

Template for summary reports in accordance with article 7 of the Protocol on Water and Health adopted by the Meeting of the Parties at its second session (Bucharest, 23-25 November 2010)

Part One

General aspects

1. Were targets and target dates established in your country in accordance with article 6 of the Protocol?

YES NO IN PROGRESS

Even though the existing legislation covers up most of the points established in the Protocol, a Spanish Plan is being drawn with the coordination of all public authorities involved.

2. Were they published and, if so, how?

Considering that the Plan is still under development, no publication has been done. Nevertheless, most of the targets are already implemented in the Spanish legislation.

3. Has your country established national or local arrangements for coordination between competent authorities for setting targets? If so please describe, including information on which public authority(ies) took the leadership and coordinating role, which public authorities were involved and how coordination was ensured.

The coordination between the Ministry of Health, Social Services and Equality and the Ministry of Agriculture, Food and Environment has been necessary to set the targets, and it must continue in order to achieve their implementation.

With regard to water and health matters, the Spanish government has transferred the competency of several areas to Autonomous Communities and Local entities, so a coordination process has to be undertaken whenever these matters are addressed. Therefore special efforts must be done in order to coordinate the public authorities involved.

4. Which existing national and international strategies and legislation were taken into account?

The existing European legislation and its complex transposition into the Spanish law, which in some aspects can be even more stringent than the former, have been considered when setting the targets.

Currently there are several National Plans regarding sanitation or discharges that are included as a mean to achieve the targets set.

5. Was cost-benefit analysis of targets set performed, and if so how?

The European Water Framework Directive, that aims to manage European water resources and eventually achieve their good status, establishes in article 9 that the principle of recovery of the costs of water services, including environmental and resource costs, shall be taken into account and that economic analysis shall be conducted.

Following the “polluter pays principle”, a tariff will be set for every discharge according to the volume of water discharged, the nature, characteristics and degree of pollution of the discharge and the status of the receiving water.

6. What has been done in your country to ensure public participation in the process of target setting in accordance with article 6, paragraph 2, and how was the outcome of public participation taken into account in the final targets set?

Public participation is required by the European Water Framework Directive in order to approve River Basin Management Plans, where objectives are set for water resources and measures established.

In the European Union it is considered of the utmost importance to involve stakeholders, citizens, non-governmental organisations (NGOs) or local communities, by consultation processes or active participation, through the complaints procedures, in the legislation implementation process when environment issues are involved to achieve greater transparency in the establishment of objectives.

7. Provide information on the process by which this report has been prepared, including information on which public authorities had the main responsibilities, which other stakeholders were involved, etc.

The Ministry of Health, Social Services and Equality, responsible for health matters at a national level and the Ministry of Agriculture, Food and Environment, responsible for environmental issues are to be accounted for as the organisms to lead the development of the Plan that will comply with the Protocol on Water and Health.

The competent departments in each Ministry studied the legislation and set targets in accordance to Spanish laws and detailed or proposed further targets if necessary.

Considering that some of the competencies regarding the subject approached has been transferred to regional or local administration the data had to be harvested from different sources.

8. Report any particular circumstances that are relevant for understanding the report, e.g., whether there is a federal and/or decentralized decision-making structure, or whether financial constraints are a significant obstacle to implementation (if applicable).

9. Please describe whether and, if so, how emerging issues relevant to water and health (e.g., climate change) were taken into account in the process of target setting.

Part Two

Common indicators¹

I. Quality of the drinking water supplied

A. Context of the data

Please provide general information related to the context of the data provided under sections B and C below:

1. What is the population coverage (in millions or per cent of total national population) of the water supplies reported under this indicator?

94% of census population (47,150,819) in Spain in 2011

2. Do the water supply systems reported here supply the urban population only or both the urban and rural populations?

Both the urban ($\geq 5,000$ people) and rural ($< 5,000$ people) populations

3. Specify where the samples/measurements are taken (e.g., treatment plant outlet, distribution system or point of consumption).

At the treatment plant outlet, reservoir, distribution system and point of consumption

4. In the reports, the standards for compliance assessment signify the national standards. If national standards for reported parameters deviate from the WHO guideline values, provide information on the values (standards) used for calculation.²

¹ In order to allow an analysis of trends for all Parties under the Protocol, please use wherever possible 2005 — the year of entry into force of the Protocol — as the baseline year.

² In order to ensure consistency and quality of the data sets resulting from sampling programmes, countries may wish to consider ensuring compliance with appropriate international standards for sampling programmes. Examples of such international standards are the ISO 5667 family of standards, in particular:

- 5667-1:2006 Guidance on the design of sampling programmes and sampling techniques;
- 5667-3:2003 Guidance on the preservation and handling of water samples;
- 5667-5:2006 Guidance on sampling of drinking water from treatment works and piped distribution systems;
- 5667-11:2009 Guidance on sampling of groundwaters.

Annex I
Parameters and Parametric Values.

A. Microbiological Parameters.

	Parameter	Parametric Value	Notes
1	Escherichia coli	0 CFU/ 100 ml	
2	Enterococci	0 CFU/ 100 ml	
3	Clostridium perfringens (Including spores)	0 CFU/ 100 ml	1 and 2

NOTES:

- (1) When the determination is positive and the turbidity is greater than 5 NTU, cryptosporidium or other microorganisms or parasites must be investigated in the water ex ETAP or reservoir, if the health authority deems it appropriate.
- (2) Until the 1 of January 2004 Clostridium sulfite reductase could be measured instead of Clostridium perfringens. The conditions described in note 1 and the parametric value will be the same for both.

B.1. Chemical parameters.

	Parameter	Parametric Value	Notes
4	Antimony Up to 31/12/2003	5.0 µg/l 10.0 µg/l	
5	Arsenic Up to 31/12/2003	10 µg/l 50 µg/l	
6	Benzene Up to 31/12/2003	1.0 µg/l -	
7	Benzo(a)pyrene	0.010 µg/l	
8	Boron	1.0 mg/l	
9	Bromate: From 01/01/2009 From 01/01/2004 to 31/12/2008 Up to 31/12/2003	10 µg/l 25 µg/l -	1
10	Cadmium	5.0 µg/l	
11	Cyanide	50 µg/l	
12	Copper	2.0 mg/l	
13	Chromium	50 µg/l	
14	1,2-Dichloroethane Up to the 31/12/2003	3.0 µg/l -	
15	Fluoride	1.5 mg/l	
16	Polycyclic aromatic hydrocarbons (PAH) Sum of: Benzo(b)fluoranthene Benzo(ghi)perylene Benzo(k)fluoranthene Indeno(1,2,3-cd)pyrene	0.10 µg/l µg/l µg/l µg/l µg/l	
17	Mercury	1.0 µg/l	
18	Microcystin Up to 31/12/2003	1 µg/l -	2
19	Nickel Up to 31/12/2003	20 µg/l 50 µg/l	
20	Nitrate	50 mg/l	3
21	Nitrites Distribution network In the water ex ETAP/reservoir	0.5 mg/l 0.1 mg/l	3 and 4
22	Pesticides - Total	0.50 µg/l	5 and 6
23	Individual pesticide Except for the case of: Aldrin Dieldrin Heptachlor Heptachlor epoxide	0.10 µg/l 0.03 µg/l 0.03 µg/l 0.03 µg/l 0.03 µg/l	6
24	Lead From 01/01/2.014 From 01/01/2.004 to 31/12/2013	10 µg/l 25 µg/l	

	Up to 31/12/2003	50	µg/l	
25	Selenium	10	µg/l	
26	Trihalomethanes (THMs): Sum of: from 01/01/2.009 From 01/01/2004 to 31/12/2008 Up to 31/12/2003 Bromodichloromethane Bromoform Chloroform Dibromochloromethane	100 150 - - - - -	µg/l µg/l µg/l µg/l µg/l µg/l µg/l	7 and 8
27	Trichloroethene + Tetrachloroethene: Up to 31/12/2003 Tetrachloroethene Trichloroethene	10 - - -	µg/l µg/l µg/l µg/l	

NOTES:

- (1) It shall be measured when ozone is used in the purification of drinking water and it shall be measured at least in the water ex ETAP.
- (2) It shall be only measured if there is reason to suspect of eutrophication in water from the catchment, microcystin shall be measured in the water ex ETAP or water tower.
- (3) The condition that $[\text{nitrate}]/50 + [\text{nitrite}]/3 < 1$, the square brackets signifying the in mg/l for nitrate (NO₃) and nitrite (NO₂), must be met.
- (4) Necessary only when chloramination is used as a disinfectant.
- (5) The sum of all pesticides defined in Article 2 (10), which are likely to be present in water.
- (6) The Autonomous Communities shall ensure that necessary measures are taken in order to make them available to the health authority and the suppliers of the water supply, the list of plant protection pesticides mainly used in each one of the seasons against agricultural plagues and that they may be present in the water resources likely to be used for the production of water intended for human consumption.
- (7) Shall be measured when chlorine or its derivatives are used in the purification treatment.
If chlorine dioxide is used, chlorites in the water ex ETAP or water tower shall be measured.
- (8) Whenever the levels are above the parametric value, 2,4,6-triclorofenol or other by-products of the disinfection shall be measured in the water ex ETAP or water tower.

B.2. Chemical Parameters that are monitored according to specifications of the product.

	Parameter	Parametric Value	Notes
28	Acrylamide	0.10 µg/l	1
29	Epichlorohydrin	0.10 µg/l	1
30	Vinyl chloride	0.50 µg/l	1

NOTE

- (1) These parametric values refer to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water.

The company that commercialises these products shall provide water suppliers and the fitters of the installations within the premises with the documentation that credits the maximum release of the commercial product that is in contact with the water intended for human consumption when it is used according to the specifications of use provided by the manufacturer.

C. Indicator parameters.

	Parameter	Parametric Value	Notes
31	Coliform bacteria	0 CFU/ 100 ml	
32	Colony count 22 °C At the ex ETAP In the distribution network	100 CFU/ 1 ml No abnormal change	
33	Aluminum	200 µg/l	
34	Ammonium	0.50 mg/l	
35	Total organic carbon	No abnormal change mg/l	1
36	Residual combined chlorine	2.0 mg/l	2, 3 and 4
37	Residual free chlorine	1.0 mg/l	2 and 3

38	Chloride	250	mg/l	
39	Colour	15	mg/l Pt/Co	
40	Conductivity	2,500	µS/cm at 20°C	5
41	Iron	200	µg/l	
42	Manganese	50	µg/l	
43	Odour	3 at 25°C	Index of dilution	
44	Oxidisability	5.0	mg O ₂ /l	1
45	pH:			5 and 6
	Minimum parametric value	6.5	pH units	
	Maximum parametric value	9.5	pH units	
46	Taste	3 at 25 °C	Index of dilution	
47	Sodium	200	mg/l	
48	Sulphate	250	mg/l	
49	Turbidity:			
	At the ex ETAP and/or reservoir	1	NTU	
	In the distribution network	5	NTU	

NOTES:

- (1) Total organic carbon shall be measured for supplies of more than 10,000 m³ a day otherwise oxidisability shall be measured.
- (2) The parametric values refer to levels in the distribution network. These parameters could be also analysed in situ. In a food-production undertaking, this parameter need not be measured in water of the food processes
- (2) It shall be analysed when chlorine or its by-products are used in the water purification treatment. If chlorine dioxide is used, chlorites shall be measured in the water ex ETAP.
- (3) It shall be measured only when chloramination is used as a disinfectant.
- (5) The water should not be corrosive nor contain incrusting substances. The result to calculate the Index of Langelier should be included between +/- 0.5.
- (6) For a food-production undertaking, the minimum value may be reduced to 4.5 pH units.

D Radioactivity.

	Parameter	Parametric Value	Notes
50	Total indicative dose	0.10 mSv/year	1
51	Tritium	100 Bq/l	
52	Gross alpha activity	0.1 Bq/l	
53	Gross beta activity	1 Bq/l	2

NOTES:

- (1) Excluding tritium, potasio⁴⁰, radon and radon decay products.
- (2) Excluding potasio⁴⁰ and tritium

B. Bacteriological quality

Indicator to be used: WatSan_S2: The percentage of samples that fail to meet the national standard for *E. coli* and the percentage of samples that fail to meet the national standard for *Enterococci*.

<i>WatSan_S2</i>	<i>Baseline value (2010)</i>	<i>Current value (2011)</i>
E. coli	0.31%	0.39%
Enterococci	0.44%	1.70%

C. Chemical quality

Indicator to be used: WatSan_S3. All countries shall monitor and report on the percentage of samples that fail to meet the national standard for chemical water quality with regard to the following:

- Fluoride;
- Nitrate and nitrite;³
- Arsenic;
- Lead;
- Iron.

Parties shall also identify five additional physico-chemical parameters that are of special concern in their national or local situation (e.g., pesticides).

<i>Substance</i>	<i>Baseline value (2010)</i>	<i>Current value (2011)</i>
Fluoride	1.87%	2.55 %
Nitrate and nitrite	Nitrate: 2.99% Nitrite: 0.04%	Nitrate:2.58 % Nitrite: 0.06 %
Arsenic	0.96%	1.46 %
Lead	0.21%	0.17 %
Iron	0.86%	0.84 %
Additional physico-chemical ⁴ parameter 1: THMs	0.55%	0.55%
Additional physico-chemical parameter 2: _____		
Additional physico-chemical parameter 3: _____		

³ As defined in the WHO Guidelines for drinking-water quality.

⁴ It is recommended to take into account new and emerging pressures such as climate change or agriculture practices.

Additional physico-chemical parameter 4: _____		
Additional physico-chemical parameter 5: _____		

II. Reduction of the scale of outbreaks and incidence of infectious diseases potentially related to water

In filling out the following table, please specify if the numbers reported are related to all exposure routes or only related to water (in which there is epidemiological or microbiological evidence for water to have facilitated infection).⁵

	<i>Incidence</i>		<i>Number of outbreaks all exposure routes</i>	
	<i>Baseline (2009)</i>	<i>Current value (2010)</i>	<i>Baseline (2009)</i>	<i>Current value (2010)</i>
Cholera				
Bacillary dysentery (shigellosis)	0.49 cases out of every 100,000 people	0.34 cases out of every 100,000 People	5	5
EHEC ^a				
Viral hepatitis A	5.94 cases out of every 100,000 People	2.23 cases out of every 100,000 people	97	74
Typhoid fever	0.16 cases out of every 100,000 people	0.15 cases out of every 100,000 people	3	1

^a Enterohaemorrhagic E. coli.

⁵ If possible, please distinguish between autochthonous and imported cases

III. Access to drinking water

<i>Percentage of population with access to drinking water</i>	<i>Baseline value (2006)</i>	<i>Current value (2010)</i>
Total	99.99%	99.99%
Urban	100%	100%
Rural	99%	99%

Please specify how access to drinking water is defined and calculated in your country.

Data Estimated

The WHO/UNICEF⁶ Joint Monitoring Programme (JMP) for Water Supply and Sanitation defines access to water supply in terms of the types of technology and levels of service afforded. Access to water-supply services is defined as the availability of at least 20 litres per person per day from an “improved” source within 1 kilometre of the user’s dwelling. An “improved” source is one that is likely to provide “safe” water, such as a household connection, a borehole, a public standpipe or a protected dug well.

If your definition of access to drinking water from which the above percentages are calculated differs from that provided by the JMP, please provide the definition and describe your means of calculation.

IV. Access to sanitation

<i>Percentage of population with access to sanitation</i>	<i>Baseline value (2006)</i>	<i>Current value (2010)</i>
Total	91%	98%
Urban		
Rural		

Please specify how access to sanitation is defined and calculated in your country.

⁶ United Nations Children’s Fund.

V. Effectiveness of management, protection and use of freshwater resources

Water quality

On the basis of national systems of water classification, the percentage of the number of water bodies or the percentage of the volume (preferably) of water⁷ falling under each defined class (e.g., in classes I, II, III, etc. for non-EU countries; for EU countries, the percentage of surface waters of high, good, moderate, poor and bad ecological status, and the percentage of groundwaters/surface waters of good or poor chemical status).

For non-European Union Countries

Status of surface waters

<i>Percentage of surface water falling under class^a</i>	<i>Baseline value (specify the year)</i>	<i>Current value (specify the year)</i>
I		
II		
III		
IV		
V		
Total number/volume of water bodies classified		
Total number/volume of water bodies in the country		

^a Rename and modify the number of rows to reflect the national classification system.

Status of groundwaters

<i>Percentage of groundwaters falling under class^a</i>	<i>Baseline value (specify the year)</i>	<i>Current value (specify the year)</i>
I		
II		
III		
IV		
V		
Total number/volume of groundwater bodies classified		
Total number/volume of groundwater bodies in the country		

^a Rename and modify the number of rows to reflect the national classification system.

⁷ Please specify.

For European Union countries

Ecological status of surface water bodies

The following table reflects the percentage of the number of water bodies in each ecological status category. These figures are only for rivers and lakes, transitional waters and coastal waters are not included. Only water bodies with data for the indicator and year considered are taking into account. The total number of water bodies considered may change from one year to other.

Ecological status of water bodies - 2010 / 2011(**)				
	Baseline value(year 2010)		Current value (year 2011)	
Ecological status	IBMWP*	IPS	IBMWP	IPS
High status	34.15%	48.56%	38.22%	45.27%
Good status	21.67%	34.73%	20.00%	36.09%
Moderate status	24.14%	10.44%	22.74%	11.54%
Poor status	14.29%	5.74%	13.56%	6.51%
Bad status	5.75%	0.52%	5.48%	0.59%
TOTAL NUMBER OF WATER BODIES	609	383	730	338

*IBMWP – Iberian Biological Monitoring Working Party

IBMWP is a qualitative indicator based on benthic invertebrate fauna used to assess the ecological status of water bodies in Spain. Its calculation is based on scores assigned to taxa (family level) depending on the ecological preferences and sensibility to organic pollution. Totaling the scores for each identified family gives us the IBMWP score.

*IPS - Specific Polluosensitivity Index

IPS is a quantitative indicator index based on phytoplankton communities (diatoms) used to assess the ecological status of water bodies in Spain. Its calculation is based on abundance (A) of species (j) taking into account sensibility (Sj) and tolerance (Vj) scores assigned to taxa (species and genus level) depending on the tolerance and sensibility to pollution.

$$IPS = 4.75 \times \frac{\sum A_j \times S_j \times V_j}{\sum A_j \times V_j} - 3.75$$

** Only for rivers. Data are provided in disaggregated results according to the different biological indicators because the aggregation algorithm is still under discussion among the river basin authorities.

Chemical status of surface water bodies

Percentage of surface water classified as of	Baseline value year (2010)	Current value year (2011)
	WQI*	WQI
Good	86.84 %	90.16 %
Poor	13.16 %	9.84 %

*WQI- General quality of surface water

The index WQI is an indicator of the general quality of surface waters used in Spain since 1990. Its calculation is based on lineal equations that incorporate a selection of 23 weighted parameters related to water quality. The final value goes from 0 (very bad quality) to 100 (unpolluted).

Status of groundwaters

<i>Percentage of groundwaters classified as</i>	<i>Baseline value (specify the year)</i>	<i>Current value (specify the year)</i>
Good quantitative status		
Good chemical status		
Poor quantitative status		
Poor chemical status		
Total number/volume of groundwater bodies classified		
Total number/volume of groundwater bodies in the country		

Please provide any needed information that will help put into context and aid understanding of the information provided above (e.g., coverage of information provided if not related to all water resources, how the quality of waters affects human health).

Water use

Please provide information on the water exploitation index at the national and river basin levels for each sector (agriculture, industry, domestic), i.e., the mean annual abstraction of freshwater by sector divided by the mean annual total renewable freshwater resource at the country level, expressed in percentage terms.

The index is calculated using the mean annual abstraction of freshwater by sector divided by the mean annual total renewable freshwater resource at the country level, expressed in percentage terms

<i>Water exploitation index</i>	<i>Baseline value (2002)</i>	<i>Current value (2006)</i>
Agriculture	0.22	0.18
Industry ^a	0.01	0.008
Domestic use ^b	0.05	0.05

^a Please specify whether the figure includes both water abstraction for manufacturing industry and for energy cooling.

^b Please specify whether the figure only refers to public water supply systems or also individual supply systems (e.g., wells).

Part Three

Targets and target dates set and assessment of progress

I. Quality of the drinking water supplied (art. 6, para. 2 (a))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

The target is to provide safe and clean drinking water, without any content of microorganism, parasitic or substance in a quantity or concentration that could pose a risk to human health, in addition to complying with the current legislation.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/regulatory actions:

- Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption.
- Royal Decree 140/2003, of 7 February by which health criteria for the quality of water intended for human consumption are established.
- SCO Order 1591/2005 of 30 May about the national drinking water information system.
- SSI/304/2013 Order of 19 February, about substances for treatment of water used for the production of drinking water.

Difficulties have arisen in rural areas supply, i.e., the ones supplying towns of less than 5.000 inhabitants.

3. Assess the progress achieved towards the target.

- Frequent use of the information system via internet in the last 10 years by over a 7,000 professional to inform of the quality of drinking water and the characteristics of supplies representing more than 94% of the Spanish population.
- Increase of the information collected regarding drinking water quality and the characteristics of supplies over the last 10 years.
- Increase of the compliance with sampling frequency standards according to the current legislation.
- Maintenance of the compliance of over 99% of the water supplied with the current legislation.
- Corrective measures are taken in shorter terms of time after the detection of incidents in recent years.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

Since 2012, Spain is working on the development of a software tool to facilitate the elaboration of the Water Security Plan for all Spanish supplies. This tool will contribute to improve the management of risks in the supplies: early detection, corrective measures decisions and implementation of preventive measures.

5. If you have not set a target in this area, please explain why.

II. Reduction of the scale of outbreaks and incidents of water-related disease (art. 6, para. 2 (b))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

The epidemiological surveillance of water outbreaks in Spain is carried out through the National Epidemiological Surveillance Network (RENAVE). Autonomous Communities notify the National Epidemiological Centre of the outbreaks and epidemiological situations related to any cause (etiology) or transmission mechanism that occur on its territory.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/regulatory:

- Royal Decree 2210/1995, of 28th December, by which the National Epidemiological Surveillance Network is created.

3. Assess the progress achieved towards the target.

- Reduction in the number of outbreaks notified regarding drinking water during the past eight years.
- In Spain, just like in other developed countries, over the years it has been observed a decline in the notification of water outbreaks related to bacterial etiology and an increase in notification of outbreaks caused by viruses and parasites. This is probably due to the improvement of laboratory diagnosis and of notification process, along with other factors such as resistance of these pathogens (mainly norovirus and some protozoa) to water chemical disinfection processes.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

III. Access to drinking water (art. 6, para. 2 (c))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

The amount of water supplied shall be sufficient to cover the hygienic and sanitary needs of the population and for the development of supplied area; the minimum objective should be 100 liters per capita per day.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/regulatory actions:

- Royal Decree 140/2003, of 7 February by which health criteria for the quality of water intended for human consumption are established.

3. Assess the progress achieved towards the target.

- Spanish Official data show that 99.99 percent of population has access to drinking water with an average amount of 130-140 liters per capita per day.
- It has been achieved a decrease in consumption after saving campaigns of water household consumption, due to reiterated drought situations in some regions.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

IV. Access to sanitation (art. 6, para. 2 (d))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Given that the European legislation aims to protect and achieve a good status for all waters, the reduction of the pollution caused by urban waste waters seems essential. The streamlining of the different Directives comes up as a necessity.

Access to sanitation is considered within the National Plan for Water Quality (PNCA) in the following terms:

- To comply with the requirements of the Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment.
- To contribute to the compliance in 2015 with the environmental objectives set for water bodies according to the Water Framework Directive (WFD).

The National Plan for Water Quality (PNCA) covers the period from 2007 to 2015, coinciding with the deadline set by the European Water Framework Directive to achieve a “good status” for all waters.

The national legislation establishes requirements and deadlines for:

- Collective systems (article 4 of Royal Decree- Law 11/1995 and article 2 of Royal Decree 509/1996)
- Secondary treatment of urban waste water (article 5 of Royal Decree- Law 11/1995 and article 5 Royal Decree 509/1996)
- Treatment of urban waste water discharged in sensitive areas (article 7 of Royal Decree- Law 11/1995 and article 6 of Royal Decree 509/1996)

Once the previous plan finished (it covered the period 1995-2005 and aimed to guarantee that both the treatment and quality of the discharge meet the terms of the European legislation), an analyses and evaluation of its impact was carried out and used as basis to draw up the current Plan and establish the actions to be taken.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/ regulatory actions:

- Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment
- Royal Decree- Law 11/1995, of 28 December, which sets the standards for the treatment of urban waste water.
- Royal Decree 509/1996, of 15 March, which details the standards for the treatment of urban waste water. It has been modified by:
 - Royal Decree 2116/1998, of 2 October, which establishes the standards that have to be applied for the treatment of urban waste water.
 - Royal Decree 1290/2012, of 7 September, which establishes the standards that have to be applied for the treatment of urban waste water.

- National Plan for Water Quality 2007-2015 (PNCA).

The National Plan for Water Quality 2007-2015 includes more than 2,100 measures regarding sanitation and depuration, with an approximate cost of 19,000 million Euros.

3. Assess the progress achieved towards the target.

According to the objectives included in the national legislation, a list of activities was achieved, such as: systems extension and improvement of manifolds and emissaries, modification and improvement of the existing facilities; adjustment of the collective systems and treatments given the increase of flow rates and pollutants loads reached; incorporation of secondary processing in facilities that just have primal processing; and inclusion of more rigorous processing for the elimination of nutrients, in those facilities already built that discharge in sensitive areas.

The percentage of the Spanish population connected to sewage has significantly increased from 91% in 2006 to 98% in 2010. The 2% of the remaining unconnected population is widely dispersed in the territory in agglomerations of less than 2,000 inhabitants.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

V. Levels of performance of collective systems and other systems for water supply (art. 6, para. 2 (e))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

VI. Levels of performance of collective systems and other systems for sanitation (art. 6, para. 2 (e) continued)

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

The level of performance of collective systems and other systems for sanitation is considered within the National Plan for Water Quality (PNCA) in the following terms:

- To fulfill with the requirements of the Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment.
- To contribute to the compliance in 2015 with the environmental objectives set for water bodies by the Water Framework Directive.

The European Directive concerning urban waste water treatment establishes that member states shall ensure that urban waste water entering **collecting systems** shall before discharge be subject to secondary treatment or an equivalent treatment as follows:

- at the latest by 31 December 2000 for all discharges from agglomerations of more than 15,000 p.e. (population equivalent).
- at the latest by 31 December 2005 for all discharges from agglomerations of between 10,000 and 15,000 p.e.
- at the latest by 31 December 2005 for discharges to fresh-water and estuaries from agglomerations of between 2,000 and 10,000 p.e.

It also specifies in Annex 1 that collecting systems shall take into account waste water treatment requirements and that their design, construction and maintenance shall be undertaken in accordance with the best technical knowledge not entailing excessive costs, notably regarding:

- Volume and characteristics of the urban waste water.
- Prevention of leaks.
- Limitation of pollution of receiving waters due to storm overflows.

The National Plan for Water Quality (PNCA) covers the period 2007-2015, coinciding with the deadline established by the Water Framework Directive to achieve the environmental objectives.

Prior to 2005 there was another plan which covered the period 1995-2005 and aimed to guarantee that both the treatment and the quality of the discharge met the terms of the European legislation. Once it finished, an analyses and evaluation of its impact was carried out and used as basis to draw up the current Plan and set the actions to be taken.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

See point 2 in Section "IV. Access to sanitation".

3. Assess the progress achieved towards the target.

The efforts to reduce pollution and protect the environment from the adverse effects of waste water discharges have paid off. Since the adoption of the National Plans, both the performance of collective systems and of treatment plants have increased significantly. Even more so if the situation previous to the adoption of the Protocol is taken into consideration.

The percentage of the Spanish population connected to sewage has significantly increased from 91% in 2006 to 98% in 2010. The 2% of the remaining unconnected population is widely dispersed in the territory in agglomerations of less than 2,000 inhabitants.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

VII. Application of recognized good practices to the management of water supply, (art. 6, para. 2 (f))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

- Improvement of the management of the supplies from catchment, treatment plants, storage and water distribution.
- Improvement of the drinking water quality control.
- Improvement of the transmission of information to citizens.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/regulatory actions:

- Royal Decree 140/2003, of 7 February by which health criteria for the quality of water intended for human consumption are established.
- SCO Order 1591/2005 of 30 May about the national drinking water information system.
- Drinking Water Information System.

3. Assess the progress achieved towards the target.

- Frequent use of the information system via internet in the last 10 years by over a 7,000 professional to inform of the quality of drinking water and the characteristics of supplies representing more than 94% of the Spanish population.
- Increase of the information collected regarding drinking water quality and the characteristics of supplies over the last 10 years.
- Increase of the compliance with sampling frequency standards according to the current legislation.
- Maintenance of the compliance of over 99% of the water supplied with the current legislation.
- Corrective measures are taken in shorter terms of time after the detection of incidents in recent years.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

Since 2012, Spain is working on the development of a software tool to facilitate the elaboration of Water Security Plan for all Spanish supplies. This tool will contribute to improve the management of risks in the supplies: early detection, corrective measures decisions and implementation of preventive measures.

5. If you have not set a target in this area, please explain why.

VIII. Application of recognized good practice to the management of sanitation (art. 6, para. 2 (f) continued)

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

The European legislation concerning urban waste water treatment, and its transposition to the Spanish law, specifies that collecting systems shall take into account waste water treatment requirements and that their design, construction and maintenance shall be undertaken in accordance with the *best technical knowledge* not entailing excessive costs.

Regarding sanitation, Spain has developed the National Plan for Water Quality (PNCA). Its main goal is not only to fulfill the legal requirements set on urban waste water treatment but also to contribute to meeting in 2015 the environmental objectives set for water bodies according to the WFD. In that respect, the measures established in the Plan take into account recognized good practice.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

See point 2 in Section "IV. Access to sanitation".

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

IX. Occurrence of discharges of untreated wastewater (art. 6, para. 2 (g) (i))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

According to the Directive 91/271/EEC, the discharge of untreated wastewater is not allowed.

In addition, the Royal Decree 849/1986, of 11 April, passing the Regulation on Hydraulic Public Property establishes that all activity subject to cause pollution or degradation of the public hydraulic property and, in particular, the discharge of waters and residual products which contaminate continental waters, requires administrative authorization. This authorization will be given when the discharge of waste waters is collecting to a treatment plant that ensures that the degree of treatment is suitable to the quality of the receiving area.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/ regulatory actions

- Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment.
- Royal Decree- Law 11/1995, of 28 December, which sets the standards for the treatment of urban waste water.
- Royal Decree 849/1986, of 11 April, passing the Regulation on Hydraulic Public Property.
- Royal Decree 606/2003, of 23 de May, which modified the Royal Decree 849/1986.
- National Plan for Water Quality 2007-2015 (PNCA).
- “Zero Tolerance” Plan on water discharges.

Currently the Ministry of Agriculture, Food and Environment is developing a **National Discharge Census** where all data related with discharge authorization will be compiled. The data will come from the River basin authorities that must register and control all the authorization, in their own **Discharge Authorizations Census**.

Following the “polluter pays principle”, a tariff will be set for every discharge according to the volume of water discharged, the nature, characteristics and degree of pollution of the discharge and the status of the receiving water. According to the pollution load established on the administrative authorization a particular coefficient is applied to the discharge tariff and legal measures are undertaken. Non-authorized discharges are prosecuted.

Inspection actions are carried out by the river basin authorities in order to control all discharges.

The compliance with the current legislation concerning wastewater treatment is the main goal of the National Plan for Water Quality 2007-2015 (PNCA). Within the plan it is included the coordination with the “Zero Tolerance” Plan on water discharges, that requires an authorization for every discharge even those from water treatment plants.

3. Assess the progress achieved towards the target.

The development of the National Discharge Census and the “Zero Tolerance” Plan on water discharges imply that all emissions will be known and controlled. Discharges of wastewater without their proper authorization are not allowed and authorized discharges have the treatment to be applied set when registered.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

X. Occurrence of discharges of untreated storm water overflows from wastewater collection systems to waters within the scope of the Protocol (art. 6, para. 2 (g) (ii))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

According to the Directive 91/271/EEC, national authorities shall take measures to limit pollution of receiving waters from storm water overflows via collecting systems under unusual situations, such as heavy rain.

Due to these needs the Royal Decree 849/1986, of 11 April, passing the Regulation on Hydraulic Public Property and the Royal Decree-Law 11/1995 have been modified in order to include measures and specific conditions to prevent pollution from storm waters.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

These national regulations have established the requirements applied to industrial and urban discharges to prevent pollution from storm water.

The petitioner of the discharge authorization shall describe the characteristics of the sewage systems and spillways, and the measures, actions and installations provided to limit pollution from storm water. In the case of requests by local and autonomous regions, the statement shall also include measures to maximize the volume transport to the sewage treatment plants and runoff and reduce the impact of floods on sanitation systems in rain events.

As a consequence, the discharge authorization shall establish the measures, actions and installations for regulating storm water overflows from wastewater, as well as control elements thereof, necessary to limit the pollution that they produce and achieve the environmental objectives of the receiving waters.

3. Assess the progress achieved towards the target.

According to the deadline established in the national regulation, the River Basin District should have an inventory overflow points from wastewater collection systems which will form part of the inventory of the type and magnitude of the significant anthropogenic pressures of the water bodies.

The measures and specific conditions to prevent pollution from storm water, taking into account technical standards, shall be incorporated in the discharge authorization, both new and already existing ones.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

It will be necessary to dictate technical standards which specify and develop the design procedures of the installations to manage overflows from wastewater. These standards will be used in establishing the conditions of discharge authorizations.

5. If you have not set a target in this area, please explain why.

XI. Quality of discharges of wastewater from wastewater treatment installations to waters within the scope of the Protocol (art. 6, para. 2 (h))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

The European legislation concerning urban waste water treatment, and its transposition to the Spanish law, specifies the treatment that must be applied to urban waste water discharges. The requirements establish are:

- For discharges from urban waste water treatment plants with secondary treatment or an equivalent treatment:

Parameters	Concentration	Minimum percentage of reduction ⁽¹⁾	Reference method of measurement
Biochemical oxygen demand (BOD5 at 20° C) without nitrification ⁽²⁾	25 mg/l O ₂	70-90 40 under Article 4 (2)	Homogenized, unfiltered, undecanted sample. Determination of dissolved oxygen before and after five-day incubation at 20 ° C± 1° C, in complete darkness. Addition of a nitrification inhibitor
Chemical oxygen demand (COD)	125 mg/l O ₂	75	Homogenized, unfiltered, undecanted sample Potassium dichromate
Total suspended solids	35 mg/l ⁽³⁾ 35 under Article 4 (2) (more than 10,000 p.e.) 60 under Article 4 (2) (2,000-10,000 p.e.)	90 ⁽³⁾ 90 under Article 4 (2) (more than 10,000 p.e.) 70 under Article 4 (2) (2,000-10,000 p.e.)	- Filtering of representative sample through a 0.45 µm filter membrane. Drying at 105 °C and weighing - Centrifuging of a representative sample (for at least five mins with mean acceleration of 2,800 to 3,200 g), drying at 105 °C and weighing

⁽¹⁾ Reduction in relation to the load of the influent.

⁽²⁾ The parameter can be replaced by another parameter: total organic carbon (TOC) or total oxygen demand (TOD) if a relationship can be established between BOD5 and the substitute parameter.

⁽³⁾ This requirement is optional.

Analyses concerning discharges from lagooning shall be carried out on filtered samples; however, the concentration of total suspended solids in unfiltered water samples shall not exceed 150 mg/l.

- For discharges from urban waste water treatment plants to sensitive areas which are subject to eutrophication (human-induced enrichment with nutrients):

Table 2: Requirements for discharges from urban waste water treatment plants to sensitive areas which are subject to eutrophication as identified in Annex II.A (a). One or both parameters may be applied depending on the local situation. The values for concentration or for percentage of reduction shall apply.			
Parameters	Concentration	Minimum percentage of reduction ⁽¹⁾	Reference method of measurement
Total phosphorus	2 mg/l P (10,000 – 100,000 p.e.) 1 mg/l P (more than 100.000 p.e.)	80	Molecular absorption spectrophotometry
Total nitrogen ⁽²⁾	15 mg/l N (10,000 – 100,000 p.e.) 10 mg/l P (more than 100,000 p.e.) ⁽³⁾	70-80	Molecular absorption spectrophotometry
<p>⁽¹⁾ Reduction in relation to the load of the influent.</p> <p>⁽²⁾ Total nitrogen means: the sum of total Kjeldahl-nitrogen (organic n + NH₃), nitrate (NO₃) nitrogen and nitrite (NO₂) nitrogen.</p> <p>⁽³⁾ Alternatively, the daily average must not exceed 20 mg/l N. This requirement refers to a water temperature of 12 °C or more during the operation of the biological reactor of the waste water treatment plant. As a substitute for condition concerning the temperature, it is possible to apply a limited time of operation, which takes into account the regional climatic conditions. This alternative applies if it can be shown that paragraph 1 of Annex I.D is fulfilled.</p>			

The compliance with the current legislation is the main goal of the National Plan for Water Quality 2007-2015 (PNCA). Within the plan it is included the coordination with the “Zero Tolerance on water discharges” Plan, that requires an authorization for every discharge including those from water treatment plants.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

See point 2 in Section “IV. Access to sanitation”.

3. Assess the progress achieved towards the target.

Spain has made a major effort in improving the percentage of population connected to sewage systems in the last years. In 2006, around 6 million people were estimated to be unconnected to sewage systems – mostly from small and isolated populations– whereas this number was less than 1.4 million in 2010.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

XII. Disposal or reuse of sewage sludge from collective systems of sanitation or other sanitation installations (art. 6, para. 2 (i), first part)

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

XIII. Quality of wastewater used for irrigation purposes (art. 6, para. 2 (i), second part)

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

The quality criteria for the reuse of water for irrigation purposes, according to Spanish regulations for the reuse of water (Royal Decree 1620/2007 of 7 December), which entered into force on 7 December of 2007, is as follows:

SUMMARY OF REQUIRED QUALITY FOR IRRIGATION PURPOSES

Intended use of water	Maximum acceptable value (MAV)				
	Intestinal Nematodes ¹	Escherichia Coli	Suspended solids	Turbidity	Other criteria
1. Urban					
1.a. Residential. Irrigation of private gardens	1 egg/10 L	0 (CFU ² /100mL)	10 mg/L	2 NTU ³	Other contaminants ⁴ . Legionella spp 100 CFU/L (risk of aerosolization)
1.b. Services. Landscape irrigation of urban areas (parks, sports grounds and similar)	1 egg/10 L	200 CFU/100 mL	20 mg/L	10 NTU	(risk of aerosolization)
2. Agricultural					
2.a. Crop irrigation using a system whereby reclaimed water comes into direct contact with edible parts of crops to be eaten raw	1 egg/10 L	100 CFU/100mL Based on a 3- class sampling plan.	20 mg/L	10 NTU	Other contaminants. Legionella spp 1000 CFU/L (risk of aerosolization)
2.b.1. Irrigation of crops for human consumption using application methods that do not prevent direct contact of reclaimed with edible parts of the plants, which are not eaten raw but after an industrial treatment process	1 egg/10 L	1,000 CFU/100 mL Based on a 3- class sampling plan.	35 mg/L	No set limit	Other contaminants. Taenia saginata and Taenia solium: 1 egg/L (when irrigating pasture land for milk- or meat producing animals)
2.b.2. Irrigation of pasture land for milk- or meat-producing animals					Pathogens (Salmonella, etc)
2.c.1. Localized irrigation of tree crops whereby reclaimed water is not allowed to come into contact with fruit for human consumption		1			Other contaminants

2.c.2. Irrigation of ornamental flowers, nurseries greenhouses whereby reclaimed water does not come into the crops	1 egg/10 L	10,000 CFU/100 mL	35 mg/L	No set limit	Legionella spp 100 CFU/L (risk of aerosolization)
3. Recreational					
Golf course irrigation	1 egg/10L	200 CFU/100 mL	20 mg/L	10 NTU	Other contaminants. Legionella spp. 100 CFU/L (risk of aerosolization)
4. Environmental uses					
4.a. Irrigation of woodland, green areas and other spaces not accessible to the public	No set limit	No set limit	35 mg/L	No set limit	Other contaminants.
4.b. Silviculture					

¹At least the following genera must be included in all quality categories: Ancylostoma, Trichuris and Ascaris.

²Colony forming units.

³Nephelometric turbidity units.

⁴Included in the based effluent disposal permit: discharge of these contaminants to the environment must be limited. In the case of hazardous substances, use of reclaimed water must comply with environmental quality standards.

The National Water Council and regional and local authorities were involved in drawing up these regulations.

More complete and detailed regulations were necessary to ensure that appropriate solutions were found concerning water reuse. Thus, in 2007, the Spanish Government established the basic conditions for the reuse of water, specifying the water quality required for treated wastewaters according to the uses considered. The public health authorities were also involved in those aspects related to water reuse that are not provided for in technical specifications and that may pose a risk to public health.

The addition of the quality criteria applicable to the reuse of reclaimed water depends on its final use. These criteria must be considered as the minimum compulsory on its final use.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/regulatory actions:

- Royal Decree 1620/2007, of 7 December, which sets the legal framework for the reuse of treated wastewater (Official publication: BOE nº. 294. 8/12/2007)

Informational actions:

- Guide to the application of Spanish legal framework for reuse of treated water (2010) Ministry of environment, rural and marine affairs.

Management measures:

- Implementation of the procedures to obtain the permit for the reuse of treated wastewater required by law.
- Development of the analytical control to check the compliance with the requirements set for the use of treated water. Establishment of minimum sampling and testing frequencies for each parameter.

- Approval of the governmental initiatives or plans to promote the reuse of water and a more efficient use of water resources.

3. Assess the progress achieved towards the target.

In recent years, estate, regional and local public administrations have conducted programmes and plans for the use of reclaimed water within their respective jurisdictions. And, the number of authorizations for discharges involving an authorization for the regeneration of the water and the number of procedures for obtaining a water reuse concession have increased significantly since the adoption of the regulations cited.

The National Plan for Water Quality (PNCA) covers the period from 2007 to 2015 and has an approximate cost of 19,007 million Euros. The main goals of this plan are to comply with the requirements of the Directive concerning urban waste water treatment and to help in the compliance in 2015 with the environmental objectives set for water bodies according to the Water Framework Directive.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

XIV. Quality of waters which are used as sources for drinking water (art. 6, para. 2 (j), first part)

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

The targets in this area are related to those established in articles 6 and 7 of Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy (WFD):

- Target 1. Identification and register, as protected areas, of waters used for the abstraction of drinking water by the revision of available water registers in the river basins, including:

- all bodies of water used for the abstraction of water intended for human consumption providing more than 10 m³ a day as an average or serving more than 50 persons, and
- those bodies of water intended for such future use.

- Target 2. Assessment and implementation of the water quality monitoring programmes of waters used for drinking water abstraction.

The monitoring sites are set in those water bodies which provide more than 100 m³ a day as an average.

In accordance with the article 7 of WFD, the quality criteria of waters used as sources for drinking water will meet the objectives set for all of the surface water bodies and the Member States shall ensure that under the water treatment regime applied, and in accordance with Community legislation, the resulting water will meet the requirements of Directive 80/778/EEC as amended by Directive 98/83/EC.

The analysed parameters are all those that pose a risk to water quality. They are selected among those regulated by the drinking water Decree and the Water Pollutants and Priority Substances Decree (Royal Decree 140/2003 of 7 February, and Royal Decree 60/2011 of 22 January).

Before these current objectives had been fixed, these water bodies were monitored according to the parameters established in the Spanish regulations derived from Directives 75/440/EEC and 79/869/EEC, concerning the quality required of surface water intended for the abstraction of drinking water in the Member States (already repealed) and transferred to Spanish legislation.

National and regional authorities were involved in the implementation of the above targets.

Drinking water supply will be guaranteed if good water quality is achieved. For that reason we should aim to meet the objective set for water bodies, reaching at least good water status and to avoid its deterioration.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/regulatory actions:

- Amendments of Royal Legislative Decree 1/2001, of 20 July, approving the consolidated text of the Water Law, the Public Water Rules and Regulations of Water Planning.
- Royal Decree 60/2011, of 22 January, on environmental quality standards in the field of water policy.
- Royal Decree 907/07, of 6 July, with the Spanish Regulation for Water Planning
- ORDER ARM/2656/2008, of 10th September, where Water Planning Instructions are approved.
- Application of criteria for water quality established in the Royal Decree 140/2003, of 7 February, establishing the health criteria for water quality for human consumption.

b) Management measures and information actions:

- Implementation of the Water Safety plans in Spain: Development by National environmental and health authorities in collaboration with the Spanish association of drinking water suppliers (2012-2013) of the guidelines applicable at the various stages of the supply system with detailed assessment and prioritization of hazards and operational monitoring of water used for the abstraction of water intended for human consumption.
- Exchange of information with health authorities on the data derived from the identification and the register, as protected areas, of the bodies of water used for the abstraction of drinking water.

3. Assess the progress achieved towards the target.

- Improvement of the Monitoring Programs of chemical quality of waters used as sources for drinking water, specifically in all bodies of water that provide an average of over 100 m³ per day. The total number of stations in this program in 2011 amounted to 1,365.
- Improvement of the Register System in all river basins and the information provided by the managers of drinking water supplies through the National Information System of Water for Human Consumption (SINAC).
- Definition of the most important potential hazards for the different stages of collection and treatment of water intended for human consumption, including events and scenarios that may affect water quality and the estimation of the level of risk for each hazard based on the likelihood and severity of the consequences.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

XV. Quality of waters used for bathing (art. 6, para. 2 (j), second part)

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Due to the importance of the use of bathing water areas for human health, it is necessary to establish the quality health standards at national scale. These criteria will be applied to bathing waters and in those cases where there is not a specific bathing prohibition or a permanent advice against it.

Targets are set according to the Directive 2006/7/EC, of 15 February, concerning the management of bathing water quality, repealing Directive 76/160/EEC, and transposed by Royal Decree 1341/2007, of 11 October, concerning the management of bathing water quality.

- Target 1. Register of all bathing waters, as protected areas, according to article 6 of Water Framework Directive and supply more information so the public can choose where to bathe. Development of the National Information System of Bathing Waters (Náyade)
- Target 2. Development of Bathing Water Profiles by the Spanish river basin authorities:

A system of bathing water profiles, appropriate to provide a better understanding of risks, is used as basis for management measures. Bathing water profiles were established for the first time before the start of the 2009 bathing season. The deadline for developing profiles of all identified bathing waters is by the 20th of March each year.

The bathing water profile contains:

- A description of the physical, geographical and hydrological characteristics of the bathing water, and of other surface waters in the catchment area of the bathing water concerned, that could be a source of pollution, which are relevant to the purpose of Directive 2006/7/EC and as provided for in Directive 2000/60/EC.
- An identification and assessment of causes of pollution that might affect bathing waters and impair bathers' health.
- An assessment of the potential for proliferation of cyanobacteria.
- An assessment of the potential for proliferation of macro-algae and/or phytoplankton
- If the assessment of causes of pollution shows that there is a risk of short-term pollution, the following information is required:
 - the anticipated nature, frequency and duration of expected short-term pollution
 - details of any remaining causes of pollution, including management measures taken and the time schedule for their elimination
 - management measures taken during short-term pollution and the identity and contact details of bodies responsible for taking such action,
- The location of the monitoring point.

- Target 3. Application of new water quality criteria and the pass/fail approach to classification based on four classes: poor/sufficient/good/excellent.

All bathing waters are required to be classified as 'sufficient' by 2015. National and regional authorities were involved in the implementation of the above targets.

The revised Bathing Water Directive entered into force on 24 March 2006. The overall objective of the revised Directive remains the protection of public health whilst bathing, but it also offers an opportunity to improve management practices at bathing waters and to standardise the information provided to bathers across Europe.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/regulatory actions:

- Amendments of Royal Legislative Decree 1/2001, of 20 July, approving the Water Law.
- Royal Decree 1341/2007, October 11, concerning the management of bathing water quality.
- Amendments of Royal Decree 849/1986, of April 11, to regulate of Hydraulic Public Domain.

Management measures and information actions:

- Bathing Water Profiles of all every bathing waters which were established for the first time before the start of the 2009 bathing season.
- NAYADE. National Information System of Bathing Waters
- Assessment of Cyanobacteria in inland bathing waters. Associated risks. Environmental risk management in inland bathing waters. Publication of a Spanish national guideline for assessing cyanobacteria blooms in inland waters: "Catalogue of planktonic cyanobacteria potentially toxic in Spanish continental waters (2011)" "

3. Assess the progress achieved towards the target.

- Over the last 20 years there has been an improvement of the quality of continental and coastal bathing waters.
- Improvement of the analytical method of the control parameters.
- Improvement of the notifications of information. Quality information of water and beach characteristics is available, as well as of the determinants that can modify the quality, in more than 2,000 bathing water points.
- Improvement of citizens access to information through NAYADE.
- Classification of most Spanish bathing water above the "sufficient" status.

The 2012 season was the second in which the criteria of the new legislation on bathing water have been applied. For that season's classification the values of the parameters E. coli and Intestinal enterococci from the three preceding bathing seasons were used, following the methods of assessment defined in Annexes I, II and IV of RD 1341/2007.

Classification of Spanish bathing water in 2012 season:

In inland waters, the distribution according to the classification of annual sampling points (230 sp) has been rated: Excellent: 54.0% Good: 25.4%, Sufficient: 8.0%, Poor: 12.7%.

In marine waters, the distribution according to the classification of annual sampling points (1,926 sp) has been rated: Excellent: 88.9%; Good: 5.7%; Sufficient: 2.9%, Poor: 2.5%.

- Preparation of Environmental profiles of all bathing waters. Assessment of the potential for proliferation of Cyanobacteria-2009 Bathing Season. Cyanobacterial monitoring and Chlorophyll a analysis in bathing sites.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

In 2014, it is planned to start with the development of a software tool to facilitate the preparation of a Water Security Plan for all Spanish beaches. This tool will contribute to improve the management of risks in coastal and continental beaches: early detection, establishment of corrective measures and implementation of preventive measures.

5. If you have not set a target in this area, please explain why.

XVI. Quality of waters used for aquaculture or for the production or harvesting of shellfish (art. 6, para. 2 (j), third part)

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Considering the economic importance of the production or harvesting of shellfish and aquaculture, the current legislation regarding the quality of waters used is extensive in Spain. The target set is no other than the compliance with the standards set and, if appropriate, the revision of such quality standards based on future scientific advances.

Autonomous Communities are competent in this area, though in order to unify criteria and coordinate different administrations the mariculture law provided that a suitable organism should be created within the Ministry of Agriculture, Food and Environment. The National Advisory Board for Marine Cultivation (JACUMAR), constituted in 1985, aims to facilitate the coordination of activities of the different Autonomous Communities and to monitor national plans. Along the same lines, but related to freshwater, the National Advisory Board for Continental Cultivation (JACUCON) was founded in 2002.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/ regulatory actions:

- Law 23/1984, of 5 June, of mariculture.
- Royal Decree 927/1988, of 9 July, which approves the Regulation of the Public Water Administration and water Planning (Annex 3: Quality due to inland waters in order to be suitable for fish life, Annex 4: Quality due to the water when required to protect or improve shellfish)
- Royal Decree 345/1993, of 5 March, which establishes the standards for water quality and production of shellfish and other marine invertebrates (Annex IV: Quality required for water in protected or improvement areas).
- Royal Decree 571/1999, of 9 April, which states the Technical-Sanitary standards for the production and marketing of bivalve shellfish (Annex I: Conditions applicable to the production areas)

Both National Advisory Boards not only coordinate, but also advise Autonomous Communities at a scientific level. They also maintain an inventory of aquaculture facilities and a register of the nationwide production.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

XVII. Application of recognized good practice in the management of enclosed waters generally available for bathing (art. 6, para. 2 (k))

This section is referred to swimming-pools, since enclosed waters are excluded from bathing water.

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Establishment of basic health-technician criteria related to water and air quality of swimming pools in order to protect the health of users facing potential physical, chemical or microbiological hazards, due to use of swimming pools.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

- Multiple regional regulations.
- Draft national regulatory project for which health technical criteria in pools are established. It will be published during the summer of 2013.

3. Assess the progress achieved towards the target.

Improvement in the management of health risks related to the use of swimming pools.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

In 2015, it is planned to start with the development of a software tool in order to facilitate the preparation of a Water Safety Plan for all Spanish public pools. This tool will contribute to the improvement of risk management in pools, water parks, spas: early detection, establishment of corrective measures and application of preventive measures.

5. If you have not set a target in this area, please explain why.

XVIII. Identification and remediation of particularly contaminated sites (art. 6, para. 2 (I))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

XIX. Effectiveness of systems for the management, development, protection and use of water resources (art. 6, para. 2 (m))

For each target set in this area:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

Management, protection and use of water resources are encompassed within the objectives marked by the Water Framework Directive. This European requirement establishes that water management is to be carried out at river basin district level, including coastal waters, through the development of river basin management plans and programmes of measures.

The Directive establishes a general objective, which is to achieve by 2015 the good status in all water bodies in Europe. In the case of surface water bodies, this means that good ecological status and good chemical status have to be achieved. Regarding artificial and heavily modified water bodies, the good ecological potential and good chemical status have to be reached. And, with respect to groundwater bodies, the good quantitative status and good chemical status have to be achieved.

In some cases, the normative allows to establish objectives that are different to the main one. In those water bodies, in which general environmental objectives are not achieved, it is possible to established exceptions; there are four possible exceptions:

- The deadlines established may be extended (for reasons of technical feasibility, disproportionate costs, or because natural conditions do not allow timely improvement in the status of the body of water) for the purposes of phased achievement of the objectives for bodies of water,
- The environmental objectives may be less stringent.
- Temporary deterioration in the status of bodies may be allowed.
- Failure to achieve good status as a result of new modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater or new sustainable human development activities

Several exceptions have been applied in Spain both in surface water bodies and groundwater bodies.

Management process is cyclical (every 6 years) and the main tool to achieve the goals is the “River Basin Management Plan”. The first management cycle covers the following deadlines: identification of River Basin Districts (RBD) and Authorities, characterization of river basin regarding pressures, impacts and economic analysis, finalisation and publication of the river basin management plan including the program of measures by 2009; to establish operational programmes of measures by 2012 and to meet environmental objectives by 2015.

Once the first management cycle is finished, a second management cycle will begin; during this cycle river basin management plans and programmes of measures will be reviewed.

On the other hand, there are also agreements with neighboring countries to manage international river basin districts, such as the Spanish-Portuguese Albufeira Convention and the Spanish-French Toulouse Convention. Besides, other international treaties are focused on the maintenance and improvement of different aquatic ecosystems taking into consideration health and environmental issues. These international treaties are also contributing to fulfill the requirements of the health-environment nexus (such as the OSPAR convention on the North Atlantic Ocean, the Barcelona Treaty on the Mediterranean Sea and others).

Apart from the WFD there are other regulations related to water quality, whose objectives have been detailed in other sections.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

Legal/ regulatory actions:

- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.
- Law 62/2003, of 30 December 2003, on fiscal measures, administrative measures and social order, which modified the text of the Water Law, approved by Royal Legislative Decree 1/2001, of 20th July. (Transposition of the Water Framework Directive through the article 129).
- Royal Decree 125/2007, which established the territorial jurisdiction of the RBD.
- Royal Decree 126/2007, which determinates the Committee of Competent Authorities.
- ORDER ARM/2656/2008, of 10th September, in which Water Planning Instructions are approved.

Each river basin authority establishes a plan and a program of measures for each River Basin District.

During such an ambitious planning process, it has been proven complex to coordination all the stakeholders and difficult to meet the deadlines established.

The delay in the approval of the River Basin Management Plans (2009) is due to several reasons:

- The planning process established in the Spanish legislation requires that every plan is subjected to an Environmental Strategic Assessment. In this process several successive phases are defined. One of these phases includes a public participation process and an Environmental Sustainability Report under the agreement of the responsible administrations.
- The Spanish political-administrative structure is not unilateral; it is established in order to achieve a balance between various positions, interests and responsibilities.
- In some Spanish River Basins District, responsibilities related to water planning, management and use of water resources were transferred from the Government to Regional Administration.

3. Assess the progress achieved towards the target.

In the last years, Spain has been making a great effort in the development of the river basin management plans compliant with article 13 of the WFD. The first cycle of river basin management is soon coming to an end and the second cycle is now starting. The main objectives in this second cycle is to achieve a better understanding of the economic issues on water management and also to perform a streamlining process with the current European and international policies on climate change and energy.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

XX. Additional national or local specific targets

In cases where additional targets have been set, for each target:

1. Describe the target, target date and baseline conditions. Please include information on whether the target is national or local, and intermediate targets as relevant. Also include information on the background and justification for the adoption of the target.

2. Describe the actions taken (e.g., legal/regulatory, financial/economic and informational/educational, including management measures) to reach the target, having regard to article 6, paragraph 5, and, if applicable, the difficulties and challenges encountered.

3. Assess the progress achieved towards the target.

4. In the review of progress achieved towards the target, has it appeared that the target and target date need to be revised, e.g., in the light of scientific and technical knowledge? If so, and if the revised target and target date have already been adopted, please describe them.

5. If you have not set a target in this area, please explain why.

Part Four

Overall evaluation of progress achieved in implementing the Protocol

In this part of the summary report, Parties shall provide an analysis and synthesis of the status of implementation of the Protocol. Such an overall evaluation should not only be based on the issues touched upon in the previous parts, but should also include, as far as possible, a succinct overview of implementation of article 9 on public awareness, education, training, research and development and information; article 10 on public information; article 11 on international cooperation; article 12 on joint and coordinated international action; article 13 on cooperation in relation to transboundary waters; and article 14 on international support for national action.

This analysis or synthesis should provide a succinct overview of the status of and the trends and threats with regard to waters within the scope of the Protocol sufficient to inform decision makers, rather than an exhaustive assessment of these issues. It should provide an important basis for planning and decision-making as well as for the revision of the targets set, as needed.

Part Five

Information on the person submitting the report

The following report is submitted on behalf of SPAIN [name of the Party or the Signatory] in accordance with article 7 of the Protocol on Water and Health.

Name of officer responsible for submitting the national report: Ms. Carmen Coletto Fiaño

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Telephone number: + 34 1 4535328

Name and address of national authority: SPANISH MINISTRY OF AGRICULTURE, FOOD AND ENVIRONMENT. General Directorate for Water. Deputy General Directorate for Water Planning and Sustainable Use of Water. Area of International Affairs.

C/Agustín de Betancourt, 25. E-28071 MADRID, SPAIN

Signature:

Date: 29 April 2013

Submission

Parties are required to submit their summary reports to the joint secretariat, using the present template and in accordance with the adopted guidelines on reporting, by **29 April 2013**. Submission of the reports ahead of this deadline is encouraged, as this will facilitate the preparation of analyses and syntheses to be made available to the third session of the Meeting of the Parties.

Parties are requested to submit, to the two addresses below, an original signed copy by post and an electronic copy either on a CD-ROM or by e-mail. Electronic copies should be available in word-processing software, and any graphic elements should be provided in separate files.

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