous wet mountain rivers
R-T27	High-mountain rivers
R-T28	Main Cantabrian-Atlantic siliceous river networks
R-T29	Main Cantabrian-Atlantic calcareous river networks
R-T30	Coastal Cantabrian-Atlantic rivers
R-T31	Small Cantabrian-Atlantic siliceous networks
R-T32	Small Cantabrian-Atlantic calcareous networks



Typologies by river basin districts

EASTERN CANTABRIAN
AC-T12
AT-T08
AT-T09
AT-T10
E-T01
E-T07
E-T09
L-T18
R-T22
R-T23
R-T29
R-T30
R-T32

WESTERN CANTABRIAN
AC-T04
AC-T12
AC-T14
AT-T01
AT-T02
AT-T08
AT-T09
AT-T10
AT-T11
E-T01
E-T03
E-T07
L-T02
L-T07
L-T08
L-T10
R-T21
R-T22
R-T25
R-T26
R-T28
R-T29
R-T30
R-T31
R-T32

GALICIA-COAST
AC-T14
AC-T15
AC-T16
AC-T17
AC-T18
AMP-T03
AMP-T04
AT-T08
AT-T09
AT-T11
E-T01
E-T03
R-T21
R-T25
R-T28
R-T30
R-T31

MIÑO-SIL
AC-T17
AT-T08
E-T01
E-T03
E-T07
E-T09
L-T24
R-T21
R-T25
R-T26
R-T27
R-T28
R-T30
R-T31

DOURO
E-T01
E-T03
E-T05
E-T07
E-T11
E-T12
E-T13
L-T03
L-T06
L-T19
L-T21
L-T24
R-T03
R-T04
R-T11
R-T12
R-T15
R-T16
R-T17
R-T25
R-T26
R-T27

TAGUS
E-T01
E-T03
E-T04
E-T05
E-T06
E-T07
E-T10
E-T11
E-T12
L-T03
L-T05
L-T10
L-T12
L-T17
R-T01
R-T05
R-T08
R-T11
R-T12
R-T13
R-T15
R-T16
R-T17
R-T24

GUADIANA
AC-T13
AC-T19

AT-T12
E-T01
E-T04
E-T05
E-T06
E-T10
E-T11
L-T12
L-T13
L-T17
L-T19
L-T20
L-T21
L-T23
L-T24
L-T25
R-T01
R-T05
R-T06
R-T08
R-T16
R-T17
R-T18
TINTO, ODIEL AND PIEDRAS
AC-T13
AMP-T01
AMP-T04
AT-T12
AT-T13
E-T04
E-T10
L-T29
R-T02

R-T06
R-T08
R-T19
R-T19bis
GUADALQUIVIR
AC-T13
AC-T19
AMP-T01
AT-T07
AT-T12
E-T02
E-T04
E-T05
E-T07
E-T10
E-T11
E-T12
L-T15
L-T17
L-T18
L-T19
L-T20
L-T21
L-T23
L-T25
L-T27
L-T30
R-T02
R-T06
R-T07
R-T08
R-T09
R-T11

R-T12
R-T13
R-T14
R-T16
R-T17
R-T18
R-T19
GUADALETE AND BARBATE
AC-T13
AC-T20
AMP-T02
AMP-T04
AT-T12
E-T10
L-T18
L-T19
L-T21
R-T02
R-T07
R-T09
R-T14
R-T18
R-T20
ANDALUSIAN MEDITERRANEAN BASINS
AC-T07
AC-T08
AC-T10
AMP-T06
AT-T01
AT-T02
AT-T04
AT-T07

E-T02
E-T04
E-T10
E-T11
L-T09
L-T14
L-T15
L-T21
L-T23
L-T27
L-T28
R-T07
R-T08
R-T09
R-T11
R-T12
R-T13
R-T14
R-T18
R-T20
R-T27
SEGURA
AC-T05
AC-T06
AC-T07
AC-T11
AC-T21
AMP-T05
AT-T07
E-T07
E-T10
E-T11
L-T23

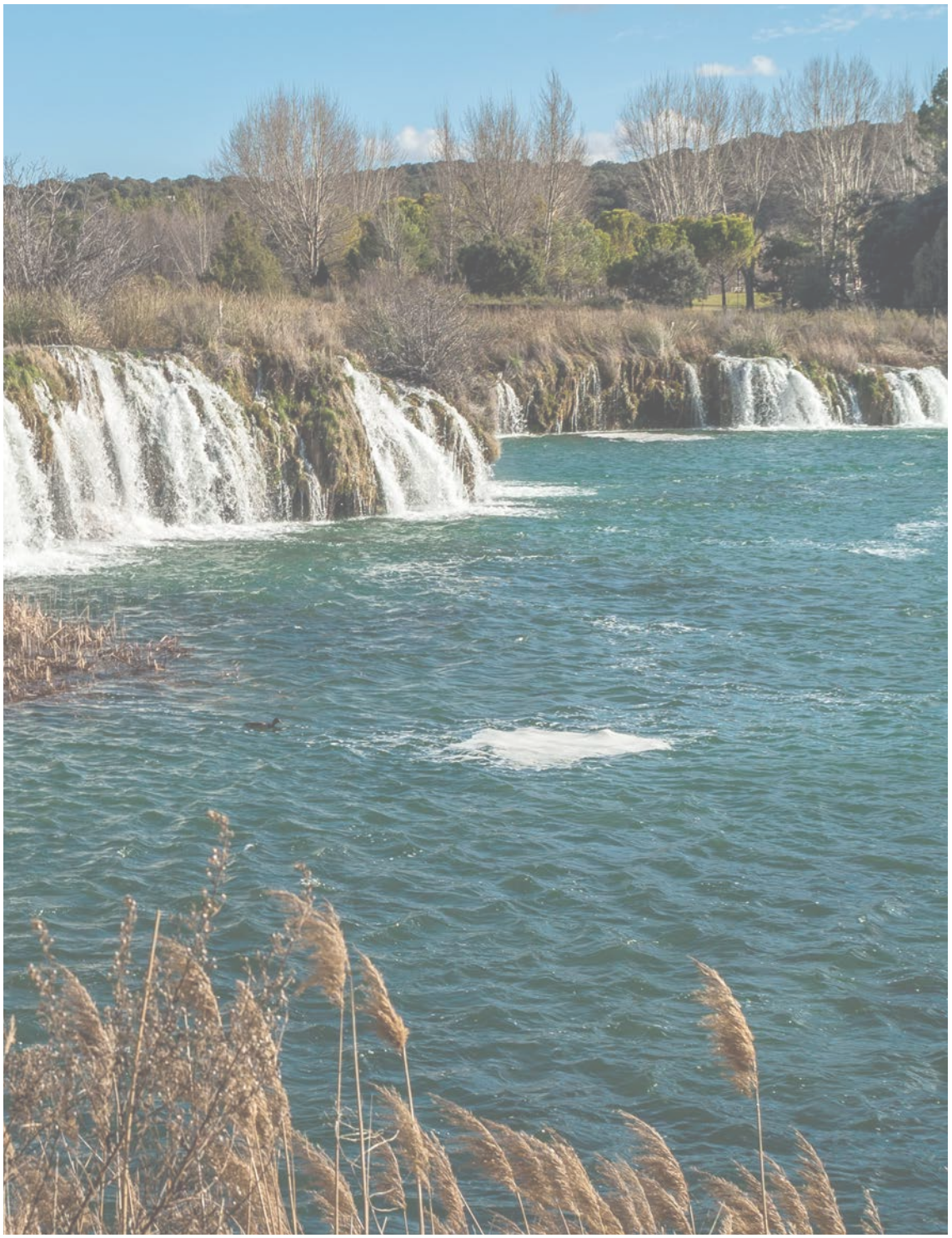
L-T28
R-T09
R-T12
R-T13
R-T14
R-T16
R-T17
JUCAR
AC-T01
AC-T02
AC-T05
AC-T06
AC-T08
AMP-T05
AT-T02
AT-T07
E-T07
E-T10
E-T11
L-T10
L-T11
L-T12
L-T15
L-T17
L-T19
L-T28
R-T05
R-T09
R-T10
R-T12
R-T13
R-T14
R-T16

R-T17
R-T18
EBRO
AC-T09
AT-T02
AT-T03
AT-T04
AT-T07
E-T01
E-T07
E-T09
E-T10
E-T11
E-T12
E-T13
L-T01
L-T02
L-T03
L-T04
L-T05
L-T11
L-T15
L-T16
L-T18
L-T20
L-T21
L-T22
L-T23
L-T24
L-T26
R-T09
R-T11
R-T12

R-T15
R-T16
R-T17
R-T26
R-T27
CATALONIA
AC-T01
AC-T03
AC-T04
AC-T05
AC-T07
AC-T08
AC-T09
AMP-T05
AT-T04
AT-T05
AT-T06
E-T01
E-T07
E-T09
E-T10
L-T11
L-T13
L-T14
L-T15
L-T16
L-T17
L-T18
L-T19
L-T20
L-T26
L-T28
R-T08

R-T09
R-T10
R-T11
R-T12
R-T15
R-T16
R-T18
R-T26
R-T27
BALEARIC ISLANDS
AC-T22
AC-T23
AC-T24
AC-T30
AT-T14
AT-T15
AT-T16
R-B01
R-B02
R-B03
MELILLA
AC-T08
AMP-T05
R-T07
CEUTA
AC-T10
AMP-T06
LANZAROTE
AC-T25
AC-T26
AC-T27
AC-T28
AMP-T03

FUERTEVENTURA
AC-T25
AC-T26
AC-T27
AC-T28
GRAN CANARIA
AC-T25
AC-T26
AC-T27
AC-T28
AMP-TO3
TENERIFE
AC-T25
AC-T26
AC-T27
AC-T28
AC-T29
AMP-TO3
LA GOMERA
AC-T25
AC-T26
AC-T27
AC-T29
LA PALMA
AC-T25
AC-T26
AC-T27
AC-T28
EL HIERRO
AC-T25
AC-T26
AC-T27



Relationship between national river types and common intercalibration types

Type No.	Name national typology			Intercalibration types in GIGs			
				R-C2	R-C3	R-C4	R-C5
		WITHOUT IC TYPE km	WITHOUT IC TYPE % of the type	Small siliceous plain rocks 10-100 km² low altitude alk<0.4	Small siliceous gravel rocks 10-100 km² medium altitude alk<0.4	Small mixed plain gravel-sand 100-1000 km² low altitude alk<0.4	Large mixed plain river basin 800m 1000-10000 low altitude alk>0.4
R-T1	Siliceous plain rivers of the Tagus and Guadiana	898.87	21.54				
R-T2	Rivers of the Gudalquivir Valley	170.61	11.10				
R-T3	Siliceous peneplain rivers of the Meseta Norte	393.18	23.04				
R-T4	Miniralised rivers of the Meseta Norte	551.08	15.08				
R-T5	Rivers of Castilla-La Mancha	467.32	21.72				
R-T6	Siliceous rivers of the foothills of Sierra Morena	48.22	4.14				
R-T7	Low-altitude mineralised Mediterranean rivers	240.72	14.67				
R-T8	Siliceous low-mountain Mediterranean rivers	547.01	9.15				
R-T9	Mineralised low-mountain Mediterranean rivers	1,446.05	15.84				
R-T10	Mediterranean rivers with karst influence	64.43	22.37				
R-T11	Mediterranean siliceous mountain rivers	1,918.18	54.02				
R-T12	Mediterranean calcareous mountain rivers	3,660.33	33.02				
R-T13	Highly mineralised Mediterranean rivers	204.99	20.12				
R-T14	Low-altitude mineralised Mediterranean axis	184.25	31.56				
R-T15	Mediterranean-continental low-mineralised axis	1,266.87	45.83				
R-T16	Mediterranean-continental mineralised axis	1,084.27	66.44				
R-T17	Major axes in Mediterranean environments		0.00				
R-T18	Coastal Mediterranean rivers	151.78	11.05				
R-T19	Tinto and Odiel Rivers	309.31	96.28				
R-T20	Wet Baetic mountain range rivers		0.00				
R-T21	Siliceous Cantabriab-Atlantic rivers	2,509.66	62.62	384.64	644.98	129.95	
R-T22	Calcareous Cantabriab-Atlantic rivers	401.44	40.14				
R-T23	Rivers of the Basque Country and the Pyrenees	212.79	40.08				
R-T24	Gredos-Béjar Canyon	5.34	0.83				
R-T25	Siliceous wet mountain rivers	2,364.64	85.82		34.64		
R-T26	Calcareous wet mountain rivers	2,222.24	64.92				
R-T27	High-mountain rivers	690.94	36.15				
R-T28	Main Cantabrian-Atlantic siliceous river axis	284.42	41.92			76.43	42.03
R-T29	Main Cantabrian-Atlantic calcareous river axis	65.55	27.93			44.37	29.50
R-T30	Coastal Cantabrian-Atlantic rivers	562.05	42.27	428.56	17.29		
R-T31	Small Cantabrian-Atlantic siliceous axis	1,586.50	43.15	814.29	794.30	268.81	
R-T32	Small Cantabrian-Atlantic calcareous axis	197.79	26.39			69.66	
R-B01	Balearic Islands. R_B01	157.10	100.00				
R-B02	Balearic Islands. R_B02	31.78	100.00				
R-B03	Balearic Islands. R_B03	388.80	100.00				
	km River Basin Network	25,288.53		1,627.48	1,491.20	589.22	71.52
	Percentage River Basin Network	32.70		2.10	1.93	0.76	0.09

Intercalibration types in GIGs										
R-C6	R-A2	R-M1	R-M2	R-M4	R-M5	R-L2	H. Modified	Artificial		
Small calcareous plain gravel 10-300 km² low altitude alk<2.0	Small-medium siliceous blocks 101000 km² 500-1000 m basin>3000 nival-glacial	Small mixed 200-800 m 10-100 km² medium seasonal altitude	Medium mixed < 600 m 100-1000 km² low seasonal altitude	Small-Medium mixed 400-1500 m 10-1000 km² seasonal Medit. mountain	Small mixed < 300 m 10-100 km² temporary Mediterranean	Very large >10000 km² alk>0.5			km River Basin Network	% River Basin Network
		1,151.77	1,827.75		112.59		183.00		4,173.97	5.40
			604.97		731.24		30.43		1,537.25	1.99
		691.42		563.75			57.92		1,706.27	2.21
		103.71		1,418.44			1,581.23		3,654.46	4.73
				1,077.79			548.39	57.67	2,151.18	2.78
		10.46	284.54		660.23		162.33		1,165.76	1.51
		118.26	642.00	16.93	390.30		233.19		1,641.40	2.12
		2,732.83	1,598.01	834.89	86.69		181.99		5,981.43	7.73
		1,893.48	2,840.40	1,591.06	347.62		999.27	10.53	9,128.40	11.80
		55.43	105.22		21.00		41.90		287.98	0.37
		442.68		807.97	25.42		356.53		3,550.78	4.59
		1,572.59	302.09	5,215.82	21.52		268.76	42.89	11,084.00	14.33
		117.81	295.47	190.36	73.09		137.03		1,018.75	1.32
			55.69				331.32	12.46	583.73	0.75
			215.53	76.10			995.71	209.89	2,764.11	3.57
							547.63		1,631.90	2.11
						699.28	794.39	129.17	1,622.83	2.10
		124.90	128.08		747.82		221.42		1,374.00	1.78
							11.96		321.26	0.42
		105.76	193.04		90.03		39.83		428.65	0.55
78.04							260.54		4,007.82	5.18
436.22							162.39		1,000.05	1.29
273.65							44.42		530.86	0.69
		410.71	82.92	148.21					647.18	0.84
							356.06		2,755.33	3.56
	669.16	333.27	1.53		155.08		41.79		3,423.07	4.43
	1,170.23						49.93		1,911.10	2.47
							275.62		678.50	0.88
							95.24		234.65	0.30
228.69							93.02		1,329.61	1.72
							213.05		3,676.95	4.75
375.35							106.73		749.53	0.97
									157.10	0.20
									31.78	0.04
									388.80	0.50
1,391.95	1,839.39	9,865.08	9,177.23	11,941.32	3,462.62	699.28	9,423.00	462.61	77,330.44	100.00
1.80	2.38	12.76	11.87	15.44	4.48	0.90	12.19	0.60	100.00	

Relationship between national river types and common intercalibration types by virtue of the Decision of the Commission 2013/480/EU, in terms of length of the river basin network covered by those water bodies included in each type.

Addendum 3

Assessment of the ecological status/potential and of the chemical status of surface water bodies

Assessment of the status or ecological potential of surface water bodies

RBD	Category and Nature			Number of SWB		Ecological Status/Pot. 1st cycle			Ecological Status/Pot. 2nd cycle		
				1st cycle	2nd cycle	Good or higher (*)	Less than good (**)	Unknown	Good or higher	Less than good	Unknown
COR	River	Natural		86	87	47	37	2	65	22	0
		Heavily Mod.	Reserv.	1	9	0	1	0	9	0	0
			River	22	21	1	21	0	5	16	0
	Lake	Natural		1	1	1	0	0	1	0	0
		Heavily Mod.		8	0	4	3	1	0	0	0
		Artificial		2	2	2	0	0	2	0	0
	Transitional	Natural		10	10	2	8	0	1	9	0
		Heavily Mod		4	4	0	4	0	1	3	0
	Coastal	Natural		4	4	3	1	0	4	0	0
	TOTAL			**138**	**138**	**60**	**75**	**3**	**88**	**50**	**0**
COC	River	Natural		223	223	167	53	3	199	24	0
		Heavily Mod.	Reserv.	10	10	7	2	1	6	4	0
			River	17	17	4	13	0	7	10	0
	Lake	Natural		5	5	2	3	0	4	1	0
		Artificial		2	2	1	0	1	1	1	0
	Transitional	Natural		16	16	12	4	0	11	5	0
		Heavily Mod.		5	5	2	3	0	2	3	0
	Coastal	Natural		14	14	13	1	0	13	1	0
		Heavily Mod.		1	1	1	0	0	1	0	0
	TOTAL			**293**	**293**	**209**	**79**	**5**	**244**	**49**	**0**
GAL	River	Natural		378	384	173	84	121	318	66	0
		Heavily Mod.	Reserv.	17	19	4	13	0	0	19	0
			River	16	12	1	13	2	1	11	0
	Transitional	Natural		22	22	19	2	1	16	6	0
	Coastal	Natural		22	22	19	3	0	19	3	0
		Heavily Mod.		7	7	6	0	1	7	0	0
	TOTAL			**462**	**466**	**222**	**115**	**125**	**361**	**105**	**0**
MIÑ	River	Natural		221	204	169	51	1	168	36	0
		Heavily Mod.	Reserv.	30	30	20	10	0	20	10	0
			River	19	38	4	15	0	20	18	0
	Lake	Natural		1	1	0	1	0	1	0	0
		Artificial		2	2	1	1	0	1	1	0
	Transitional	Natural		4	2	1	0	3	0	2	0
	Coastal	Natural		1	2	0	0	1	2	0	0
	TOTAL			**278**	**279**	**195**	**78**	**5**	**212**	**67**	**0**

RBD	Category and Nature		Number of SWB		Ecological Status/Pot. 1st cycle			Ecological Status/Pot. 2nd cycle		
			1st cycle	2nd cycle	Good or higher (*)	Less than good (**)	Unknown	Good or higher	Less than good	Unknown
DUE	River	Natural	608	479	123	485	0	94	385	0
		Heavily Mod. Reserv.	42	42	20	21	1	31	11	0
		Heavily Mod. River	38	166	1	37	0	70	96	0
		Artificial	8	3	5	3	0	2	1	0
	Lake	Natural	12	9	10	2	0	6	3	0
		Heavily Mod.	2	5	2	0	0	5	0	0
		Artificial	0	5	0	0	0	3	2	0
	TOTAL		**710**	**709**	**161**	**548**	**1**	**211**	**498**	**0**
TAJ	River	Natural	191	191	115	65	11	118	73	0
		Heavily Mod. Reserv.	58	58	25	29	4	30	24	4
		Heavily Mod. River	58	57	22	33	3	27	29	1
		Artificial	1	1	0	0	1	0	0	1
	Lake	Natural	7	7	6	0	1	5	2	0
		Artificial	9	9	2	7	0	2	7	0
	TOTAL		**324**	**323**	**170**	**134**	**20**	**182**	**135**	**6**
GDN	River	Natural	195	191	53	142	0	57	134	0
		Heavily Mod. Reserv.	50	52	17	30	3	14	35	3
		Heavily Mod. River	4	8	0	4	0	1	7	0
	Lake	Natural	44	44	11	33	0	17	27	0
		Heavily Mod.	1	1	0	1	0	0	1	0
		Artificial	13	14	0	2	11	4	9	1
	Transitional	Natural	3	3	3	0	0	1	2	0
		Heavily Mod.	1	1	1	0	0	1	0	0
	Coastal	Natural	2	2	2	0	0	1	1	0
	TOTAL		**313**	**316**	**87**	**212**	**14**	**96**	**216**	**4**
TOP	River	Natural	39	39	16	16	7	22	15	2
		Heavily Mod. Reserv.	7	7	2	3	2	5	2	0
		Heavily Mod. River	1	1	1	0	0	1	0	0
		Artificial	1	0	0	0	1	0	0	0
	Lake	Natural	5	5	0	0	5	1	4	0
		Artificial	0	1	0	0	0	1	0	0
	Transitional	Natural	5	5	0	5	0	0	5	0
		Heavily Mod.	6	6	3	3	0	1	5	0
	Coastal	Natural	2	2	2	0	0	1	1	0
		Heavily Mod.	2	2	1	1	0	2	0	0
	TOTAL		**68**	**68**	**25**	**28**	**15**	**34**	**32**	**2**

RBD	Category and Nature			Number of SWB		Ecological Status/Pot. 1st cycle			Ecological Status/Pot. 2nd cycle		
				1st cycle	2nd cycle	Good or higher (*)	Less than good (**)	Unknown	Good or higher	Less than good	Unknown
GDQ	River	Natural		290	291	171	119	0	185	106	0
		Heavily Mod.	Reserv.	56	57	48	8	0	53	4	0
			River	46	47	12	34	0	14	33	0
	Lake	Natural		32	32	18	14	0	18	14	0
		Heavily Mod.		1	1	0	1	0	0	1	0
		Artificial		2	2	1	1	0	1	1	0
	Transitional	Heavily Mod.		13	13	2	11	0	2	11	0
	Coastal	Natural		3	3	3	0	0	3	0	0
	TOTAL			**443**	**446**	**255**	**188**	**0**	**276**	**170**	**0**
GYB	River	Natural		51	51	5	27	19	19	32	0
		Heavily Mod.	Reserv.	7	7	4	3	0	4	3	0
			River	7	7	0	4	3	3	4	0
	Lake	Natural		8	8	0	0	8	6	2	0
		Artificial		2	2	0	0	2	2	0	0
	Transitional	Heavily Mod.		10	10	3	7	0	3	7	0
	Coastal	Natural		8	8	8	0	0	7	1	0
		Heavily Mod.		4	4	2	0	2	0	4	0
	TOTAL			**97**	**97**	**22**	**41**	**34**	**44**	**53**	**0**
CMA	River	Natural		101	101	48	51	2	60	41	0
		Heavily Mod.	Reserv.	14	14	9	5	0	12	2	0
			River	17	17	1	16	0	3	14	0
		Artificial		1	1	0	1	0	0	1	0
	Lake	Natural		7	7	3	4	0	3	4	0
		Artificial		1	3	1	0	0	2	1	0
	Transitional	Natural		3	3	1	2	0	1	2	0
		Heavily Mod.		4	4	2	2	0	0	4	0
	Coastal	Natural		19	19	19	0	0	19	0	0
		Heavily Mod.		8	8	7	1	0	4	4	0
	TOTAL			**175**	**177**	**91**	**82**	**2**	**104**	**73**	**0**
SEG	River	Natural		69	69	28	41	0	35	34	0
		Heavily Mod.	Reserv.	15	13	12	3	0	8	5	0
			River	6	8	0	6	0	0	8	0
	Lake	Natural		1	1	0	1	0	0	1	0
		Heavily Mod.		2	2	0	2	0	0	2	0
		Artificial		3	3	2	1	0	3	0	0
	Transitional	Heavily Mod.		1	1	0	0	1	1	0	0
	Coastal	Natural		14	14	13	1	0	13	1	0
		Heavily Mod.		3	3	0	3	0	1	2	0
	TOTAL			**114**	**114**	**55**	**58**	**1**	**61**	**53**	**0**

RBD	Category and Nature		Number of SWB		Ecological Status/Pot. 1st cycle			Ecological Status/Pot. 2nd cycle		
			1st cycle	2nd cycle	Good or higher (*)	Less than good (**)	Unknown	Good or higher	Less than good	Unknown
JUC	River	Natural	257	257	104	83	70	82	175	0
		Heavily Mod. Reserv.	27	27	22	3	2	19	8	0
		Heavily Mod. River	16	16	3	13	0	4	12	0
		Artificial	4	4	1	1	2	2	2	0
	Lake	Natural	16	16	7	7	2	1	15	0
		Heavily Mod.	3	3	0	3	0	1	2	0
	Transitional	Heavily Mod.	4	4	0	0	4	2	2	0
	Coastal	Natural	16	16	12	4	0	13	3	0
		Heavily Mod.	6	6	0	0	6	3	3	0
	TOTAL		**349**	**349**	**149**	**114**	**86**	**127**	**222**	**0**
EBR	River	Natural	635	630	237	143	255	474	154	2
		Heavily Mod. Reserv.	56	60	0	0	56	33	27	0
		Heavily Mod. River	7	6	0	6	1	0	3	3
		Artificial	2	2	0	0	2	1	0	1
	Lake	Natural	62	58	0	0	62	31	27	0
		Heavily Mod.	43	43	0	0	43	27	15	1
		Artificial	5	5	0	0	5	0	5	0
	Transitional	Natural	5	3	0	0	5	2	1	0
		Heavily Mod.	3	13	0	0	3	11	2	0
	Coastal	Natural	3	3	3	0	0	3	0	0
	TOTAL		**821**	**823**	**240**	**149**	**432**	**582**	**234**	**7**
CAT	River	Natural	192	192	37	74	81	89	91	12
		Heavily Mod. Reserv.	13	13	9	4	0	8	5	0
		Heavily Mod. River	56	56	2	48	6	7	44	5
	Lake	Natural	26	26	7	16	3	7	17	2
		Heavily Mod.	1	1	0	0	1	0	0	1
	Transitional	Natural	22	22	6	14	2	5	14	3
		Heavily Mod.	3	3	0	3	0	0	3	0
	Coastal	Natural	28	28	17	10	1	17	11	0
		Heavily Mod.	5	5	0	3	2	0	3	2
	TOTAL		**346**	**346**	**78**	**172**	**96**	**133**	**188**	**25**
BAL	River	Natural	91	91	23	24	44	23	24	44
		Heavily Mod. Reserv.	3	3	0	0	3	0	0	3
	Transitional	Natural	30	30	19	5	6	19	5	6
		Heavily Mod.	6	6	4	2	0	4	2	0
	Coastal	Natural	37	36	27	4	6	23	7	6
		Heavily Mod.	5	5	0	0	5	0	1	4
	TOTAL		**172**	**171**	**73**	**35**	**64**	**69**	**39**	**63**

RBD	Category and Nature			Number of SWB		Ecological Status/Pot. 1st cycle			Ecological Status/Pot. 2nd cycle		
				1st cycle	2nd cycle	Good or higher (*)	Less than good (**)	Unknown	Good or higher	Less than good	Unknown
MEL	River	H.Mod.	River	1	1	0	1	0	0	1	0
	Coastal	Natural		2	2	2	0	0	2	0	0
		Heavily Mod.		1	1	0	0	1	1	0	0
		TOTAL		4	4	2	1	1	3	1	0
CEU	Coastal	Natural		2	2	2	0	0	2	0	0
		Heavily Mod.		1	1	0	1	0	0	1	0
		TOTAL		3	3	2	1	0	2	1	0
CAN (***)	Coastal	Natural		35	34	34	0	1	34	0	0
		Heavily Mod.		5	6	3	0	2	6	0	0
		TOTAL		40	40	37	0	3	40	0	0
TOTAL	River	Natural		3,627	3,480	1,516	1,495	616	2,008	1,412	60
		Heavily Mod.	Reserv.	406	421	199	135	72	252	159	10
			River	331	478	52	264	15	163	306	9
		Artificial		17	11	6	5	6	5	4	2
	Lake	Natural		227	220	65	81	81	101	117	2
		Heavily Mod.		61	56	6	10	45	33	21	2
		Artificial		41	50	10	12	19	22	27	1
	Transitional	Natural		120	116	63	40	17	56	51	9
		Heavily Mod.		60	70	17	35	8	28	42	0
	Coastal	Natural		212	211	179	24	9	176	29	6
		Heavily Mod.		48	49	20	9	19	25	18	6
		TOTAL		5,150	5,162	2,133	2,110	907	2,869	2,186	107

Assessment of the ecological status or potential of surface water bodies, by category and nature.

(*) Good or higher include natural water bodies with very good or good ecological status, and artificial or heavily modified water bodies with maximum or good ecological potential.

(**) Less than good include water bodies with moderate, deficient or poor ecological status or potential.

(***) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

Assessment of the chemical potential of surface water bodies

RBD	Category and Nature		Number of SWB		Chemical status 1st cycle			Chemical status 2nd cycle		
			1st cycle	2nd cycle	Good	Poor	Unknown	Good	Poor	Unknown
COR	River	Natural	86	87	48	9	29	83	4	0
		Heavily Mod. Reserv.	1	9	1	0	0	9	0	0
		Heavily Mod. River	22	21	13	7	2	18	3	0
	Lake	Natural	1	1	0	0	1	1	0	0
		Heavily Mod.	8	0	3	0	5	0	0	0
		Artificial	2	2	1	0	1	2	0	0
	Transitional	Natural	10	10	10	0	0	8	2	0
		Heavily Mod.	4	4	1	3	0	2	2	0
	Coastal	Natural	4	4	4	0	0	4	0	0
	TOTAL		**138**	**138**	**81**	**19**	**38**	**127**	**11**	**0**
COC	River	Natural	223	223	30	4	189	221	2	0
		Heavily Mod. Reserv.	10	10	5	0	5	7	3	0
		Heavily Mod. River	17	17	9	1	7	14	3	0
	Lake	Natural	5	5	2	0	3	5	0	0
		Artificial	2	2	0	0	2	2	0	0
	Transitional	Natural	16	16	16	0	0	16	0	0
		Heavily Mod.	5	5	4	1	0	4	1	0
	Coastal	Natural	14	14	14	0	0	14	0	0
		Heavily Mod.	1	1	1	0	0	1	0	0
	TOTAL		**293**	**293**	**81**	**6**	**206**	**284**	**9**	**0**
GAL	River	Natural	378	384	356	22	0	379	5	0
		Heavily Mod. Reserv.	17	19	13	4	0	18	1	0
		Heavily Mod. River	16	12	12	4	0	10	2	0
	Transitional	Natural	22	22	0	4	18	18	4	0
	Coastal	Natural	22	22	0	8	14	21	1	0
		Heavily Mod.	7	7	1	3	3	7	0	0
	TOTAL		**462**	**466**	**382**	**45**	**35**	**453**	**13**	**0**
MIÑ	River	Natural	221	204	39	7	175	196	8	0
		Heavily Mod. Reserv.	30	30	10	0	20	30	0	0
		Heavily Mod. River	19	38	7	0	12	36	2	0
	Lake	Natural	1	1	0	0	1	1	0	0
		Artificial	2	2	0	0	2	2	0	0
	Transitional	Natural	4	2	0	0	4	2	0	0
	Coastal	Natural	1	2	0	0	1	2	0	0
	TOTAL		**278**	**279**	**56**	**7**	**215**	**269**	**10**	**0**

RBD	Category and Nature			Number of SWB		Chemical status 1st cycle			Chemical status 2nd cycle		
				1st cycle	2nd cycle	Good	Poor	Unknown	Good	Poor	Unknown
DUE	River	Natural		608	479	587	21	0	464	15	0
		Heavily Mod.	Reserv.	42	42	42	0	0	37	1	4
			River	38	166	36	2	0	155	11	0
		Artificial		8	3	7	1	0	3	0	0
	Lake	Natural		12	9	12	0	0	8	1	0
		Heavily Mod.		2	5	2	0	0	5	0	0
		Artificial		0	5	0	0	0	5	0	0
	TOTAL			**710**	**709**	**686**	**24**	**0**	**677**	**28**	**4**
TAJ	River	Natural		191	191	185	6	0	191	0	0
		Heavily Mod.	Reserv.	58	58	57	1	0	58	0	0
			River	58	57	54	4	0	54	3	0
		Artificial		1	1	1	0	0	1	0	0
	Lake	Natural		7	7	7	0	0	7	0	0
		Artificial		9	9	9	0	0	9	0	0
	TOTAL			**324**	**323**	**313**	**11**	**0**	**320**	**3**	**0**
GDN	River	Natural		195	191	178	2	15	182	0	9
		Heavily Mod.	Reserv.	50	52	47	0	3	47	1	4
			River	4	8	1	0	3	5	0	3
	Lake	Natural		44	44	32	0	12	37	0	7
		Heavily Mod.		1	1	0	0	1	0	0	1
		Artificial		13	14	4	0	9	9	0	5
	Transitional	Natural		3	3	3	0	0	2	0	1
		Heavily Mod.		1	1	1	0	0	0	0	1
	Coastal	Natural		2	2	2	0	0	0	0	2
	TOTAL			**313**	**316**	**268**	**2**	**43**	**282**	**1**	**33**
TOP	River	Natural		39	39	20	10	9	22	13	4
		Heavily Mod.	Reserv.	7	7	2	3	2	5	2	0
			River	1	1	1	0	0	1	0	0
		Artificial		1	0	0	0	1	0	0	0
	Lake	Natural		5	5	0	0	5	5	0	0
		Artificial		0	1	0	0	0	1	0	0
	Transitional	Natural		5	5	0	5	0	0	5	0
		Heavily Mod.		6	6	3	3	0	3	3	0
	Coastal	Natural		2	2	2	0	0	2	0	0
		Heavily Mod.		2	2	0	2	0	0	2	0
	TOTAL			**68**	**68**	**28**	**23**	**17**	**39**	**25**	**4**

RBD	Category and Nature		Number of SWB		Chemical status 1st cycle			Chemical status 2nd cycle		
			1st cycle	2nd cycle	Good	Poor	Unknown	Good	Poor	Unknown
GDQ	River	Natural	290	291	279	11	0	277	14	0
		Heavily Mod. Reserv.	56	57	49	7	0	53	4	0
		Heavily Mod. River	46	47	40	6	0	43	4	0
	Lake	Natural	32	32	0	0	32	30	2	0
		Heavily Mod.	1	1	0	0	1	1	0	0
		Artificial	2	2	0	0	2	1	1	0
	Transitional	Heavily Mod.	13	13	12	1	0	12	1	0
	Coastal	Natural	3	3	3	0	0	3	0	0
	TOTAL		**443**	**446**	**383**	**25**	**35**	**420**	**26**	**0**
GYB	River	Natural	51	51	22	10	19	35	12	4
		Heavily Mod. Reserv.	7	7	7	0	0	6	1	0
		Heavily Mod. River	7	7	2	2	3	5	2	0
	Lake	Natural	8	8	0	0	8	6	2	0
		Artificial	2	2	0	0	2	2	0	0
	Transitional	Heavily Mod.	10	10	9	0	1	7	3	0
	Coastal	Natural	8	8	8	0	0	8	0	0
		Heavily Mod.	4	4	2	0	2	1	3	0
	TOTAL		**97**	**97**	**50**	**12**	**35**	**70**	**23**	**4**
CMA	River	Natural	101	101	88	2	11	95	6	0
		Heavily Mod. Reserv.	14	14	14	0	0	11	3	0
		Heavily Mod. River	17	17	14	0	3	14	1	2
		Artificial	1	1	1	0	0	1	0	0
	Lake	Natural	7	7	7	0	0	7	0	0
		Artificial	1	3	1	0	0	2	0	1
	Transitional	Natural	3	3	2	0	1	3	0	0
		Heavily Mod.	4	4	2	0	2	1	3	0
	Coastal	Natural	19	19	19	0	0	19	0	0
		Heavily Mod.	8	8	8	0	0	3	5	0
	TOTAL		**175**	**177**	**156**	**2**	**17**	**156**	**18**	**3**
SEG	River	Natural	69	69	64	5	0	63	3	3
		Heavily Mod. Reserv.	15	13	12	3	0	12	1	0
		Heavily Mod. River	6	8	3	3	0	5	3	0
	Lake	Natural	1	1	1	0	0	1	0	0
		Heavily Mod.	2	2	1	1	0	2	0	0
		Artificial	3	3	3	0	0	3	0	0
	Transitional	Heavily Mod.	1	1	0	0	1	1	0	0
	Coastal	Natural	14	14	12	2	0	13	1	0
		Heavily Mod.	3	3	1	2	0	0	3	0
	TOTAL		**114**	**114**	**97**	**16**	**1**	**100**	**11**	**3**

RBD	Category and Nature			Number of SWB		Chemical status 1st cycle			Chemical status 2nd cycle		
				1st cycle	2nd cycle	Good	Poor	Unknown	Good	Poor	Unknown
JUC	River	Natural		257	257	141	8	108	236	14	7
		Heavily Mod.	Reserv.	27	27	14	1	12	22	5	0
			River	16	16	7	5	4	8	8	0
		Artificial		4	4	1	1	2	3	1	0
	Lake	Natural		16	16	2	0	14	12	4	0
		Heavily Mod.		3	3	0	2	1	2	1	0
	Transitional	Heavily Mod.		4	4	0	0	4	4	0	0
	Coastal	Natural		16	16	16	0	0	16	0	0
		Heavily Mod.		6	6	0	0	6	4	2	0
	TOTAL			**349**	**349**	**181**	**17**	**151**	**307**	**35**	**7**
EBR	River	Natural		635	630	0	32	603	599	31	0
		Heavily Mod.	Reserv.	56	60	0	0	56	60	0	0
			River	7	6	0	2	5	4	2	0
		Artificial		2	2	0	0	2	2	0	0
	Lake	Natural		62	58	0	0	62	58	0	0
		Heavily Mod.		43	43	0	0	43	43	0	0
		Artificial		5	5	0	0	5	5	0	0
	Transitional	Natural		5	3	0	0	5	3	0	0
		Heavily Mod.		3	13	0	0	3	13	0	0
	Coastal	Natural		3	3	0	0	3	3	0	0
	TOTAL			**821**	**823**	**0**	**34**	**787**	**790**	**33**	**0**
CAT	River	Natural		192	192	111	14	67	123	44	25
		Heavily Mod.	Reserv.	13	13	8	0	5	9	3	1
			River	56	56	26	16	14	18	31	7
	Lake	Natural		26	26	1	0	25	1	0	25
		Heavily Mod.		1	1	0	0	1	0	0	1
	Transitional	Natural		22	22	0	0	22	0	0	22
		Heavily Mod.		3	3	0	0	3	0	0	3
	Coastal	Natural		28	28	28	0	0	26	2	0
		Heavily Mod.		5	5	3	0	2	0	3	2
	TOTAL			**346**	**346**	**177**	**30**	**139**	**177**	**83**	**86**
BAL	River	Natural		91	91	0	0	91	23	0	68
		Heavily Mod.	Reserv.	3	3	0	0	3	0	0	3
	Transitional	Natural		30	30	0	0	30	19	0	11
		Heavily Mod.		6	6	0	0	6	4	0	2
	Coastal	Natural		37	36	0	0	37	23	0	13
		Heavily Mod.		5	5	0	0	5	0	0	5
	TOTAL			**172**	**171**	**0**	**0**	**172**	**69**	**0**	**102**

RBD	Category and Nature			Number of SWB		Chemical status 1st cycle			Chemical status 2nd cycle		
				1st cycle	2nd cycle	Good	Poor	Unknown	Good	Poor	Unknown
MEL	River	H.Mod.	River	1	1	0	1	0	0	0	1
	Coastal	Natural		2	2	2	0	0	2	0	0
		Heavily Mod.		1	1	0	0	1	1	0	0
		TOTAL		4	4	2	1	1	3	0	1
CEU	Coastal	Natural		2	2	0	0	2	2	0	0
		Heavily Mod.		1	1	0	0	1	0	0	1
		TOTAL		3	3	0	0	3	2	0	1
CAN (*)	Coastal	Natural		35	34	32	0	3	34	0	0
		Heavily Mod.		5	6	3	0	2	6	0	0
		TOTAL		40	40	35	0	5	40	0	0
TOTAL	River	Natural		3,627	3,480	2,148	163	1,316	3,189	171	120
		Heavily Mod.	Reserv.	406	421	281	19	106	384	25	12
			River	331	478	225	53	53	390	75	13
		Artificial		17	11	10	2	5	10	1	0
	Lake	Natural		227	220	64	0	163	179	9	32
		Heavily Mod.		61	56	6	3	52	53	1	2
		Artificial		41	50	18	0	23	43	1	6
	Transitional	Natural		120	116	31	9	80	71	11	34
		Heavily Mod.		60	70	32	8	20	51	13	6
	Coastal	Natural		212	211	142	10	60	192	4	15
		Heavily Mod.		48	49	19	7	22	23	18	8
		TOTAL		5,150	5,162	2,976	274	1,900	4,585	329	248

Assessment of the chemical status of surface water bodies, by category and nature.

Comparison between the first and the second planning cycle.

(*) CAN: Aggregated data of the seven Canary Islands river basin districts. Provisional information for the second cycle pending final approval of the river basin management plan.

GOBIERNO DE ESPAÑA
MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA
SECRETARÍA DE ESTADO DE MEDIO AMBIENTE
DIRECCIÓN GENERAL DEL AGUA