

IV.5 Water

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IV.5.1 Introduction and Summary

Despite 30 years of extensive EU water protection legislation, the general state of waters has not improved, with small rivers and groundwater in particular having deteriorated further, and the true state of the aquatic environment in terms of key hydrological and ecological parameters remaining largely unknown. This failure is partly due to extremely low quality implementation and enforcement, growing consumption and use of chemicals and partly due to the patchwork nature of European legislation. A patchwork which has failed to establish an overall objective for sustainable water management and lacks integration in relevant policy sectors – mainly agriculture, transport, energy, product policies and land use planning.

In 2000 the EU adopted a comprehensive new water law, the Water Framework Directive WFD, which for the first time established an overall objective for all surface, groundwater and coastal waters in the EU to be achieved by 2015. The WFD provides an umbrella for all relevant water policies, repeals a number of Directives, including the Freshwater, Shellfish Water, Groundwater and Dangerous Substances Directives by 2013¹⁹⁶, establishes close links with nature conservation and provides a wide range of management tools, including public involvement, long-term and integrative planning and water pricing. The Directives on Nitrate pollution from agriculture, Urban Waste Water Treatment and Bathing Water protection remain in place.

The overall objective of the WFD – “good status” - is described for all surface waters (rivers, lakes and coastal waters) in a normative way as a “slight deviation” from the aquatic biodiversity found or estimated to exist under conditions where there has been only very minor human impact. For groundwater, good status means that groundwater quality and quantity does not negatively impact surface water status or the ecology of terrestrial ecosystems which depend on groundwater. The strong ecological orientation of this European environmental objective is a novelty in European law. For the first time ever, it provides a truly environmental objective to be respected by all human activities and therefore asks for strong integration in all other policies at EU as well as at state level. However, the objective needs to be defined in quantitative terms largely at national or eco-regional level, which could lead to very different ambition levels in different countries. The quality of this national ecological standard setting process will be largely determined by the quality of the political and technical debate, administrative culture and civil society

¹⁹⁶ Council Directive 78/659/EEC on the quality of freshwaters to support fish life; Council Directive 79/923/EEC on the quality of shellfish waters; Council Directive 80/68/EEC on the protection of groundwater against pollution; and Directive 76/464/EEC on the pollution by dangerous substances.

involvement. Only if the benefits of a functioning and healthy aquatic ecosystem are made part of the wider public debate and the well-trodden paths of current water management are challenged by the wide range of already existing alternatives will it be possible to maintain the integrity of the WFD objective. In theory the WFD requires ecological objectives to be set irrespective of their socio-economic impact. Derogations from these objectives are possible afterwards if given conditions are met. However, in practice this purist separation rarely happens and decision makers will always want to know the “costs” of achieving a certain objective before agreeing to it out of opportunistic political reasons.

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Besides the overall ecological standards to be set at national level the WFD carries on the long tradition of establishing chemical quality standards. Those standards must support the ecological objective. The methodology for setting such individual standards is well developed although synergistic effects of the total pollution load are not taken into account and thus might be inappropriate for achieving the good ecological status. The WFD provides a harmonised EU approach to setting standards and for the first time implements the precautionary principle for chemicals that persist in the environment or could cause irreversible or long-term damage. This is probably one of the outstanding successes of ECO campaigns. Emissions of chemicals identified with such properties need to be phased out in order to achieve zero or natural background concentrations. Unfortunately the WFD does not provide the necessary control mechanisms (e.g. a ban on the use or marketing of a certain chemical) but relies mainly on a combined pollution control approach. This means Member States establish emission controls and limit values based on best available techniques or best environmental practices as developed under the Integrated Pollution and Prevention Control (IPPC) (*see chapter V.3.2*), Urban Waste Water Treatment, Nitrates, Dangerous Substances (*see chapters IV.5.7.2, IV.5.7.3 and IV.5.7.4*) or other relevant Directives. Together with general emission control measures (e.g. prior authorisation, licensing of activities etc...) those measures must lead to achieving the chemical quality standard. Otherwise emission controls must be strengthened. For many pollutants this approach will be inefficient as it fails to address the main emission pathway – their widespread use in every-day products. The future adoption and implementation of an ambitious new EU Chemicals Policy (**R**egistration, **E**valuation and **A**uthorisation of all **C**hemicals, REACH, *see chapter V.4.6.4.6*) could fill this gap.

The largest part of the WFD is devoted to planning and management measures in order to achieve the objectives. These measures include the setting up of river basin authorities, environmental and economical stock taking, a risk analysis of failing to achieve the objectives, public consultation and information, a programme of measures and finally the establishment of river basin management plans, which need to be periodically revised. The many administrative arrangements to be undertaken and EU reporting requirements are complex and pose a huge task for national governments to implement them. Considering the flexibility the Directive gives to Member States in setting the overall objective and the negative experience with implementation of old EU water laws, it is without doubt very important to have tight EU control and as much transparency as possible. On the other hand the real danger is that in the jungle of EU reporting requirements water managers and politicians will lose sight of what really matters– achieving a truly sustainable and transparent water management that restores and maintains the carrying capacity of aquatic ecosystems and contributes to halting further biodiversity decline.

IV.5.2 State of the aquatic environment in Europe

Rivers are sometimes described as the veins of the earth. They transport all water and all materials from or added to the land which they drain, and their volume, speed and dynamic are the result of the characteristics of the basin. This means that all human activities within a certain river basin will leave their mark on the rivers, the lakes and finally the coastal waters – even if such activities seem to be far away from the actual water course. Therefore the state of the aquatic environment cannot be described via a single line running through the land or a single parameter, but includes all groundwater, the river bed, the riparian zone, wetlands and flood plains and requires a wide range of parameters, of which the biological ones allow for the most integrated assessment.

The true state of European water resources and aquatic ecosystems is unknown. Monitoring programmes are inadequate or non-existent in many Member States, and where they are in place, their results often remain inaccessible to the public. According to the European Environment Agency, there is a large gap between what is required by the WFD in terms of ecological assessment and monitoring and what is undertaken by Member States and it is currently not possible to assess the ecological quality of European waters due to lack of information (EEA 2003, p.5). There are no dependable assessments of the status of rivers, lakes, coastal waters, wetlands and groundwater. The WFD will require an assessment system for the first time, delivering reliable and comparable ecological status data for all waters, regardless of the European region concerned. It is astonishing in a rich continent like Europe that the EU is currently unable to accurately indicate the extent of pollution and disruption of its aquatic resources.

The limited information available at EU level is the result of EU legislation dealing mainly with specific chemical pollution, e.g. BOD loads, pesticides, heavy metals, nutrients or specific activities, e.g. drinking water provision, waste water discharge. This data suggests that over the last two decades there has been some improvement in reducing phosphate and organic pollution, mainly through waste water treatment. But nitrate levels in groundwater and surface water remain high – in many places above the drinking water standard and almost everywhere leading to significant negative impacts on biodiversity. Pollution from heavily regulated chemicals and metals is decreasing, while pesticide contamination of drinking water resources is identified as a problem in many countries. But for most hazardous chemicals no information is available.

While the more obvious signs of river pollution -dead fish and foam floating on the surface - are fortunately seldom encountered in Europe today, more subtle biological effects have been detected. Trace quantities of endocrine disrupting chemicals, for instance, have been shown to interfere with the hormone regulation of fish, leaving them infertile. Hazardous chemicals such as these may be responsible for declining fish catches in several European countries, yet the exact mechanisms of action are extremely difficult to identify.

Natural rivers with intact riparian land have become a rarity in both northern and southern Europe and 57% of Europe's 89,000 km long coastal zones are used for agricultural, industrial or urban purposes. (EEA 2003)

At least two thirds of all drinking water in the EU depend on groundwater reserves. These valuable underground resources are not only jeopardised by pollutants, but also by excessive abstraction. 60% of European cities overexploit their groundwater resources (EEA 1995). Along the coastlines in Southern Europe and on many islands, seawater is already intruding into the depleted underground aquifers, making them unusable as drinking water. The main causes of this unsustainable use, apart from city supply, are irrigation and tourism. The water exploitation index in southern Europe has not improved since 1980 and the irrigated area has increased by 20% since 1985 (EEA 2000). Allocated irrigation water per hectare increased between 1993-1999 by 19% (EEA 2003b). This leads to the promotion of unsustainable water management solutions, like big inter-basin water transfers and dam constructions, as in the Spanish National Hydrological Plan published in 2000.

Alarming conclusions must be drawn from the European Environment Agency's reports. Despite an improvement in some seriously polluted rivers and lakes, the general pollution situation of European waters has not markedly improved since the 1980s. Groundwater as well as smaller water resources are specially threatened with further deterioration and many water resources are over-exploited, especially for agriculture in the South.

IV.5.3 From 1975 to the WFD in 2000 (see also chapter IV.5.7)

Water legislation was one of the first sectors to be covered by EU environmental policy and comprises more than 25 water-related directives and decisions. The first wave of legislation took place from 1975 to 1980, resulting in a number of directives and decisions which either lay down environmental quality standards (EQS) for specific types of water, like the Surface Water, Fish Water, Shellfish Water, Bathing Water and Drinking Water Directives, or established emission controls and emission limit values (ELV) for specific water uses, like the Dangerous Substances Directive and the Groundwater Directive. These directives were mainly based on the first Environmental Action Programme (1973), which called for both approaches to be used. In practice, however, the dual approach not only led to highly fragmented water legislation, but also to huge implementation problems. It proved less successful than expected in its environmental outcome.

The second wave of water legislation from 1980 to 1991 was less comprehensive. Apart from the introduction of two new instruments, the Nitrates and Urban Waste Water Treatment Directives, several 'daughter directives' implementing the Dangerous Substances Directive were adopted.

Due to this patchwork of legislation from the 1970s onwards, new and more co-ordinated water legislation was demanded by both Council and Parliament. During the 1990s, a major revision of the EU water policy was prepared, finally resulting in the Water Framework Directive 2000/60/EC¹⁹⁷. Not only will this directive repeal six earlier water directives and one regulation and effect a number of other pieces of water legislation, but it will also provide the basis for subsequent legislative initiatives.

¹⁹⁷ OJ L 327/1, 22.12.2000, p.1-72

The WFD tries in particular to reconcile the traditionally conflicting approaches of ELVs and EQSs. The crucial Directives to be repealed by the WFD in this respect are the Dangerous Substances and Groundwater Directives. While their emission limit approaches are in principle taken over by the WFD, it is doubtful whether this will result in an equivalent level of water protection. The EQSs set by the Surface Water, Shellfish and Fish Water Directives are a lot more easily taken up than the WFD 'good status' objective to be achieved by Dec 2015 for all EU waters.

The Drinking Water and Bathing Water Directives remain as free-standing directives, yet Member States are required to co-ordinate the protection of these waters under the scope of the WFD. The Directives stemming from the 'second wave' of water legislation, Urban Waste Water Treatment and Nitrates Directives, will not be repealed by the WFD, but some of them will be revised. Several of their requirements will have to be co-ordinated via the River Basin Management Plans. In addition, the achievement of the objectives for the 'protected areas' designated under the Nitrates and Urban Waste Water Treatment Directives is required by 2015 (Article 4).

IV.5.4 Implementation deficits and way forward

Hardly any of the water protection Directives has been fully implemented and enforced in the prescribed way or by the prescribed deadline (*Demmke 2000*), nor have its objectives been achieved. 13 Member States were found guilty by the European Court of Justice for non-compliance with water legislation in 54 cases concerning 10 Directives in the period 1998-2004. There are no reliable figures with regard to the number of infringements proceedings launched by the Commission and ECO complaints submitted. But from the Commission's 2003 report on the implementation of the Urban Waste Water Treatment Directive it can be assumed that a considerable number of infringement proceedings are resolved before a court judgement. Furthermore, from the experience with ECO complaints in the field of nature conservation, a very low percentage of complaints ever lead to infringement proceeding by the Commission.

The implementation situation may be called disastrous, and in terms of EU-wide common water protection standards, the Community is far from its goal. To add to the problem, during the first wave of water legislation, Member States were not obliged to report in detail on any progress in implementing and transposing EU water legislation. As a result, a lot of cases never came before the Commission and a huge number of infringements is likely not to have been the subject of legal proceedings. With Council Directive 91/692/EEC of 23 Dec 1991 on Standardising and Rationalising Reports on the Implementation of Certain Directives Relating to the Environment, Member States are obliged to report in detail on the implementation of environmental directives. Consequently, the number of cases against Member States that are brought before the European Court of Justice by the Commission because of implementation shortcomings has risen sharply.

What does the WFD do differently to overcome this serious problem? Firstly it establishes extensive reporting obligations and secondly the European Commission and Member States are engaged in a Common Implementation Strategy, which has already produced 13 thematic guid-

ance documents¹⁹⁸. Despite this encouraging start, two EEB surveys from January 2004 (*EEB 2004*) and November 2004 (*EEB and WWF 2005*) revealed that the quality of the national transposition laws tends to be poor. Half of all Member States have not clearly stated the overall WFD objectives in their laws and most countries have established rather weak competent authorities to deliver the WFD. With regard to the quality of implementation, the picture is not very bright either. Almost none of the Member States have taken early public involvement in the WFD implementation seriously although the situation improved in 2004. Ecological data which Member States should have collected already to ensure a smooth running of the Intercalibration exercise is missing (*see chapter IV.5.5.1*).

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IV.5.5 Environmental objectives under the Water Framework Directive WFD

The WFD aims to protect the physical and biological integrity of all aquatic ecosystems and hence establish a basis for moving towards sustainable human water use. Environmental protection is thus one of the main objectives of the Directive. The integrated and ecologically oriented assessment of the surface water status with its corresponding objectives are central instruments.

The environmental objectives are set out in article 4 of the WFD. The overall objective is a ‘good status’ to be achieved for all waters by Dec 2015.

For surface waters, ‘good status’ comprises a ‘good ecological’ and a ‘good chemical status’. Ecological status is determined by biological, hydro-morphological (e.g. the habitat conditions) and physico-chemical quality elements. The point of reference is given by the biological parameters of undisturbed waters. These are waters with only ‘very minor’ human impacts (*see chapter IV.5.5.1*). The good chemical status is determined by existing surface water quality standards, still to be developed new EU legislation setting standards for EU relevant pollutants (“priority substances”) and national standards for national or regional relevant pollutants following a prescribed methodology in the WFD (*see chapter IV.5.5.2*).

For groundwater, ‘good status’ is determined by a good ‘quantitative’ and a ‘good chemical’ status. Good quantitative status is achieved when the abstraction is less than the natural recharge and additionally sufficient water is available for surface waters and groundwater dependent terrestrial ecosystems to avoid any significant damage to them. Good chemical status is achieved when existing quality standards are met, e.g. Nitrates and Pesticides, and the chemical contamination has no significant negative impacts on surface waters or dependent terrestrial ecosystems and allows safe drinking water supply (*see chapter IV.5.5.3*).

This ‘integrative’ approach, which extends current chemical water quality targets to water quantity, habitat quality and biological targets, is an improvement in the protection of our aquatic environment. Under the WFD, waters have to be protected and enhanced in a more ‘holistic’ manner. This will require rehabilitation measures such as the provision of ecologically oriented

¹⁹⁸ All guidance documents developed under the Common Implementation Strategy for the Implementation of the Water Framework Directive can be found at <http://europe.eu.int/comm/environment/water/water-framework/implementation.html>. A comprehensive and critical assessment of those guidance documents has been published by EEB and WWF in 2004.

water flows to support natural biodiversity. The risks stemming from chemical pollution not covered by traditional monitoring (because of its complexity or synergies) should now be detected through the required ecological assessment. As soon as the biological system in a given water body reacts negatively on chemical contamination, the causes should be identified and controlled in order to achieve 'good ecological' status.

In parallel to the good status objective, article 4 of the WFD also calls for i) prevention any further deterioration in the status of surface and groundwater, ii) a progressive reduction in pollution from priority substances and a phasing out of emissions from priority hazardous substances for surface waters and iii) a progressive reduction in groundwater pollution, in order to reverse any significant and sustained upward trend in the concentration of any pollutant. The first clause is clearly a stand-still clause to avoid the repetition of past water management errors and is logically the first measure needed to ensure that the objectives can be achieved. Clauses ii) and iii) reiterate existing EU chemical water quality objectives and should in a precautionary way support the achievement of the ecological objectives, recognising that our knowledge of the causal relationship between chemical contamination and biological reaction is limited. The stated aim of phasing out the emission of priority hazardous substances which is independent of whether there is scientific proof of specific environmental damage or not is novel and is the legal transposition of a European Commission and Member States commitment under the 1998 Convention for the protection of the North-East Atlantic¹⁹⁹.

IV.5.5.1 GOOD ECOLOGICAL STATUS FOR SURFACE WATERS - ARTICLE 4.1(A)

The application of ecological assessments and the exact definition of the 'good ecological status' objective need further clarification. In its Annexes II and V, the WFD gives a first 'guideline' with working instructions and normative definitions, but specific numerical values, e.g. to characterise 'good ecological status', still need to be developed.

The WFD divides ecological status into five classes as following:

ECOLOGICAL STATUS CLASSIFICATION	NORMATIVE DESCRIPTION	COLOUR CODE
High	<i>No, or only very minor, anthropogenic alterations to the values of the physico-chemical and hydromorphological quality. The biological quality elements show no, or only very minor, evidence of distortion. These are the reference conditions and communities.</i>	Blue
Good	<i>Physico-chemical conditions ensure ecosystem functioning and biological quality elements deviate only slightly from the reference.</i>	Green
Moderate	<i>Biological quality elements deviate moderately from the reference.</i>	Yellow
Poor	<i>To be defined by Member States</i>	Orange
Bad	<i>To be defined by Member States</i>	Red

¹⁹⁹ Sintra Statement, OSPAR Convention.

The first step is to group all surface waters, rivers, lakes and coastal waters in their respective ecological types. Secondly for each ecological type biological reference values have to be derived. Therefore one needs to find waters under undisturbed or only very minor impacted conditions – this means surface waters the ecosystem of which is unlikely to be impacted by human activities, like agriculture, air pollution, infrastructure works, water abstractions or diversions. The reference values for relevant biological parameters are derived from these reference waters. In many parts of Europe it will not be easy to identify such surface waters and thus historical or modelled values might be used. Thirdly, the biological boundary which the WFD uses as a reference point to determine which elements ‘deviate slightly’ has to be set. This reference point will in effect be an ecological standard as everything below it will be deemed as failing to meet WFD objectives.

What sounds like a rather straight forward process is highly complex and would result in very different standards across Europe – meaning that ‘good status’ in Sweden would probably not be comparable to ‘good status’ in Italy. The WFD therefore provides several safety-nets. Firstly, it does not rely solely on biological quality elements but requires the setting of quality standards for specific pollutants and general physico-chemical parameters (e.g. temperature, oxygen, nutrients) in a legally binding way and requires assessment of hydro morphological (e.g. flow dynamics, substrate, tide) elements to support the ecological standard (*CEC 2003*). Secondly a so-called “one out – all out principle” is applied concerning all the different biological, physico-chemicals and hydromorphological quality elements (like oxygenation condition or composition and abundance of benthic invertebrate fauna) defining “good status”, which means that the worst quality element determines the overall status.

And finally, the WFD establishes a joint European process – the so-called “Intercalibration” - to ensure that the national ecological assessment systems are in line with the WFD normative definitions and that the standard values are comparable between all states. This Intercalibration exercise is ongoing and has to end in 2006 (*CEC 2003*). It has already become clear that Member States have failed to collect the relevant data and lack the political ambition to make this Intercalibration exercise a success. It is likely that a repetition of the exercise will be necessary, once data is available from the monitoring required to be in place by 2006 under the WFD. Otherwise there is a danger that the WFD will do no more than confirm existing insufficient national assessment systems, making a nonsense of the entire process.

IV.5.5.2 GOOD CHEMICAL STATUS – ARTICLE 4.1 AND 16

The WFD’s objective is to achieve “good chemicals status”, which is part of the overall “good status”, to progressively reduce pollution and to phase out emissions of priority hazardous substances. Therefore, Member States and the EU are required to set quality standards as well as emission controls for specific chemicals, in particular substances or groups of substances on the indicative list in Annex VIII²⁰⁰ and the priority list in Annex X to the Directive. It is important to note here that action at Community level always involves a legislative process. As there is no legal hierarchy between secondary legislation, e.g. between the WFD and its Daughter Directives, any new law can change or override the WFD requirements.

²⁰⁰ This indicative list comprises virtually all known pollutants or groups of pollutants.

IV.5.5.2.1 EU quality standards and emission controls

For specific substances, the EU sets Community-wide standards which have to be met as part of the objective of achieving 'good chemical status'. Community standards existing at the time of entry into force of the WFD (inter alia the Daughter Directives to the Dangerous Substances Directive (76/464/EEC) as listed in Annex IX, and other water-relevant directives) have to be continually observed. For bodies of surface water, environmental objectives established under the first River Basin Management Plan required by the WFD shall, as a minimum, require quality standards at least as stringent as the existing ones.

However, the relevant Daughter Directives of the Dangerous Substances Directive (76/464/EEC) will have to be reviewed by the Commission, and revised control measures proposed, including the possible repeal of controls on the substances covered by these directives but not included in the Water Framework Directive's list of priority substances (see below).

IV.5.5.2.1.1 Priority substances and identification of hazardous substances

In November 2001 a list of 33 priority substances, which establishes Annex X of WFD, was adopted as a Decision by the European Parliament and Council under the procedures laid down in Article 16 of the WFD. The list identifies 11 priority hazardous substances and 14 substances for review as potentially hazardous substances.

For the substance selection the Commission has chosen a simplified risk based assessment procedure, which is based on the intrinsic hazards of a substance and available monitoring data about the occurrence of the substance in water (COMMPS procedure²⁰¹). This is an important improvement from the classical and flawed risk assessment procedure which requires a theoretical exposure assessment based on emission pathway models. This classical procedure takes a long time, puts the burden of proof on public authorities and undermines the application of the precautionary principle. Nevertheless, a number of shortcomings can be reported, requiring improvements under COMMPS for its future application. For example, a great number of substances for which no data were available at Community level from the national monitoring programmes or business confidentiality applies were left out. As a consequence, the COMMPS procedure only covered 95 substances on the basis of monitoring data and 123 substances on the basis of modelling data.

Amongst the finally adopted 33 WFD priority substances, 3 are classified as UNECE POPs²⁰², 13 as hazardous by OSPAR, which means that they are either POP-like substances or highly toxic, persistent and bio accumulative. Another 16 were selected under the OSPAR Convention in 1998 and 2000 for priority action, with a view to ceasing their release by 2020. It is obvious that priority substances targeted by other international agreements should be identified as priority hazardous substances. The Community has internationally committed itself to cease emissions of these substances by 2020.

The identification of priority hazardous substances was problematic. 14 substances have been left for a re-evaluation whether they are hazardous. 8 of which are pesticide active ingredients which have been detected to be ubiquitous in European waters (Atrazine, Chlorpyrifos, Diuron, Endosulfan, Isoproturon, Pentachlorophenol, Simazine, Trifluralin).

²⁰¹ http://europe.eu.int/comm/environment/water/water-framework/preparation_priority_list.htm

²⁰² 1998 Protocol on Persistent Organic Pollutants (POPs) to the UNECE Convention on long-range Transboundary Air Pollution on POPs

Three chemical manufacturers (Dow Chemical, Finchimica, Makteshim Agar) challenged the European Union at the European Court of Justice in February 2002 over inclusion of these substances in the WFD list of priority substances. The case was rejected. The companies claimed that the exclusive basis for selection of substances under the WFD should be full risk assessments in accordance with regulation No. 793/93 (see chapter V.4.6.4.2) and not the chosen COMMPS procedure. In other words, that there is no room for the application of the precautionary principle. In addition, it is claimed that regulating pesticides under the WFD is in contradiction to their marketing authorisation under the Pesticide Authorisation Directive (91/414/EC) (see chapter V.4.6.5.1).

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CAS Number	Name of priority substance	X priority hazardous(X)*** under review	Chemical for Priority Action under OSPAR Convention	UNECE 1998 POPs
15972-60-8	Alachlor			
120-12-7	Anthracene	(X)***	+	
1912-24-9	Atrazine	(X)***		
71-43-2	Benzene			
n.a.	Brominateddiphenylethers	X	+	
7440-43-9	Cadmium and its compounds	X	+	
85535-84-8	C10-13-chloroalkanes (**)	X	+	
470-90-6	Chlorfenvinphos			
2921-88-2	Chlorpyrifos	(X)***		
107-06-2	1,2-Dichloroethane			
75-09-2	Dichloromethane			
117-81-7	Di(2-ethylhexyl)phthalate (DEHP)	(X)***	+	
330-54-1	Diuron	(X)***		
115-29-7	Endosulfan	(X)***	+	
959-98-8	(alpha-endosulfan)			
206-44-0	Flouranthene			
118-74-1	Hexachlorobenzene	X		+
87-68-3	Hexachlorobutadiene	X		
608-73-1	Hexachlorocyclohexane	X	+	+
58-89-9	(gamma-isomer, Lindane)			
34123-59-6	Isoproturon	(X)***		
7439-92-1	Lead and its compounds	(X)***	+	
7439-97-6	Mercury and its compounds	X	+	
91-20-3	Naphthalene	(X)***	+	
7440-02-0	Nickel and its compounds			
25154-52-3	Nonylphenols	X	+	
104-40-5	(4-(para)-nonylphenol)			
1806-26-4	Octylphenols	(X)***	+	
140-66-9	(para-tert-octylphenol)			
608-93-5	Pentachlorobenzene	X		

87-86-5	Pentachlorophenol	(X)***	+	
n.a.	Polyaromatic hydrocarbons	X	+	+
50-32-8	(Benzo(a)pyrene),			
205-99-2	(Benzo(b)fluoroanthene),			
191-24-2	(Benzo(g,h,i)perylene),			
207-08-9	(Benzo(k)fluoroanthene),			
193-39-5	(Indeno(1,2,3-cd)pyrene)			
122-34-9	Simazine	(X)***		
688-73-3	Tributyltin compounds	X	+	
36643-28-4	(Tributyltin-cation)			
12002-48-1	Trichlorobenzenes	(X)***	+	
120-82-1	(1,2,4-Trichlorobenzene)			
67-66-3	Trichloromethane (Chloroform)			
1582-09-8	Trifluralin	(X)***		

IV.5.5.2.1.2 Upcoming Daughter Directives on quality standards and control measures

For priority substances a progressive reduction in pollution is to be achieved by establishing Community-wide environmental quality standards and source controls by the procedure laid out in Article 16. For so-called priority hazardous substances, the cessation of discharges, emissions and losses shall be achieved within 20 years at the latest. There is no derogation provided in the Directive from these obligations.

For the first list of 33 priority substances the Commission should have proposed standards and measures by 20 November 2003 but is running late and announced its proposals for March 2005. Those standards and measures need to be adopted by the European Parliament and Council in a full legislative process. If no agreement is reached Member States have to set national quality standards and control measures by 2007, which can be seen as a safety net procedure. The work on setting quality standards is already well advanced at the technical level. The main questions remaining are:

- ▶ How to use maximum allowable concentrations (MACs) to avoid environmentally damaging peak concentrations, which would not be identified through annual averages (e.g. pesticide peaks during summer)?
- ▶ Setting standards for sediments or organic matter in case of bio accumulative substances?
- ▶ How to interpret standards for priority hazardous substances, as their concentrations should finally go towards zero or background concentrations, as required by the WFD?
- ▶ How to interpret the WFD requirement to reduce the level of drinking water treatment, e.g. could the environmental standard value be higher than the drinking water standard taking into account certain treatment technologies?

The development of control measures poses major problems. Much work has been devoted to identifying and quantifying the sources and pollution pathways. In many cases the diffuse sources are significant and would need to be addressed in order to achieve the quality standards or phase out all emissions. This would in most cases require EU wide market and use restrictions, which are under the auspice of DG Enterprise and not DG Environment, the body in charge of the WFD. Therefore DG Environment is trying to use 'its' legislative tools including IPPC Directive (see chapter V.3.2) and delegate the main measures back to Member States (see also chapter IV.5.5.2.2.2 about WFD required emission control actions by Member States), who have already reacted negatively about this workload being "dumped" on them.

The cessation or phase out of emissions, discharges and losses of specific chemicals or groups of chemicals has been part of national and international legislation for a long time, both in the European Union and in the US and Canada. However, actually achieving cessation has so far proven politically difficult. Some stakeholders argue that if the principal emission sources of a substance have been stopped and major reductions achieved, further reductions are economically difficult and unnecessary for the protection of human health and the environment. This is a doubtful argument especially for substances exerting potential negative effects at very low quantities. This is for example the case for highly persistent and highly bio accumulative chemicals (vPvBs) which once released even in low quantities, accumulate in human breast milk and are atmospherically transported even to the most remote regions on earth. Continued emissions of such substances – even in low quantities – pose a non-quantifiable risk and present a real life experiment with human health and the environment. History shows that often damage has only become apparent when it was too late to adequately react (see cases of asbestos, DDT, etc...).

Hence the standard emission control measures developed in the seventies, the classical end of pipe solutions, are clearly inadequate for such substances. Instead, effective control measures for priority hazardous substances need to be precautionary and look at all stages of a chemical's life – production, transport, application, use in articles/products, waste. Each of these stages has different release patterns, and recent studies suggest that in most cases the later life stages (use in products or waste) pose the biggest problems (CEC 2002a)²⁰³. Thus, the use of the IPPC Directive or similar instruments is inadequate to effectively phase out emissions of hazardous chemicals (see chapter V.3.2.4.1).

The cessation of emissions, discharges and losses of priority hazardous substances can only be reliably achieved by consequently applying the principle of substitution, i.e. either by replacing them with safer substances or by non-chemical alternatives. The EU committed itself to such an approach in the preparation of a new EU chemicals policy REACH (see chapter V.4.6.4.6).

IV.5.5.2.1.3 Article 16 of the WFD – a precedent for EU chemicals legislation?

In brief, for priority hazardous substances, the WFD prescribes EU-wide measures which would lead to the cessation of all discharges, emissions and losses no later than 20 years after the adoption of the respective measures. In several respects, the WFD is hence a legislative novelty:

²⁰³ EU Risk Assessment for Decbromodiphenylether. According to that study releases into the environment from use and disposal of articles containing the substance account for more than 70% of all releases.

- ▶ for the first time in EU law, it introduces a legally binding obligation on Member States and the European Union to phase out emissions of certain chemicals by a certain deadline;
- ▶ again for the first time, the WFD fully recognises and applies the precautionary principle to the control of chemicals, by declaring hazard based assessments (i.e. evaluation of chemicals by their intrinsic properties) a valid instrument for prioritising substances for action. In other words, full risk assessments are no longer the only mechanism to regulate chemicals under EU law. This is a major step forward in dealing with the environmental legacy of one hundred years of virtually uncontrolled chemical technology.

The pending revision of EU chemicals legislation should take these developments into account. The Commission's 2001 White Paper on Chemical Policy indeed applies a corresponding methodology. Whatever the legislative tools emerging from the imminent EU chemical policy reform, it would be a huge failure to ignore the precedent set by the Water Framework Directive's provisions on the cessation of discharges, emissions and loss of hazardous substances, or the legislative principles enshrined therein.

IV.5.5.2.2 National Standards and Emission Controls

IV.5.5.2.2.1 Setting EQS

Environmental quality standards (EQSs) for all pollutants 'identified as being discharged in significant quantities' into bodies of surface water have to be set *at Member State level* according to the procedure laid out in Annex V, 1.2.6. (an indicative list of the main pollutants is provided in Annex VIII). In setting an EQS, detailed data on biological toxicity and the aquatic ecosystem need to be taken into account. Hence, environmental quality standards (EQSs) are likely to differ from region to region and from water type to water type. The environmental quality standards (EQSs) are subject to peer review and public consultation.

Compliance with these EQSs is required for the achievement of the objective of 'good ecological status' and 'good chemical status' (defined in Annex V) by Dec 2015.

For 'High Status' surface water bodies, Member States, with regard to the non-deterioration provision (article 4.1.a.i), must:

- ▶ prevent non-synthetic pollutants discharged in significant quantities from reaching concentrations in the water body above the range normally associated with undisturbed conditions;
- ▶ prevent synthetic pollutants discharged in significant quantities from reaching concentrations above the limits of detection.

IV.5.5.2.2.2 Emission Controls and Combined Approach

The WFD's Article 10 requires Member States to control, by 2012 at the latest, all substance discharges and process covered by the IPPC, UWWT, Nitrates and Dangerous Substance Directives as well as all discharges of the priority substances of Annex X of WFD following a *combined approach*. That means firstly establishing or implementing

- a) emission controls based on best available techniques, or
- b) relevant emission limit values, or
- c) in the case of diffuse impacts the controls including, as appropriate, best environmental practices.

Second, in case an EQS is not met via the above mentioned emission controls more stringent controls have to be set.

As a basic measure, Member States are required to include in the programme of measures to be established by 2009 and be made operational by 2012, all sources liable to cause pollution prior to regulation, such as prohibition, prior authorisation, or registration.

Furthermore, Member States have to establish emission controls and quality standards for the priority substances in Annex X by Nov 2006, in case the EU fails to adopt such measures in time.

IV.5.5.3 GROUNDWATER OBJECTIVES AND PROTECTION - ARTICLE 4.1(B)

The big dilemma with effective protection of this most important drinking water resource is that we do not know much about it. What can be done for surface water - using biology to derive the carrying capacity of the ecosystem – cannot be replicated in the case of groundwater as there is as yet little or no information about its ecosystem available. Groundwater biology is estimated to play a big role in its self-cleaning capacity, and its reaction to pollution is rather different to that of surface water ecosystems²⁰⁴ (*Griebler et al. 2001*).

Therefore traditionally precautionary action, e.g. preventing the entry of all pollutants, is applied. The 1980 Groundwater Directive, which will be repealed by the WFD in 2013, followed such an approach, by setting up a “black” list of substances, which are persistent, bio accumulative and toxic or of similar concern, which have to be prevented from entering the groundwater, and a “grey” list of substances, which have to be limited from entering groundwater.

Unfortunately the WFD did not take up this approach and instead merely calls for the prevention or limitation of the entry of substances, without specifying what should be prevented and what should be limited. During the WFD negotiations much effort was devoted to establishing groundwater quality standards, e.g. based on drinking water standards. These efforts were eventually fruitless and resulted in a compromise article 17, which gives the Commission a mandate to develop a new Groundwater Directive to fill the gap. In September 2003 the Commission published its proposal which, according to ECOs, represented a serious weakening in the existing protection levels under the WFD and the 1980 Groundwater Directive. The Commission tried to establish quality standards, but these are arbitrary and impractical to monitor in a harmonised way, and would not prevent increased pollution, thus undermining the necessary precautionary action of preventing the input of pollutants.

²⁰⁴ Groundwater is the habitat for numerous microorganisms and animals. In Europe more than 2000 larger species, such as worms, shrimps or even amphibians, are identified. These species, protozoans and a rich spectrum of bacteria are crucial factors of in situ water purification.

What does the WFD set as groundwater objectives?

Firstly, it requires the achievement of sustainable quantitative water management by 2015. This means that groundwater abstractions must be less than the natural recharge rate and sufficient water flow must be provided to avoid any significant negative impact on water ecosystems and groundwater dependent terrestrial ecosystems. Saltwater or other intrusions due to groundwater level changes must be prevented. This water quantity objective is novel in EU law and a major step towards sustainable water management.

As regards chemical quality, the WFD requires that the input of pollutants be prevented or limited, although without specifying which substances should be limited and which should be prevented altogether. Finally, groundwater chemical quality must not lead to a deterioration of the status of surface waters or terrestrial ecosystems depending on groundwater. A statistically significant increase in the concentration of pollutants in groundwater has to be prevented and ultimately reversed.

In line with the WFD approach to surface water chemical objectives, one could interpret this objective similarly as being that all “hazardous” substances need to be prevented from entering groundwater and that all other substances be limited in to prevent rising concentrations and damage to surface water and terrestrial ecosystems.

In order to put this interpretation into practice the new Groundwater Directive could extend the strategy to prevent surface water pollution (*see chapter IV.5.5.2.1*) to groundwater.

Finally the WFD prohibits direct discharges of pollutants into groundwater, as one of the measures required to achieve the Directive’s objectives. However, Member States may exempt certain direct discharges from specified activities from this general prohibition, provided that the objectives set for the groundwater body are not compromised and the dischargers have obtained authorisation. But some of the exempted activities concern very toxic substances (e.g. injecting mining waste back into certain groundwater aquifers).

The WFD has not solved the groundwater protection problem and a great deal of work still needs to be done. But most importantly it requires Member States to develop a better understanding about their groundwater and its strong – but usually underestimated – interrelation with surface waters.

IV.5.5.4 THE NO-DETERIORATION OBJECTIVE – ARTICLE 4.1

Preventing the deterioration in the status of surface and groundwater has been identified as a crucial objective in protecting the environment from ongoing or planned human developments. Any further deterioration would make the achievement of a good status more difficult or even impossible. There has been a long discussion about this no-deterioration objective and when and how it has to be applied.

The first difficulty the WFD poses is that the objective is linked to the status of the respective water bodies. Deterioration within one status class is allowed, only when the water changes the class from e.g. moderate to good or from good to high, the objective of no-deterioration is breached. This means that until appropriate monitoring is in place in 2006 and the status assess-

ment can be finalised there will be uncertainty about the exact status of certain water. On the other hand it also depends on the size of the impact of a specific project how certain or uncertain one can judge a deterioration in water's status, e.g. the building of a dam in a free flowing river means the total disruption of the river continuum and certainly means the deterioration of status even without awareness of all biological parameters.

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But there have been other problems. Some Member States have claimed that the no-deterioration objective only becomes legally binding in 2009 or 2012, when the programme of measures is established or becomes operational. The Commission rejected this claim and told the European Parliament in March 2001 that 'since the Directive entered into force on 22 December 2000 a strict no-deterioration clause has applied, which should prevent a repetition of past errors'.

The no-deterioration objective could in theory be one of the most powerful WFD tools against unsustainable human developments and would have a direct impact on most land use planning, infrastructure, transport and energy projects. However, ECOs have so found it very difficult to make use of it, as was the case with the Spanish National Hydrological Plan from 2000. For the time being Europe's nature conservation legislation provides the better tested and thus more successful instrument for preventing ecological deterioration resulting from human activities.

IV.5.5.5 DEROGATIONS - ARTICLE 4.3 – 4.7

Good status (good ecological and good chemical status for surface waters, good quantitative and chemical status for groundwater) has to be achieved by 2015 - with the possibility of two 6 years extension periods, in the case of technical infeasibility, disproportionate costs or natural conditions, which need to be reported (Article 4.4). Lower objectives (Art 4.5) may be set for the same reason and if the additional following conditions are met:

- ▶ No other significantly better environmental option to serve the socio-economic or environmental needs are available;
- ▶ remediation measures are taken to achieve the highest quality status under the unavoidable impacts
- ▶ no further deterioration occurs in the water status;
- ▶ and the reasons for setting lower objectives are reported and reviewed every six years.

A special derogation for surface waters has been introduced in article 4.3 in case of heavy infrastructure, which changes the character of a water, e.g. harbours, flood defence in cities. Those waters can be identified as heavily modified or artificial. For such waters a new objective is determined taking into account the physical and unavoidable changes. This means the biological standards will be lower than for "natural waters", but the chemical quality standards remain unaffected.

In order to designate a water as heavily modified or artificial, Member States have to prove that the following conditions are fulfilled:

(a) the physical restoration, e.g. removal of dams or dykes, to achieve good ecological status would have significant adverse effects on:

- ▶ the wider environment
- ▶ navigation, including port facilities, or recreation
- ▶ activities for the purposes of which water is stored, such as drinking water supply, power generation or irrigation
- ▶ water regulation, flood protection, land drainage, or
- ▶ other equally important sustainable human development activities.

(b) the objectives delivered by the physical modification cannot be achieved by a significantly better environmental option.

There is a high that Member States will make extensive use of these derogations. In some countries, e.g. Germany, The Netherlands, it is expected that the majority of waters will be designated as heavily modified.

Finally the WFD accepts the failure to prevent the deterioration or achievement of good status (Article 4.6) provided the following conditions are met:

- ▶ If there is no better environmental alternative.
- ▶ If the activity is a new physical modification or groundwater abstraction or presents new sustainable human development.
- ▶ If the activity is of overriding public interest or delivers human health or safety benefits, which outweigh the environmental benefits.
- ▶ If all practicable measures are taken to mitigate its effects.

For all three above described derogations, the WFD requires that in addition the applied derogation must not make achieving WFD objectives impossible in other water bodies, or contradict EU environmental policies, or lower the environmental protection set out in other EU legislation, such as the Habitats Directive.

IV.5.6 Tools and measures under the WFD

IV.5.6.1 RIVER BASIN PLANNING – ARTICLE 3 AND 13

The WFD requires a detailed, long-term and iterative planning process and the setting up of adequate administrative arrangements including the designation of competent river basin authorities (Article 3). The success of achieving the ambitious environmental objectives in an effective way and whether they will be achieved at all, depends to a large extent on the establishment of a competent authority able to oversee a river basin district and equipped with sufficient competencies and capacities to integrate different policies, including land use planning, navigation, fishing, tourism and agriculture.

The central tool is the River Basin Management Plan (RBMP) under article 13 for each river basin district, which includes inter alia:

- ▶ description and characterisation of the river basin, including environmental assessment of human activities, economic assessment of water uses, description of pollution sources and risk analysis of failing to achieve the objectives (Article 5);
- ▶ a list of environmental objectives and exemptions established for surface and groundwater (Article 4);
- ▶ a list of protected areas (Article 6);
- ▶ a map of the monitoring stations (Article 8);
- ▶ measures to achieve cost recovery for water services and to implement the polluter pays principle (Article 9);
- ▶ programme of measures (prior-authorisations, prohibitions or other general binding rules) and specific additional measures to achieve the environmental objectives (Article 11).

The initial RBMP for each river basin district will have to be completed by Dec 2009 and reviewed and updated every six years thereafter (2015, 2021 etc). The preparation of RBMPs is a most important area of influence for ECOs, since this is where all relevant issues for the achievement of the WFD objectives are negotiated. Notably, Member States are required to ensure a full and comprehensive public consultation on all the issues covered by the plans (article 14).

In the case of international river basins – whether they fall entirely within the European Union or extend beyond the boundaries of the Community – Member States are asked to ensure co-ordination and co-operation with the aim of producing one single international River Basin Management Plan. If such an international RBMP cannot be produced for some reason or other, Member States are still responsible for producing River Basin Management Plans for the parts of the international river basin district which within their territory.

IV.5.6.2 PUBLIC PARTICIPATION – ARTICLE 14

Public Participation has a prominent place in the WFD. Firstly the European Union has developed a strong agenda of increasing transparency and public participation. Secondly water management is historically a public service a large public administration behind it. Civil servants working in the sector tend to have a background in civil or building engineering, which without doubt leads to impressive advancements in human development. But such development has often been pursued at the expense aquatic ecosystems, leaving nearly no rivers without a channel, dam or concrete enforcement. The WFD takes a strong line in tackling this problem and shifting water management from working against towards working with nature. A very important tool in making such a shift is the constant pressure to explain to the public what is happening and to present alternative management solutions.

If the WFD is to be truly successful it requires not only repair measures but a joint societal effort. Again transparency, access to all documents and open discourse with the public are essential in preparing such a joint effort involving different actors and across society as a whole.

The WFD thus requires Member States to encourage the active involvement of interested parties in WFD implementation. In specific article 14 requires a six month consultation on the timetable

and work programme for the RBMPs in 2006 on the main water management issues in 2007 and on the draft RBMP in 2008. All background documents must be made available on request.

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The EEB together with WWF carried out a survey of the WFD implementation quality end of 2004, which provides insight into the state of play of respective public participation in different Member States (*EEB and WWF 2005*). The overall starting point is quite discouraging, but in several countries, public authorities' attitudes towards involving ECOs in WFD implementation improved between the end of 2003 and the end of 2004. However, the survey shows that in many countries, public participation and active involvement still have a long way to go to reach WFD objectives. A lot of time has passed without public authorities having developed appropriate strategies. But there are also very encouraging examples, such as the case of Schleswig-Holstein, where ECOs are reimbursed for participating in the implementation exercise, and Scotland, where the Scottish Executive is actively gathering information held by societal stakeholders.

IV.5.6.3 WATER PRICING - ARTICLE 9

The use of economic instruments is of growing importance for environmental policies. One of the key priorities of the 5th Environmental Action Programme (1992-1999, see chapter III) was the widening of the range of environmental instruments, which has been reconfirmed by the 6th Environmental Action Programme (2002-2012). For several years the use of economic and fiscal instruments has been promoted in EU environmental policy with mixed success - like phasing out environmental harmful subsidies, energy taxes and emissions trading. The EU has so far only managed to successfully introduce emissions trading for climate change purposes. Taxation and subsidies largely rest within the sole competence of Member States. Indeed a number of countries have introduced environmental based taxes and charges. But overall environmental taxation remains at a stable low level of 5-10% of total tax revenues in the EU (*EEA 2002*). On the other hand environmentally harmful subsidies are conservatively estimated to be 5% of GDP in OECD countries (*OECD 2004*), with subsidies in the field of water management worth some 15 billion US Dollars per year.

Member States are now obliged under the WFD to develop water pricing policies for water uses in order to support the achievement of the environmental objectives and to implement a cost recovery for water services, taking environmental and resource costs into account.

The potential of using water pricing for improving current inefficient water management and of moving towards sustainable water use is great. Fair water pricing could - especially for the supply-driven management in the agricultural sector - reduce the level of harmful subsidies, lead to more efficient water use and finally to demand management (*EEB 2000*).

Nevertheless, as regards full cost recovery, including environmental costs, water pricing is quite a sophisticated question. Water is not just a commercial good, market forces are not easily applicable and the economically based calculation of environmental costs is of course complicated. But if the Polluter Pays Principle is to be taken into account, then the inclusion of environmental (damage) or resource costs is a crucial precondition (*EEB 2000*). Simple and straight forward action, such as identifying and reducing subsidies, charges or levies for water abstraction and use and earmarking them etc., is needed. Ecological and holistic oriented water status objectives,

strategies against pollution from dangerous substances, river basin management and public participation are the main tools and objectives within which water pricing should be set.

The introduction of the full cost recovery principle for water services in the WFD has not been an easy task and during the WFD legislative process, opposition, especially from Member States, where the potential of financial instruments is greatest, hindered EU-wide clear and binding obligations on water pricing.

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Article 9 of the WFD obliges Member States to take into account the principle of recovery of the costs for water services and specifically includes environmental and resource costs. The Article specifies that Member States have to ensure by 2010:

- ▶ that their water pricing policy is an incentive for efficient water use and thereby contributes to the environmental objectives;
- ▶ an adequate contribution for the different water uses to the recovery of the cost of water services.

The first obligation is very important, because it makes clear that water pricing has to be seen and used within the frame of the environmental objectives of the WFD.

The second obligation gives wide room for interpretation. What is meant by an “adequate contribution”? Further to that, full cost recovery is limited to water services, which are defined in Article 2(3) as “*all services (abstraction, impoundment, storage, treatment and distribution of surface water or groundwater, waste water collection and treatment facilities) which provide, for households, public institutions or any economic activity*”. Whether self services or hydropower are considered to be water services is open to interpretation.

Due to the above-mentioned strong opposition from Member States, with low level of cost recovery for water services (particular Spain and Ireland), exemptions from the application of the full cost recovery principle are wide.

When establishing water pricing policies under Article 9, Member States can take into account social, environmental and economic effects as well as geographic and climatic conditions.

Further to that, Member States can simply decide not to establish any water pricing policy for a specific water use activity (e.g. irrigation) under the condition that this does not compromise the achievement of the Directive’s objectives.

The economic analysis for each river basin district (Article 5), which had to be concluded by 2004, will be the basis for establishing water pricing policies and for implementing the full cost recovery and the polluter pays principle.

According to Annex IV of the Directive, the economic analysis should therefore contain sufficient information including the estimation of environmental costs. Annex IV further specifies that long-term forecasts of supply and demand for water have to be accounted for, which is very important in the light of the possible changes in the water cycle due to climate changes.

The economic analysis and the steps to implement the full cost recovery obligation have to be reported, which allows stakeholders to have an influence on how far their government is willing to move towards cost recovery and internalisation of external (environmental) costs.

IV.5.7 The WFD - a new umbrella for environmental laws

The WFD not only repeals a number of EU water laws but also provides a general coordination framework for many others, which includes setting deadlines for achieving their respective objectives. Furthermore, it feeds into important political debates with regard to Europe’s chemicals management and product policy as well as relevant other sectoral policies. The following table tries to give an overview on this network of legislation and policies.

WATER FRAMEWORK DIRECTIVE IN LEGAL TERMS	
<i>Repeals by 2013</i>	<ul style="list-style-type: none"> • Fish Water Directive 78/659/EEC • Shellfish Water Directive 79/923/EEC • Groundwater Directive 80/68/EEC • Dangerous Substance Directive 76/464/EEC
<i>Requires Member States to register and monitor all protected areas and achieve their respective objectives by 2015 if not specified otherwise</i>	<p>Protected areas under:</p> <ul style="list-style-type: none"> • Drinking Water Directive 98/83/EC • Bathing Water Directive 76/160/EEC • Nitrates Directive 91/676/EEC • Urban Waster Water Treatment Directive 91/271/EEC • Wild Birds and Habitats Directives 92/43/EC and 79/409/EEC
<p><i>Requires Member States to develop or implement Best Available Technique BAT or Best Environmental Practice BEP by 2012 if not specified otherwise</i></p> <p><i>And apply combined approach (first implement BAT or BEP, than use EQS to check whether it is sufficient, if not strengthen BAT or BEP)</i></p>	<p>For pollutants and activities under</p> <ul style="list-style-type: none"> • IPPC Directive 96/61/EC • Dangerous Substances Directive 76/464/EEC • Nitrates Directive 91/676/EEC • Urban Waster Water Treatment Directive 91/271/EEC
<i>Requests a review of biocides or pesticides marketing authorisations in order to met quality standards set according to article 16 of WFD</i>	<ul style="list-style-type: none"> • Pesticides Directive 91/414/EEC • Biocides Directive 98/8/EC

WATER FRAMEWORK DIRECTIVE IN GENERAL POLICY AND POLITICAL TERMS	
<i>Develops a key indicator</i>	For Europe's objective to halt biodiversity decline in 2010
<i>Greatly expands nature protection and conservation</i>	Especially including wetlands and floodplains outside Europe's nature legislation
<i>Encourages better integration of water protection</i>	into other EU policy areas such as energy, transport, agriculture, fisheries, regional policy and tourism. The Commission's proposed EU funding instruments for regional and rural development and social policies for 2007-2013 foresee funding of WFD measures (WWF 2005).
<i>Requires Member States to ensure appropriate administrative arrangements to implement WFD (including the setting up of an competent authority)</i>	This means as a logical consequence that water protection must be integrated with all land use planning policies and other sectoral policies.
<i>Requires the identification of priority and priority hazardous substances and the phase out of their emissions</i>	<p>First step to implement Europe's commitment under several international conventions</p> <p>For the first time a more efficient methodology for the selection of substances of concern selection has been used.</p> <p>Politically calls for:</p> <ul style="list-style-type: none"> • filling the knowledge gap about the safety of most chemicals marketed and used in the EU. • efficient substitution of such chemicals and/or market and use controls <p>Both could be delivered by the new Chemicals Policy REACH</p>

IV.5.7.1 SURFACE WATER 75/440, FISH WATER 78/659 AND SHELLFISH WATER 79/923 EEC DIRECTIVES

These three directives require Member States to establish Environmental Quality Standards for specific water bodies and water uses.

The 1975 Surface Water Directive aims at protecting relevant surface waters intended to be used for drinking water purposes, such as lakes, rivers and reservoirs. Member States have to designate those waters and have to take all necessary measures to comply with the standards set in the directive. Most of the requirements of the directive have been integrated into the 1980 Drinking Water Directive. Consequently, the Surface Water Directive will be repealed by the WFD in Dec 2007.

The objective of the 1978 Fish Water Directive is to protect and improve the quality of fresh waters that support, or could support, certain species of fish. Similarly, the 1979 Shellfish Water

Directive aims to protect and improve the quality of coastal and brackish water bodies, in order to contribute to the quality of edible shellfish products. In order to achieve the objectives of both directives, Member States have to designate the relevant water bodies, to monitor the quality of these water bodies and to take measures to ensure compliance with the minimum standards set by the Directives ('guide' as well as 'imperative' values are laid down).

The Fish Water and Shellfish Water Directive will be repealed by the WFD in Dec 2013. The achievement of a good ecological and chemical status for all waters through the WFD should imply the achievement of quality standards to support fish and shellfish life. Nevertheless, nothing in the WFD explicitly prevents the lowering of standards from these Directives once they are repealed.

IV.5.7.2 DANGEROUS SUBSTANCES DIRECTIVE 76/464/EEC AND ITS 'DAUGHTER DIRECTIVES'

The 1976 Dangerous Substances Directive is an important component of EU water legislation and provides the framework for subsequent regulation to control the discharge of specific dangerous substances. It applies horizontally to all surface water in the EU and, by setting emission standards, partially follows the second approach of the 1973 Environmental Action Programme.

The objectives are the elimination of pollution by the dangerous substances listed in Annex I ('Black List') and the reduction of pollution by Annex II substances ('Grey List'). The regulatory measures to be used by Member States to achieve these objectives are prior authorisations for any discharge of List I substances, which can be granted only for a limited time period. List I substances are identified on the basis of their toxic, persistent and bioaccumulative properties.

Due to differing viewpoints between the UK and other Member States, the directive follows a parallel approach and makes provisions (under Article 6.1 and 6.2) for the EU Council to adopt both Emission Limit Values ELVs and Environmental Quality Standards EQSs for each 'black list' substance. Member States are free to choose which approach to use. For the time being, only the UK has followed the EQS approach.

In 1982 the Commission identified 129 'candidate' substances²⁰⁵ which qualify as List I substances according to Directive 76/464/EEC. However, only 18 out of the 129 substances have been regulated up to now through daughter directives as List I substances (Mercury Discharges 82/176/EEC, Cadmium Discharges 83/513/EEC, Mercury Discharges 84/156/EEC, Hexachlorocyclohexane Discharges 84/491/EEC, and Dangerous Substance Discharges 86/280/EEC).

The WFD will repeal the 1976 Dangerous Substances Directive in 2013, except for Article 6, the List I substances, which was replaced immediately by the WFD. In addition, the 1982 'candidate' list of 129 substances is replaced by the 33 priority substances in Annex X of the WFD (*see chapter IV.5.5.2.1.1*). The WFD specifically mentions that the EQSs established under the first River Basin Management Plan have to be at least as strong as the ones established under Directive 76/464/EEC.

²⁰⁵ OJ C 176, 14.7.1982, p. 3.

IV.5.7.3 URBAN WASTE WATER TREATMENT DIRECTIVE 91/271/EEC

The Directive's objective is to protect the environment from urban waste water discharges through collection and treatment of such discharges, which according to the WFD has to be achieved by 2015 at the latest. The setting of Emission Limit Values ELVs for organic biodegradable substances, nitrates and phosphates from urban wastewater treatment plants is dependent on the local aquatic environment, i.e. how sensitive it is with regard to eutrophication or whether it is protected for drinking water abstraction. Some countries identified their whole territory as sensitive²⁰⁶, some identified parts of their territory²⁰⁷, and finally a number of countries do not identify sensitive areas at all, but apply the most stringent ELVs instead²⁰⁸. In a tiered approach, Member States have to establish waste water collection for agglomerations with more than 2000 p.e. (population equivalents) by the end of 2005 starting with agglomerations above 150,000 p.e. by the end of 1998.

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The Directive has delivered the single biggest improvement in the quality of European rivers and lakes through reduced pollution with organic biodegradable substances. Nevertheless, 40% of European waters still show eutrophication symptoms and up to 50% of this impact can be attributed to urban waste water discharges (*EEA 1999*).

The Directive has been often cited as the most expensive European law ever. Indeed waste water collection networks and treatment plants are costly infrastructures, but its human health and environmental benefits are likely to be much higher. Additionally, it is often forgotten that the Directive does not prescribe technical standards, but sets emission limit values, which can be achieved often better and cheaper through decentralised waste water treatment systems and the separate collection of waste water of different qualities.

Implementation of the Directive has been slow and the Commission launched 34 infringement procedures against Member States between 1994 and 2003 mainly on transposition, reporting, designation of sensitive areas and collection systems (CEC 2004). Whether ELVs are met is subject to an ongoing evaluation by the Commission.

IV.5.7.4 NITRATES DIRECTIVE 91/676/EEC

The Directive's objective is to reduce water pollution caused by nitrates from agriculture sources, which according to the WFD has to be achieved by 2015 at the latest.. Similar to the Urban Waste Water Treatment Directive the Nitrates Directive requires Member States to identify specific problem areas (Nitrate Vulnerable Zones NZVs) and apply emission control measures to meet the objectives. Beyond that, Member States have to establish codes of good agricultural practice, to be applied by farmers on a voluntary basis, in order to provide general protection for all waters.

By the end of 1993 Member States had to designate as NZVs all surface or ground waters which would either fail to meet the drinking water standard of 50mg nitrates/l or suffer from eutrophication if no pollution control measures are taken.

²⁰⁶ Belgium and Sweden

²⁰⁷ Germany, Spain, France, Greece, Ireland, Italy, Portugal and the United Kingdom

²⁰⁸ Denmark, Luxembourg, the Netherlands, Finland and Austria

For the NZVs, Member States have to establish action programmes within two years, which ensure inter alia that a quasi “emission limit value” of 170 kg of Nitrogen applied per hectare per year is achieved. This limit value can be adjusted according to local soil, crop and climate conditions after approval by the Commission and with the condition that the environmental objectives are achieved.

Considering that eutrophication of European waters remains today’s biggest threat to our aquatic ecosystems, a lot more must be done to correctly apply the Nitrates Directive. Member States have been rather reluctant to regulate the agricultural industry. By end of 2001 for all countries but Denmark the Commission has launched infringement proceedings for failure to correctly apply the Directive (*CEC 2002b*).

The Commission launched 56 infringement procedures against Member States between 1994 and 2001. This indicates the high level of disrespect for this important European law and is clearly a huge waste of money: *“The cost of nitrate reduction lies in the range of EUR 50-150 per hectare per year, but this is estimated to be 5 to 10 times cheaper than removing nitrate from polluted water. A 2002 study estimates that denitrification of UK drinking water costs £19 million a year and projects the total UK cost of achieving the European Union nitrate standard for potable water at £199 million over the next 20 years. Consumers, rather than the polluters (i.e. farmers), pay almost all of the bill.” (EEA, 2004)*

IV.5.7.5 GROUNDWATER DIRECTIVE 80/86/EEC

In principle, all discharges of pollutants into groundwater were regulated by the 1976 Dangerous Substances Directive which in its Article 4 explicitly obliged Member States to apply a zero emission regime for discharges of List I pollutants into groundwater. This article also referred to a future directive on groundwater and ceased to be applicable with the adoption of the 1980 Groundwater Directive.

In a similar way to the Dangerous Substances Directive, the Groundwater Directive divides pollutants into two categories – a ‘black list’ and a ‘grey list’. However, the objectives are to prevent ‘black list’ substances from entering groundwater and to limit ‘grey list’ substances introduced into groundwater. To reach these objectives, the national competent authorities have to prohibit any direct discharges and to take all necessary measures to prevent indirect discharges with regard to ‘black list’ substances. All discharges of ‘grey list’ pollutants are subject to prior investigation and authorisation.

The Groundwater Directive has not been able to meet the challenge of effectively preventing long-term and diffuse groundwater pollution. A lack of instruments and of integration into other policies is the main reason for this. Nevertheless, the zero-emission obligation applies to all sources of groundwater pollution and represents a precautionary principle for certain substances, which are identified on the basis of their toxic, persistent and bioaccumulative properties. The Commission proposal for a new Groundwater Directive from October 2003 following article 17 of the WFD is less explicit with regard to prevention and limitation of input of substances (*EEB 2003*).

The 1980 Groundwater Directive will be repealed by the WFD in Dec 2013.

IV.5.8 Assessment of the WFD

Strengths

Above all the WFD sets and describes an ecological objective in detail and provides a common process to achieve some degree of EU harmonisation. Compared to the so far rather generic ecological objectives (halt biodiversity decline; protection of certain individual species and habitats) this is a major step forward. If successful in terms of technical and political ambition the result would be the first ever substantial indicator to test and challenge human development against ecological sustainability.

Further to this overarching objective and in recognition of its vulnerability for political pressure due to its complexity, the WFD provides several “safety nets” and environmental principles, including the no-deterioration of status, the one out – all out principle (worst quality element determines overall status), setting of chemical quality standards, phase out of emission of hazardous chemicals and the Intercalibration for achieving a EU wide comparable and WFD consistent interpretation of the ecological objective. The legal requirement to phase out emission of hazardous chemicals is novel in EU law and a major step towards implementing the precautionary principle for chemical threats which are unacceptable due to their potential long-term, global and irreversible negative impacts. International commitments for the protection of the marine environment can now be achieved.

Like no other environmental Directive before it, the WFD provides a great number of policy instruments and administrative arrangements, which in summary should allow transparency, early control and proper enforcement, and ensure sufficient integration with other environmental as well as sectoral policies to achieve these objectives. If those reforms are achieved this would mark a new era in water management and governance.

Weaknesses

Many of the above mentioned strengths suffer in one way or another from legal vagueness and complexity. The WFD was developed under strong re-nationalisation pressure – with the aim of strengthening national competencies, while still believing in the necessity to set high environmental standards at the same time. As a result of this the WFD is ambitious but open ended, granting each Member State a multitude of opt-out and exemption possibilities, which in the worst case scenario would lead to 25 different national ambition levels in defining the objectives. This would – depending on economic, employment and internal market pressures – easily result in a race to the bottom and environmental dumping, which would most likely result in no more than confirming existing and insufficient water protection standards. Such a stand still would leave all the heavy administrative and reporting requirements of the WFD without a clear new objective and eventually would make the WFD completely redundant.

Whether such a negative scenario can be avoided depends on the strength of the European Common Implementation Strategy (*see chapter IV.5.4*) and more specifically, on the Intercalibration process, to deliver a harmonised and ambitious objective. This process must be

well resourced and at the same time resist political pressure to reduce perceived costs from setting ambitious objectives. Such pressure depends partly on the national administrative set-up and its ability to leave the well trodden path of “technological solutions only” and instead engage in an open dialogue with other governmental departments and stakeholders, convincing them of the benefits of integrated and long term water management. Most governments and water management authorities are still very far away from this “ideal” and are reluctant to seek stakeholder input or to communicate in a transparent way. Nevertheless positive changes in attitude towards ECOs have been observed during the year 2004.

Agriculture policies will have a particularly important role to play. Bad communication in Denmark and the Netherlands over the WFD’s allegedly dramatic consequences for farming in Europe has already lead to huge resistance towards implementing the WFD.

IV.5.9 Outlook and ECO action (Environmental Citizens' Organisation)

The WFD can be seen as a major contribution to Europe’s sustainable development agenda. When correctly implemented, the WFD should deliver the environmentally sustainable conditions needed for aquatic ecosystems through defining a good status for all waters in Europe. But there is still a long way to go and several drawbacks can be observed – in terms of lack of political commitment to fulfil the letter and spirit of the WFD. Often the exercise is seen as too costly and potential benefits are largely ignored. Public participation in implementation is still in the early stages of development and needs a major effort from public authorities as well as environmental organisations. If this is not taken seriously the WFD could turn out to be a “white elephant”.

But the WFD is also an integrative policy which links up with many existing environmental policies and will rely on the successful delivery and implementation of specific policies like the new chemicals policy, the greening of agriculture, transport, energy and regional policies.

ECOs are provided with ample opportunities to play a role and shape new water management under the WFD. It is not easy to find in the jungle of paragraphs, ambiguous formulations and flexible wording, where such opportunities lie. The following paragraphs should help ECOs and other stakeholders to better identify what they can do make the WFD work.

For more detailed advice the reader is referred to the following publications: Lanz & Scheuer, *EEB Handbook on EU Water Policy under the Water Framework Directive*, EEB 2001; and *Tips and Tricks for the Water Framework Directive Implementation*, EEB and WWF 2004 (see: <http://www.eeb.org/activities/water/publications.htm>)

1. Highlight the many environmental and socio-economic benefits, including:

- ▶ **Increasing water security** – catastrophic water events are becoming more frequent due to climate change, but also to regional water mismanagement. Long-term integrated river basin management and protecting/ restoring the environment’s natural capacity to balance extreme weather conditions should reduce local impacts of droughts and floods.

- ▶ **Only paying once and once only for the right measures to tackle water problems** - Replacing the current uncoordinated water management approaches by a single integrated and coordinated one can largely increase the efficiency of measures and reduce overall costs.
- ▶ **Paying less in the future for water treatment** – Today households pay the bill for cleaning up industrial and agricultural water pollution. Making those polluters pay and reducing pollution at source reduces water supply prices and increases water quality. According to the EEA reducing nitrate pollution from agriculture is 5-10 times cheaper than removing nitrate from polluted drinking waters (*EEA Signals 2004*).
- ▶ **Having high quality water available for all as needed** – water shortages are expensive to business and pose health hazards. Appropriate water pricing and sustainable resource management would lead to a more reliable water supply.
- ▶ **River, lake, wetland, estuarine and coastal habitats, and species available for all to enjoy** – functioning ecosystems, which improve recreation and leisure are still underestimated values. They can be an important source of prospering local economies.
- ▶ **Fishing and tourism** – once good water status is reached higher revenues can be achieved.

2. Public Participation and access to documents:

ECOs need to request that their authorities develop a structured and financed participation framework. Often this only happens after ECOs persistently ask pressing questions about the state of implementation and request access to information. Many ECOs are afraid of getting involved due to the technical complexity of the issues and the capacities involved in tackling them. But one does not need always technical knowledge in order to be a constructive player in the process. In the first instance authorities need to be able to explain to non-experts what they are doing. Inability to do so constitutes bad administration. In many cases the pressure on authorities to make them explain in plain language what they are doing leads to more accountable and open management, which allows new paths to be explored.

3. Encourage and get involved in a public discourse about “good ecological status” and setting specific objectives:

So far nobody can claim to know exactly what is meant by “good ecological status”. Of course, many biologists working on the issues have developed ambitious ideas, but the general tendency of authorities is to change their existing ecological assessment systems as little as possible. Together with the constant pressure from politicians to design a cheap and easily achievable objective and to make sure that their own region and country does not look bad in comparison with others, this drives down the ambition to provide a truly holistic ecological assessment as required by the Directive. e.g. there is almost no national system which consistently uses fish as a key indicator for assessing the state of waters. The WFD clearly requires to monitor and use fish as a key biological indicator. So far Member States have not been able to bring forward sites with sufficient fish monitoring data in order to carry out a joint Intercalibration exercise which achieves WFD conformity and EU wide comparable interpretation of what con-

stitutes “good ecological status”. Following the scientific driven development of a definition of “good ecological status”, specific objectives for each body of water have to be set, which may take socio-economic conditions into account and thus resulting in extending deadlines or lower environmental ambition. Blanket exemptions, like defining all flood defences or agriculture activities as overriding public interests, should be avoided and must be challenged.

4. Explore synergies with other water legislation and nature conservation:

Water pollution from agriculture activities and households remains a major challenge. The Nitrates and Waster Water Treatment Directive can help a lot but are far from being applied and enforced. In specific the waste water treatment in the 10 New Member States has still a long way to go. Alternatives to the inflexible and large scale solutions mainly used in Europe 15 should be promoted, including waste water separation systems and reed bed infiltration systems. Infrastructure projects threaten remaining natural water courses, which are often lying in designated nature conservation areas. Nature conservation obligations can thus be used in synergy to avoid further deterioration.

5. Integration with other Common Agriculture Policy CAP and Rural Development:

The mid-term reviewed CAP provides better opportunities to support WFD implementation and achievement of its objective. Specifically the Rural Development plans for the period after 2006 can serve to finance and steer agriculture management plans which conform to the WFD.

6. Challenge new infrastructure, like inland navigation, flood defences and hydropower:

With the WFD’s no-deterioration principle any new infrastructure work has to undergo a detailed environmental impact assessment, the lack of better alternatives to provide the service has to be proven and mitigation measures have to be established.

7. Insist on phasing out the emissions of priority hazardous substances:

Firstly the Commission has to propose emission controls for priority hazardous substances which achieve cessation of all emission within 20 years. ECOs will have to make their voice heard in the European Parliament and at government level to avoid attempts by different industry sectors to weaken ambitions and undermine the precautionary principle. If the EU fails to adopt appropriate measures Member States have a duty to achieve cessation of emissions themselves. It will be necessary to remind governments of this duty.

BIBLIOGRAPHY AND FURTHER READING

CEC (2002a) EU Risk Assessment for Decbromodiphenylether.

CEC (2002b) *The Implementation of Council Directive 91/676/EEC, Synthesis from year 2000 member States reports*, Commission report COM(2002)407.

CEC (2003) Common Implementation Strategy for the WFD - Guidance Document No 6 Towards a guidance on the establishment of the Intercalibration network and the process on the Intercalibration exercise.

CEC (2004) *Implementation of Council Directive 91/271/EEC*, Commission report COM(2004) 248 final Brussels, 23.4.2004.

DANIELPOL, D.L.; GIBERT, J.; GRIEBLER, C.; NACHTNEBEL, H.P. & NOTENBOOM, J. (2001) Groundwater Ecology, a tool for management of water resources. Office for publications of the EC. Luxembourg.

DANIELPOL, D.L.; GIBERT, J.; GRIEBLER, C.; GUNATILAKA, A.; HAHN, H.J.; MESSANA, G.; NOTENBOOM, J. & SKET, B. (2004): The importance of incorporating ecological perspectives in groundwater management policy. *In: Environmental Conservation* (2004, Issue 3)

DEMMEKE, C (2000) *Towards effective environmental regulation: Innovative approaches in Implementing and Enforcing European Environmental Law and Policy*, European Institute of Public Administration.

EEA (1995) Europe's Environment - The Dobris Assessment.

EEA (1999) *Report no 4: Nutrients in European Ecosystems*.

EEA (2002) *Environmental Signals 2002*.

EEA (2003) *Europe's water: An indicator-based assessment*, p. 5.

EEA (2003b) *Indicator Fact Sheet: Mean Water Allocation for Irrigation in Europe*.

EEA (2004) *Environmental Signals 2004*

EEB (2000) A Review of Water Services in the EU under liberalization and privatisation pressures. A Special Report, Brussels, July 2002

EEB (2003) *Future EU Groundwater Protection*, EEB Position on Commission's proposal for a Groundwater Directive, November.

EEB (2004) *The Quality of National Transposition and implementation - A snapshot, Results of an ECO Questionnaire*, Brussels.

EEB/WWF (2004): *Tips and Tricks for the Water Framework Directive Implementation*

EEB and WWF (2005) *The Quality of National Transposition and Implementation of the WFD at the end of 2004, A second "Snapshot " Report - Assessment of results from an ECO questionnaire*, Brussels.

KAMPA E. / HANSEN W. (2004): *Heavily Modified Water Bodies*, Springer-Verlag Berlin Heidelberg

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LANZ K. / SCHEUER S. (2001): *EEB Handbook on EU Water Policy under the Water Framework Directive*, Brussels, January 2001

OECD 2004: *Environmentally harmful subsidies and international instruments*

WURZEL, R.K.W. (2002): *Environmental Policy-making in Britain, Germany and the European Union, The Europeanisation of air and water pollution control*, Manchester University Press

WWF (2005) *EU Funding for Environment, A handbook for the 2007–13 programming period*, Brussels April 2005, page 31.