

#### CHAPTER 4: EUROPEAN UNION ENVIRONMENTAL LAW REGULATING LBMP

Due to fact that there are legal interrelationships between French law and European Union law (especially "secondary legislation"),<sup>952</sup> it is necessary to conduct a separate legal assessment of some of the most relevant European Directives in terms of LBMP regulation, especially when they have not yet been fully and/or comprehensively implemented in French law.<sup>953</sup> Such an inclusion is also supported by the French "hierarchy of norms" which recognises the "superiority" (in principle) of European legislation over French legislation, especially when there are contradictions between the two levels of legal norms.<sup>954</sup> This Chapter commences by providing an overview of the most relevant Directives in terms of LBMP regulation, the law principles they encompass and their respective regulatory scope and objectives. The Chapter then conducts a detailed legal analysis of the WFD and MSFD using the methodological framework outlined in Chapter 2.<sup>955</sup> Some of the key sectoral Directives<sup>956</sup> in terms of LBMP regulation are also presented and a brief legal analysis, mainly of the direct regulatory instruments that they prescribe, is conducted

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952 As demonstrated in 3.2.2. The EU's 'secondary legislation' is the third major source of community law after the treaties (primary legislation) and international agreements. It can be defined as the totality of the legislative instruments adopted by the European institutions pursuant to the provisions of the treaties. Secondary legislation comprises the binding legal instruments (regulations, Directives and decisions) and non-binding instruments (resolutions, opinions) provided for in the European Community Treaty, together with a whole series of other instruments such as the institution's internal regulations and community action programmes. Europa 2009 [http://eur-lex.europa.eu/en/droit\\_communaire/droit\\_commu\\_nautaire.htm#1.3](http://eur-lex.europa.eu/en/droit_communaire/droit_commu_nautaire.htm#1.3). For further information on European Union environmental law, see Davies *European Union Environmental Law* and Jans and Vedder *European Environmental Law*.

953 In particular, the *Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for community action in the field of water policy* (the Water Framework Directive or WFD), which has been transposed into French legislation but is not yet fully and/or comprehensively implemented. It should be comprehensively implemented during the course of 2010 when the updating process of the SDAGEs and SAGEs takes place. The *Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy* (Marine Strategy Framework Directive or MSFD) has not yet been transposed into French legislation and has to be implemented according to the set timelines.

954 Oppenheimer *The relationship between European community law and national law* 5.

955 In terms of the methodological framework the following regulatory features are analysed in detail: law principles, regulatory scope, regulatory objectives, regulatory instruments, institutional structure, and regulatory priority areas. Refer to 2.3 for further information.

956 Sectoral Directives related to urban waste, IPPC, nitrates and EIA. See 4.6.

in respect of each of them. This Chapter should be regarded as complementary to Chapter 3.

#### **4.1 European Union environmental law and LBMP regulation**

This section outlines the key Directives involved in LBMP regulation. The Directives referred to in this section are the most relevant ones in terms of LBMP regulation and in the French context. This section and Chapter should therefore not be regarded as an exhaustive legal appraisal of European environmental law in terms of LBMP management and regulation. Only the Directives which are regarded as complementary to the French regulatory framework analysed in Chapter 3 (mainly because they have not yet been transposed or are not fully/comprehensively transposed into French law) are presented and analysed in this section.

##### **4.1.1 Most relevant EU Directives in terms of LBMP regulation**

It is important to note that there is no Directive directly aimed at regulating LBMP. Two Directives have been identified as the most relevant for the regulation of LBMP, namely:<sup>957</sup>

- *Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for community action in the field of water policy (the Water Framework Directive or WFD); and*
- *Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive or MSFD).*

Both are analysed in detail in this Chapter, providing an assessment of their most important regulatory features in terms of LBMP regulation as set out in Chapter 2 and including: law principles, regulatory scope, regulatory objectives, regulatory instruments, institutional structure and regulatory priorities. Some sectoral Directives have also been identified as important for LBMP regulation, including:

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957 As confirmed by Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 88.

- *The Council Directive 91/271/EEC of 21 May 1991 concerning urban wastewater treatment, as amended (Urban Waste Water Directive),*<sup>958</sup>
- *The Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (Nitrates Directive),*<sup>959</sup>
- *The Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control, as amended (IPPC Directive).*<sup>960</sup>

This Chapter provides a concise legal analysis of these sectoral Directives. Finally, it is also important to note that other Directives are involved in the regulation of LBMP, but to a lesser extent, and are therefore not included in this legal analysis. These include the following, which will not be analysed in this study:

- *The Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water (Bathing Water Directive), as amended;*<sup>961</sup>

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958 See 4.6.1 for a concise legal analysis of this Directive in terms of its relevancy for LBMP regulation.

959 See 4.6.3 for a concise legal analysis of this Directive in terms of its relevancy for LBMP regulation.

960 See 4.6.2 for a concise legal analysis of this Directive in terms of its relevancy for LBMP regulation.

961 Repealing the *Council Directive 76/160/EEC of 8 December 1975 concerning the quality of bathing water*. The objective of the Directive is to make provisions for: (a) the monitoring and classification of bathing water quality; (b) the management of bathing water quality; (c) the provision of information to the public on bathing water quality. The purpose of this Directive is to preserve, protect and improve the quality of the environment and to protect human health by complementing the WFD. The new Directive will apply to any area of surface water (limited to coastal water as defined in WFD) where the authorities expect a large number of people to bath and has not imposed a permanent bathing prohibition, or issued permanent advice against bathing. The Directive lays down two parameters for the analysis of bathing water (intestinal enterococci and escherichia coli) instead of nineteen as in the previous Directive. These parameters will be used for monitoring and assessing the quality of the identified bathing waters and for classifying them according to their quality. Member states must monitor their bathing waters. Member states should assess their bathing waters at the end of every season on the basis of the information gathered during that season and the three preceding ones in principle. Following the assessment, the waters are classified in accordance with certain specific criteria, in one of four quality levels: poor, sufficient, good or excellent. The category "sufficient" is the minimum quality threshold that all Member states should attain by the end of the 2015 season at the latest. Where water is classified as "poor", Member states should take certain management measures, in particular banning bathing or posting a notice advising against it, providing information to the public, and should take suitable corrective measures. Member states should also determine the profile of bathing waters, including in

- *The Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (Birds Directive), as amended;*<sup>962</sup>
- *The Council Directive 80/778/EEC of 15 July 1980 relating to the quality of water intended for human consumption (Drinking Water Directive) as amended;*<sup>963</sup>
- *The Council Directive 96/82/EC of 9 December 1996 on the control of major accident hazards (Seveso Directive), as amended;*<sup>964</sup>

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particular a description of the area concerned, any sources of pollution and the location of the water-monitoring points. The profile should be ready by the start of 2011 at the latest and may be revised if a change occurs that is likely to affect the water. Every year the Commission will publish a summary report on the quality of bathing water, based on the reports that the Member states should submit to it before the start of each bathing season. Europa 2008 [http://europa.eu/legislation\\_summaries/consumers/consumer\\_safety/28007\\_en.htm](http://europa.eu/legislation_summaries/consumers/consumer_safety/28007_en.htm). For further information about this Directive consult Mansilhaa *et al* 2009 *Marine Pollution Bulletin* 1562-1565 and Europa 2009 [http://ec.europa.eu/environment/water/water-bathing/index\\_en.html](http://ec.europa.eu/environment/water/water-bathing/index_en.html).

- 962 This Directive creates a comprehensive protection regime for all wild bird species naturally occurring in the EU. It was adopted unanimously by the Member states in 1979 in response to increasing concern about the decline in Europe's wild bird populations resulting from pollution, loss of habitats, and the unsustainable use of natural resources. It was also a form of recognition of the fact that wild birds, many of which are migratory, are a shared heritage of the Member states and that their effective conservation requires international co-operation. The Directive recognises that habitat loss and degradation are the most serious threats to the conservation of wild birds. It therefore places great emphasis on the protection of habitats for endangered as well as migratory species, especially through the establishment of a coherent network of Special Protection Areas (SPAs) comprising all the most suitable territories for these species. Since 1994 all SPAs form an integral part of the NATURA 2000 ecological network. Europa 2008 [http://ec.europa.eu/environment/nature/legislation/birds\\_Directive/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/birds_Directive/index_en.htm). In this context, this Directive provides specific planning regulatory instruments (to protect birds) which can also indirectly assist in the regulation of LBMP, when such pollution threatens wild birds. For further information about this Directive consult Davies *European Union Environmental Law* 119-155 and Jans and Vedder *European Environmental Law* 54-89.
- 963 As amended by Directive 98/83/EC. The Directive sets quality standards for drinking water quality at the tap (microbiological, chemical and organoleptic parameters) and the general obligation that drinking water must be wholesome and clean. It obliges Member states to conduct regular monitoring of drinking water quality and to provide to consumers adequate and up-to-date information on their drinking water quality. Europa 2009 [http://ec.europa.eu/environment/water/water-drink/index\\_en.html](http://ec.europa.eu/environment/water/water-drink/index_en.html). For further information about this Directive see Jans and Vedder *European Environmental Law* 33-70; Bartram *European water and health in Europe* 161-196; Kissling-Näf and Kuks *The evolution of national water regimes in Europe* 33-35.
- 964 In 1982 the first EU Directive, Directive 82/501/EEC – the so-called Seveso Directive – was adopted. On 9 December 1996 the Seveso Directive was replaced by Council Directive 96/82/EC, the so-called Seveso II Directive. This Directive was extended by Directive 2003/105/EC. The Seveso II Directive applies to some thousands of industrial establishments where dangerous substances are present in quantities exceeding the thresholds in the Directive. The Directive aims at the control of major-accident hazards involving dangerous substances. For further information, see IMPEL Network *Interrelationship between IPPC, EIA,*

- *The Council Directive of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment, as amended*<sup>965</sup> (EIA Directive);<sup>966</sup>
- *The Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture (Sewage Sludge Directive);*<sup>967</sup>

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*SEVESO Directives and EMAS Regulation; Europa 2009 <http://ec.europa.eu/environment/seveso/index.htm>; and Kirchsteiger, Christlou and Papadakis *Risk assessment and management* 27-40.*

- 965 As amended by Council Directive 97/11/EC of 3 March 1997 and Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003.
- 966 This Directive applies to the assessment of the environmental effects of those public and private projects which are likely to have significant effects on the environment. For the purposes of this Directive, "project" means the execution of construction works or of other installations or schemes, other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources; "developer" means the applicant for authorisation for a private project or the public authority which initiates a project; and "development consent" means the decision of the competent authority or authorities which entitles the developer to proceed with the project. In terms of the EIA Directive, the EIA procedure ensures that the environmental consequences of projects are identified and assessed before authorisation is given. The public can give its opinion and all results are taken into account in the authorisation procedure of the project. The public is informed of the decision afterwards. The EIA Directive outlines which project categories shall be made subject to an EIA, which procedure shall be followed and the content of the assessment. The Directive provides that the EIA shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect effects of a project on the following factors: human beings, fauna and flora; soil, water, air, climate and the landscape; material assets and the cultural heritage, and the interaction between these factors. Annex I to the EIA Directive sets out the list of projects which shall be made subject to an assessment in accordance with Art 5 to 10 of the Directive. Annex II lists the types of projects for which Member states shall determine through (a) a case-by-case examination, or (b) thresholds or criteria set by the Member state, if the project shall be made subject to an assessment in accordance with Art 5 to 10. Member states may provide for a single procedure in order to fulfil the requirements of this Directive and the requirements of the IPPC Directive, Europa 2008 <http://ec.europa.eu/environment/eia/eia-support.htm>. On the 6 July 2010, the European Commission has launched a public consultation in relation to the review of the EIA Directive, EU 2010 <http://europa.eu/>. Such a Directive has been incorporated in the water nomenclature and *installations classées* procedures prescribed by French environmental law as outlined in 3.6 For further information about this Directive consult Davies *European Union Environmental Law* 156-185.
- 967 This Directive regulates the use of sewage sludge in agriculture to prevent harmful effects on soil, vegetation, animals and people. In particular it sets limits on the concentrations of certain substances in these sludges, bans the use of these sludges in certain cases, and regulates the treatment of sludge. The Directive lays down limit values for concentrations of heavy metals in the soil and in sludge, and for the maximum annual quantities of heavy metals which may be introduced into the soil. The use of sewage sludge is prohibited if the concentration of one or more heavy metals in the soil exceeds the limit values. The Member states must therefore take the necessary steps to ensure that those limit values are not exceeded as a result of using sludge. Sludge must be treated before being used in agriculture but the Member states may authorise the use of untreated sludge if it is injected or worked into the

- *The Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive);*<sup>968</sup>
- *Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market (Biocidal Product Directive);*<sup>969</sup>
- *Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides (Pesticides Directive);*<sup>970</sup> and

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- soil. Europa 2006 [http://europa.eu/legislation\\_summaries/agriculture/ environment/128088\\_en.htm](http://europa.eu/legislation_summaries/agriculture/ environment/128088_en.htm). This Directive has been incorporated in the *Code de l'environnement*. See 3.8.2. For further information about this Directive, consult Merrington 2002 *Spon's Press* in particular 125-128 and European Environment Agency *Agriculture and environment* 45-89.
- 968 The Habitats Directive is the EU's single most important legal tool for biodiversity conservation. The Habitats Directive aims to "contribute towards ensuring biodiversity through the conservation of natural habitats and of the wild fauna and flora", thus contributing to the EU's implementation of its commitments on conservation outlined in the Convention on Biological Diversity. This Directive prescribes specific regulatory planning instruments which might indirectly assist the regulation of LBMP, when such pollution results in marine/coastal habitat destruction. For further information about this Directive consult Davies *European Union Environmental Law* 119-155.
- 969 The Biocidal Product Directive aims to harmonise the European market for biocidal products and their active substances. At the same time it aims to provide a high level of protection for people, animals and the environment, Europa 2009 <http://ec.europa.eu/environment/biocides/index.htm>. In terms of the Directive, "biocidal products" are any chemicals or micro-organisms, or mixtures of either or both, intended to control unwanted organisms, such as animals, insects, bacteria, viruses and fungi. The Directive requires the submission and evaluation of data relating to substances' chemistry, toxicity to humans, and toxicity and fate in the environment and to ensure that products are sufficiently effective against the target species. The scope of the Directive is very wide, covering 23 different product types. These include disinfectants used in different areas, chemicals used for the preservation of products and materials, non-agricultural pesticides, and anti-fouling products used on the hulls of vessels. The Directive will not apply to certain product types already covered by other EC legislation, such as plant protection products, medicines, and cosmetics. On 12 June 2009 the EC adopted a *Proposal for a Regulation concerning the placing on the market and use of biocidal products*. The proposed regulation will repeal and replace the current Directive 98/8/EC concerning the placing of biocidal products on the market. The objective of the proposal is to improve the functioning of the internal market in biocidal products while maintaining a high level of the environmental and human health protection. For further information about this Directive see Europa 2009 <http://ec.europa.eu/environment/biocides/index.htm> and Knight and Cooke *The biocides business* 45-74.
- 970 This Directive establishes a framework to achieve a sustainable use of pesticides by reducing the risks and impacts of pesticide use on human health and the environment and promoting the use of integrated pest management and of alternative approaches or techniques such as non-chemical alternatives to pesticides. In terms of the Directive, Member states shall adopt national action plans to set up their quantitative objectives, targets, measures and timetables to reduce the risks and impacts of pesticide use on human health and the environment and to

- *Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the registration, evaluation, authorisation and restriction of chemicals (REACH).*<sup>971</sup>

#### 4.1.2 Law principles incorporated in European environmental law

The EU regulatory framework, especially the provisions of the WFD and MSFD, have also been analysed within the context of Chapter 2 as sources of international best practice. The MSFD was especially relevant to Chapter 2 as it was regarded as the

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encourage the development and introduction of integrated pest management and of alternative approaches or techniques in order to reduce dependency on the use of pesticides. These targets may cover different areas of concern, for example worker protection, protection of the environment, residues, the use of specific techniques, or pesticide use in specific crops. The Directive regulates the following activities related to pesticides: training, information and awareness-raising; sales; application equipment; spraying; specific measures to protect the aquatic environment and drinking water; the reduction of pesticide use or risks in specific areas; the handling and storage of pesticides and the treatment of their packaging and remnants; integrated pest management; indicators, reporting and information exchange; the exchange of information and best practice; fees and charges; and standardisation. At present, this Directive applies to pesticides which are plant protection products. However, it is anticipated that the scope of this Directive will be extended to cover biocidal products. In this context, *Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC* is also very important, and it will see some "active substances" in pesticides banned. In particular, says the European Parliament, the legislation seeks to outlaw highly toxic chemicals such as those that cause cancer. For further information about this Directive see Europa 2009 <http://ec.europa.eu/environment/ppps/home.htm>. For further information about the previous and current EU legal regime regarding pesticides management refer to Carter *et al Pesticide contamination of water sources* and Valery and *al Integrated Environmental Assessment and Management* 167-172.

971 The regulation amended Directive 1999/45/EC and repealed Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. The aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. The benefits of REACH will come gradually, as more and more substances are phased into REACH. REACH gives greater responsibility to industry to manage the risks from chemicals and to provide safety information on the substances. Manufacturers and importers will be required to gather information on the properties of their chemical substances, which will allow their safe handling, and to register the information in a central database run by the European Chemicals Agency (ECHA). REACH also calls for the progressive substitution of the most dangerous chemicals when suitable alternatives have been identified. REACH provisions will be phased-in over 11 years. REACH creates a single system for both "existing" and "new" substances; substances are now described as non-phase-in substances (i.e. those not produced or marketed prior to the entry into force of REACH) and phase-in substances (those substances listed in the EINECS, or those that have been manufactured in the EC, but not placed on the EC market, in the last 15 years or the so-called "no longer polymers" of Directive 67/548). For further information about REACH see European Commission *REACH in brief* and Knight *New EU regulation of chemicals: REACH*.

latest and most cohesive relevant legal development in the world, and therefore it was deemed necessary to include it in the review of international best practice. The EU environmental regulatory framework encompasses the following law principles:<sup>972</sup>

- General environmental law principles:<sup>973</sup> the precautionary principle, integrated management, the polluter pays principle, sustainable development, adaptive management, the participatory/participative approach, collaborative management, equity and flexibility, and transparency.
- Environmental law principles related to sustainable resources management:<sup>974</sup> the equitable and sustainable use of water resources, integrated river basin/watershed management,<sup>975</sup> integrated pollution prevention and control, integrated ecosystem-based approach,<sup>976</sup> and an integrated territorial approach.<sup>977</sup>
- A specific environmental law principle related to coastal and marine management:<sup>978</sup> the European environmental legal framework refers mainly to integrated coastal area/zone management.<sup>979</sup>

However, it has to be emphasised that "in the light of a prudent and rational utilisation of natural resources, European Community environmental law is not based on the user pays principle",<sup>980</sup> which is important in terms of the regulation of water use,

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972 For further information about law principles in European environmental law, refer to Macrory Havercroft Avosetta Group of European Environmental Lawyers and Purdy *Principles of European environmental law* and Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 89. Also see 2.3.1.

973 Such principles relate to environmental management generally. Refer to 2.3.1 for further information about them.

974 Such principles relate specifically to resources management. Refer to 2.3.1 for further information. Community-based natural resources management and multi-use management are not directly referred to in the EU framework

975 In terms of the WFD, a river basin is the area of land from which all surface run-off flows through a sequence of streams, rivers and possibly lakes into the sea at a single river mouth, estuary or delta. The WFD defines a basin district as an area of land and sea made up of one or more neighbouring river basins together with their associated groundwaters and coastal waters. Basin districts are identified as the main units for management of river basins.

976 As prescribed by the MSDF and WFD.

977 As prescribed by the MSDF and WFD.

978 Such principles relate only to marine and coastal management. Refer to 2.3.1 for further information.

979 As prescribed by MSDF. See 2.3.1.

980 Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 89.

especially for those who could be sources of LBMP (whose activities involve the release of waste water, water treatment, and so forth). It is also an important principle in terms of financial management, as explained in Chapter 2.

The law principles encompassed are mostly<sup>981</sup> in accordance with the guidance derived from international best practice for LBMP regulation.<sup>982</sup>

## 4.2 Regulatory scope and objectives

This section sets out a legal analysis of the regulatory scope and objectives as prescribed by the main Directives in terms of LBMP regulation, namely the WFD and MSFD.<sup>983</sup>

### 4.2.1 WFD

The approach in the Directive is to rationalise the European Union's water legislation by replacing seven of the "first wave" Directives (dealing with surface water; measurement methods, sampling frequencies and exchanges of information on fresh water quality; fish water; shellfish water; groundwater; and dangerous substances discharges) with one framework Directive.<sup>984</sup> The aim of the WFD is to establish a framework for the protection of inland surface

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981 As indicated above, some principles which can be extrapolated from international best practice (refer to 2.3.1) are not encompassed in the European environmental legal framework. However, most of the key principles are included.

982 Refer to 2.3.1

983 It is important to note that that no EU Directive specifically regulates LBMP. Also see Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 89-94.

984 The first Directives, adopted in the mid-1970s, established a series of quality standards aimed at protecting human health and the living environment, including surface water used for drinking water, bathing water, fish waters, shellfish waters, groundwater and water for human consumption. In the same "generation" of legislation, a Directive that set standards for the discharge of dangerous substances into the aquatic environment was for many years the main instrument used to control emissions from industry. "To make this patchwork of policies and legislation more coherent, the EU adopted the WFD in 2000, creating a global and unified approach to water legislation". For more information, refer to European Commission 2009 [http://ec.europa.eu/environment/water/water-framework/pdf/water\\_note9\\_other\\_water\\_legislation.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/water_note9_other_water_legislation.pdf). The WFD is supported by other EU environmental legislation, i.e. REACH and the Biocidal Products Directive. For further information about the WFD, see Page and Kaika *The EU water framework directive* 2003; Wiley *InterScience*. Rahaman, Varis and Kajander 2004 *International Journal of Water Resources Development* 565-575; Page and Kaika *The EU water framework directive*.

waters,<sup>985</sup> transitional waters,<sup>986</sup> coastal waters<sup>987</sup> and groundwater. The Directive strives to implement "long-term sustainable water management based on a high level of protection of the aquatic environment".<sup>988</sup> It establishes a legal framework to protect and restore clean water across Europe and ensure its long-term, sustainable use. In terms of Article 4.1 of the WFD, its general objective is "to be achieved in all surface and groundwater bodies: a good status by 2015, and to introduce the principle of preventing any further deterioration of status". In this context, the Directive implements legal concepts and definitions which are relevant for the regulation of LBMP. The WFD implements the concept of the "ecological status",<sup>989</sup> which reflects the quality of the structure and functioning of aquatic ecosystems associated with surface waters. As stated in Chapter 2 this concept is very important in terms of the resource-directed regulatory approach and associated regulatory instruments.<sup>990</sup> The WFD refers to "good surface water chemical status", which indicates the chemical status required to meet the prescribed/determined environmental objectives<sup>991</sup> for surface waters, which is the chemical status achieved by a body of surface water in which concentrations of pollutants do not exceed the environmental quality standards.<sup>992</sup> The WFD also implements the concept of "emission limit values"<sup>993</sup> and

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985 In terms of the WFD, the phrase "surface water" means inland waters, except for groundwater, transitional waters and coastal waters, except in respect of their chemical status, for which purpose it shall also include territorial waters. The WFD defines inland waters as all standing or flowing water on the surface of the land, and all groundwater on the landward side of the baseline from which the breadth of territorial waters is measured.

986 In terms of WFD, transitional waters are bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters, but which are substantially influenced by freshwater flows.

987 See below for a legal discussion on the definition of coastal water and its implications in terms of the regulatory scope.

988 Preamble of the WFD.

989 See 4.3.1.1(a) for the analysis of the regulatory instrument(s) implemented by the Directive in this context.

990 Refer to 2.3.4.1.

991 See 4.3.1.1(a) for the analysis of the regulatory instrument(s) implemented by the WFD in this context.

992 "Environmental quality standard" is defined in WFD as "the concentration of a particular pollutant or group of pollutants in water, sediment or biota which should not be exceeded in order to protect human health and the environment" and which is a "resource-directed approach".

993 It is defined by WFD as the mass, expressed in terms of certain specific parameters, concentration and/or level of an emission, which may not be exceeded during any one or more periods of time. Emission limit values may also be laid down for certain groups, families or

"emission controls",<sup>994</sup> which are relevant in terms of the sources-directed regulatory approach.<sup>995</sup> The Directive is very relevant in the context of LBMP as:<sup>996</sup>

- It includes coastal and transitional waters in its geographical scope, and to some extent territorial waters;<sup>997</sup>
- It aims to prevent further deterioration and to protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;<sup>998</sup> and
- It strives to implement a legal framework which will promote sustainable water use based on the long-term protection of available water resources.<sup>999</sup>

Another relevant objective is "enhanced protection and improvement of the aquatic environment", *inter alia*, through specific measures for the progressive reduction of discharges, emissions and losses of priority substances, and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances.<sup>1000</sup> The WFD has a strong focus on water pollution control and management. The relevance of the WFD in terms of LBMP regulation is reinforced in its Preamble which states that:

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categories of substances. The emission limit values for substances shall normally apply at the point where the emissions leave the installation, dilution being disregarded when determining them. With regard to indirect releases into water, the effect of a waste-water treatment plant may be taken into account when determining the emission limit values of the installations involved, provided that an equivalent level is guaranteed for protection of the environment as a whole and provided that this does not lead to higher levels of pollution in the environment.

994 The Directive defines them as controls requiring a specific emission limitation, for instance an emission limit value, or otherwise specifying limits or conditions on the effects, nature or other characteristics of an emission or operating conditions which affect emissions. Use of the term emission control in this Directive in respect of the provisions of any other Directive does not amount to a reinterpretation of those provisions in any respect.

995 As defined and analysed in 2.3.4.1. See 4.3.1.2 for the analysis of the regulatory instrument(s) implemented by the Directive in this context.

996 Art 1 of the WFD.

997 Art 1 of the WFD.

998 Art 1 of the WFD.

999 Art 1 of the WFD.

1000 Art 1 of the WFD.

An effective and coherent water policy must take account of the vulnerability of aquatic ecosystems located near the coast and estuaries or in gulfs or relatively closed seas, as their equilibrium is strongly influenced by the quality of inland waters flowing into them. Protection of water status within river basins will provide economic benefits by contributing towards the protection of fish populations, including coastal fish populations.

One of its objectives in this context is the protection of territorial and marine waters, achieving concentrations in the marine environment "near background values for naturally occurring substances and close to zero for man-made synthetic substances".<sup>1001</sup> This objective seems very ambitious, as it would have to translate into a total prohibition on the release of man-made synthetic substances in the marine environment and the rehabilitation of certain areas to ensure that current substances in the marine environment are neutralised. All of these regulatory objectives are relevant and cohesive in terms of LBMP regulation.<sup>1002</sup> They address the protection of the environment, pollution management (from inland sources), and the protection of human health. The management of water use is also addressed as a priority with the ultimate aim of ensuring the sustainable use of the resource.<sup>1003</sup>

The regulatory scope of the WFD is comprehensive in terms of LBMP regulation as it includes fresh, transitional and coastal waters (including territorial seas to some extent). The WFD does not provide a definition of marine waters. However, it is understood that in this context that marine waters should at least include coastal, transitional and territorial waters.<sup>1004</sup> WFD defines "coastal waters" as:

... surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.

Such a definition adopts a restrictive approach limiting the geographical scope of coastal waters to one nautical mile only and not including territorial seas. Therefore the protection of coastal waters in terms of the WFD is limited by the definition of

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1001 Art 1 of the WFD. The Directive does not provide a definition of marine waters. However, it is understood in this context that marine waters should at least include coastal, transitional and territorial waters.

1002 As analysed in terms of international best practice. See 2.3.3.

1003 For further information see Chave *The EU water framework directive*.

1004 Also see Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 89-92.

coastal waters, which can be regarded as a regulatory limitation in terms of effective LBMP regulation.<sup>1005</sup> The high seas are also excluded from the geographical scope, which can also be considered as a regulatory limitation/gap.<sup>1006</sup> The activities regulated, include land-based activities within river basin districts or catchment areas.<sup>1007</sup>

#### 4.2.2 MSFD

The MSFD establishes a framework for community action in the field of marine environmental policy.<sup>1008</sup> The overall regulatory objective of the Directive can be found in the Preamble which states that:

The marine environment is a precious heritage that must be protected, preserved and, where practicable, restored with the ultimate aim of maintaining biodiversity and providing diverse and dynamic oceans and seas which are clean, healthy and productive. In that respect, this Directive should, *inter alia*, promote the integration of environmental considerations into all relevant policy areas and deliver the environmental pillar of the future maritime policy for the European Union.

The overall aim is to promote sustainable use of the seas and to conserve marine ecosystems.<sup>1009</sup> The MSFD is aimed at addressing aspects of the environmental status of the marine environment which are not already dealt with by the WFD or other community legislation, "so as to ensure complementarity while avoiding unnecessary overlaps".<sup>1010</sup> The MSFD also strives to address and provide measures and instruments to manage all human activities that have an impact on the marine environment.<sup>1011</sup> The Directive prescribes "an ecosystem-based approach"<sup>1012</sup> to the management of human activities, ensuring that the cumulative impacts of such activities are maintained within levels compatible with "the achievement of good

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1005 Also refer to 2.3.2 for guidance from international best practice on this matter.

1006 Refer to the previous footnote.

1007 Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 89-92.

1008 Also see Basedow and Magnus *Pollution of the sea* 80-83; Frank *The European community and marine environmental protection* 98-101; Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 92-94.

1009 Art 1 of the MSFD.

1010 Point 12 of the Preamble of the MSFD.

1011 Also see Basedow and Magnus *Pollution of the sea* 80-83; Frank *The European community and marine environmental protection* 98-101.

1012 Point 8 of the Preamble of the MSFD and Art 1.

environmental status and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while enabling the sustainable use of marine goods and services by present and future generations".<sup>1013</sup> This objective is considered as comprehensive in terms of LBMP regulation, striving to reach a balance between marine and coastal uses and protection of the environment, within the context of sustainable development, which is aligned with international best practice.<sup>1014</sup> In this context the Directive introduces legal concepts and definitions which are important for LBMP regulation. The MSFD follows an approach similar to that of the WFD.<sup>1015</sup> The MSFD incorporates the concept of "environmental status"<sup>1016</sup> by referring to the overall state of the environment in marine waters, taking into account the structure, function and processes of the constituent marine ecosystems together with their natural physiographic, geographic, biological, geological and climatic factors, as well as their physical, acoustic and chemical conditions, including those resulting from human activities inside or outside the area concerned. The definition is broad and comprehensive, especially given the resource-directed regulatory approach and the related instruments for LBMP regulation. The definition of "environmental status" should assist in the regulation of the quality of marine waters, and therefore facilitate effective regulation of LBMP. In terms of MSFD, "good environmental status" means the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations.<sup>1017</sup> This comprehensive objective is aligned with

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1013 Art 1 of the MSFD.

1014 Refer to 2.3.2.

1015 European Commission 2009 [http://ec.europa.eu/environment/water/water-framework/pdf/water\\_note9\\_other\\_water\\_legislation.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/water_note9_other_water_legislation.pdf).

1016 See 4.3.1.1(b) for the analysis of the regulatory instrument(s) prescribed by the Directive in this context.

1017 Such a "good environmental status" should ensure that the structure, functions and processes of the constituent marine ecosystems, together with the associated physiographic, geographic, geological and climatic factors, allow those ecosystems to function fully and to maintain their resilience to human-induced environmental change. Marine species and habitats should be protected, human-induced decline of biodiversity should be prevented, and diverse biological components should function in balance. Finally hydro-morphological, physical and chemical properties of the ecosystems, including those properties which result from human activities in the area concerned, should support the ecosystems as described above. Anthropogenic inputs

international best practice in terms of LBMP regulation,<sup>1018</sup> ensuring sustainable development and the use and protection of the marine environment.<sup>1019</sup>

The regulatory scope encompasses all marine waters<sup>1020</sup> under national jurisdiction (from a protection perspective), which includes coastal waters as defined under the WFD,<sup>1021</sup> which are regarded as "an integral part of the marine environment".<sup>1022</sup> The geographical scope of the marine environment to be protected is wide but does not include the high seas. In terms of the activities and sources of pollution to be regulated, it includes land and marine sources of pollution. The MSFD is not restrictive in terms of the sources of pollution and/or impacts. It refers only generally to "pressures and human activities". The geographical and material regulatory scopes are rather comprehensive when assessed against international best practice.<sup>1023</sup> However, the MSFD prescribes that the effect of its provisions should apply only to

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of substances and energy, including noise, into the marine environment should not cause pollution effects.

1018 As indicated in Chapter 2, international best practice suggests the implementation of regulatory Instruments based on the "resource-directed approach" which is based on marine environmental quality objectives and standards. Such an approach is primarily focused on "the quality of water, biota or sediments that must be maintained for a desired level of quality and intended use". Such regulatory instruments might involve the determination of "quality objectives" (setting the maximum allowable pollution inputs that will ensure that the desired levels of environmental quality are met), standards based on "current ambient quality" (when standards are set based on existing levels which must not be exceeded), or based on the "dilution capacity/rate" (when dynamic characteristics of the receiving environment are used to determine the rate and level of dilution and when consequently standards are derived from measured parameters taken at given distances from the discharging source). They might also include the setting of a "loading allocation" (when allowable discharges are measured in terms of the total allowable for an entire receiving environment, regardless of specific site quality) or "ambient quality objectives". Such measures might also involve the determination of a "classification system" and/or a "reserve" for relevant water resources.

1019 Refer to 2.3.3.

1020 In terms of Art 3 of the Directive, "marine waters" means: (a) waters, the seabed and subsoil on the seaward side of the baseline from which the extent of territorial waters is measured extending to the outmost reach of the area where a Member state has and/or exercises jurisdictional rights, in accordance with the UNCLOS, with the exception of waters adjacent to the countries and territories mentioned in Annex II to the Treaty and the French Overseas Departments and Collectivities; and coastal waters as defined by the WFD, their seabed and their subsoil, in so far as particular aspects of the environmental status of the marine environment are not already addressed through that Directive or other Community legislation.

1021 As far as coastal waters are concerned, the MSFD applies to coastal waters only to the extent that activities are not covered by the WFD or other Community legislation. Marine internal waters like the Etang de Berre in France are regulated by the WFD. Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 2009 92.

1022 Art 4.

1023 Refer to 2.3.2.

Member states which have marine waters,<sup>1024</sup> a provision which could limit the effectiveness of LBMP management in the region, as LBMP also might originate from activities based inland in non-coastal states and pollution from non-coastal states which share a watershed basin with coastal states.<sup>1025</sup>

### 4.3 Relevant regulatory instruments

The WFD and MSFD introduce direct and indirect regulatory instruments to achieve these regulatory objectives, most of which are directly relevant to the regulation of LBMP. This section aims at presenting such instruments and providing a critical assessment of each of them.

#### 4.3.1 Direct regulatory instruments

The WFD and MSFD prescribe instruments based on the resource-directed approach, the sources-directed approach, and planning management. Some of the regulatory instruments prescribed by the WFD and MSFD are very similar.

##### 4.3.1.1 Instruments based on the resource-directed approach<sup>1026</sup>

The WFD and MSFD prescribe a variety of instruments based on the resources-directed approach, including the determination of environmental objectives, quality standards, good environmental status and environmental targets, which are generically speaking in accordance with international guidance in this context.<sup>1027</sup>

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1024 Art 2 of the MSFD and point 15 of the Preamble, which states that not all Member states have marine waters as defined in the Directive and, therefore, the effect of the provisions of the MSFD which exclusively address Member states which have marine waters should be limited to those Member states.

1025 Refer to 2.3.2 and 2.3.3 for further information on best practice regarding the regulatory scope and objectives of the regulatory regime in the context of LBMP.

1026 See 2.3.4.1 for further information about instruments based on the resource-directed approach.

1027 Refer to 2.3.4.1

a. "Environmental objectives" and "quality standards" in the WFD

The WFD introduces "environmental objectives" as the main regulatory instruments based on the resource-directed regulatory approach.<sup>1028</sup> In terms of environmental objectives, the WFD refers to "good surface water status" for all surface waters (including coastal and marine waters)<sup>1029</sup> and to "good ecological potential" and "good surface water chemical status"<sup>1030</sup> for internal surface water, coastal waters and transitional waters (it includes territorial waters in the assessment of chemical status.) This resource-directed instrument is relevant in the context of LBMP regulation. "Good chemical status" is defined in terms of "compliance with all the quality standards established for chemical substances" at a European level. The WFD prescribes a review mechanism for these standards and also provides for the establishment of new ones, using a "prioritisation mechanism for hazardous chemicals".<sup>1031</sup> (dealing with regulatory instruments based on the sources-directed regulatory approach) to ensure a minimum chemical quality in the European waters. Two types of environmental quality standards are set for priority substances: "annual average concentrations" and "maximum allowable concentrations".<sup>1032</sup> Annex V of the WFD provides detailed information regarding the determination of "good ecological status" for each category of surface water bodies. The determination of "good

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1028 "An important feature of the WFD is that it is strongly purpose-oriented, in the sense that achieving the aims of the Directive takes priority, and this also includes its further legal elaboration. The goals are defined more concretely in the environmental objectives of Art 4 in the WFD". Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 90. Also see Chave *The EU water framework directive* Chapter 7 and Page and Kaika *The EU water framework directive* 4.

1029 Art 4 of WFD. "The final objective is to achieve the 'good status' of European waters by 2015. The legally vague concept of 'good status' is defined further in the annexes to the Directive. A distinction is made between the good status of groundwater and that of surface waters. Good status can be divided into a chemical component, which applies to both groundwater and surface waters, and an ecological component, which refers to just surface waters". Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 90.

1030 Art 4 of WFD prescribes that Member states shall protect and enhance all artificial and heavily modified bodies of water, with the aim of achieving good ecological potential and good surface water chemical status at the latest 15 years from the date of entry into force of the Directive.

1031 See 4.3.1.2(d).

1032 The former protects against long-term chronic pollution problems, and the latter against short-term acute pollution. Member states are responsible for monitoring the concentrations of priority substances in surface waters as part of their monitoring programmes. European Commission 2009 [http://ec.europa.eu/environment/water/water-framework/pdf/water\\_note8\\_chemical\\_pollution.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/water_note8_chemical_pollution.pdf).

ecological status" should take into consideration the quality of the biological community, the hydrological characteristics and the chemical characteristics.<sup>1033</sup> The Directive prescribes that common definitions for the status of water in terms of quality and, where relevant for the purposes of environmental protection, quantity should be established as "an ancillary element in securing good water quality" and serving the "objective of ensuring good quality".<sup>1034</sup> The WFD indicates that in cases where a body of water is so affected by human activity or its natural condition is such that it may be "unfeasible or unreasonably expensive" to achieve good status, "less stringent environmental objectives may be set on the basis of appropriate, evident and transparent criteria, and all practicable steps should be taken to prevent any further deterioration of the status of waters".<sup>1035</sup> The approach is flexible. It takes into consideration local characteristics and implementation costs related to achieving the environmental objective.<sup>1036</sup>

In compliance with the provisions of the WFD, a *Schéma Directeur d'Aménagement et Gestion de l'Eau* (SDAGE) as prescribed by French legislation,<sup>1037</sup> must set the quality and quantity objectives for each category of water resources (including

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1033 As no absolute standards for biological quality can be set which will apply across the Community, because of ecological variability, the controls are specified as allowing only a slight departure from the biological community, which would be expected in conditions of minimal anthropogenic impact. A set of procedures is provided for identifying that point for a given body of water, and establishing particular chemical or hydromorphological standards to achieve it, together with a system for ensuring that each Member state interprets the procedure in a consistent way (to ensure comparability). The system is somewhat complicated, but this is inevitable given the extent of the ecological variability and the large number of parameters which must be dealt with. See Annex V of the WFD.

1034 Point 19 of the Preamble of the WFD.

1035 Point 31 of the Preamble and Art 4.

1036 However, Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 91, argue that "an understandable and correct use of the WFD exemptions in upstream states will result in more difficulties for downstream states in reaching the goals and standards that follow from the Water Framework Directive, and last but certainly not least, in reaching the goal of a proper protection of the marine environment". The Directive also recommends that technical specifications should be laid down to ensure a coherent approach in the Community. Criteria for the evaluation of water status are an important step forward. The adaptation of certain technical elements to technical development and the standardisation of monitoring, sampling and analysis methods should be adopted by committee procedure. To promote a thorough understanding and consistent application of the criteria for the characterisation of the river basin districts and the evaluation of water status, the Commission may adopt guidelines on the application of these criteria.

1037 Refer to 3.6.3.

coastal waters) in order to reach a good chemical and/or ecological state and to prevent water deterioration.

- b. "Good environmental status" and "environmental targets" in terms of the MSFD

In terms of regulatory instruments based on the resource-directed approach, the MSFD emphasises the importance of adaptability and flexibility, specifying that:

In view of the dynamic nature of marine ecosystems and their natural variability, and given that the pressures and impacts on them may vary with the evolution of different patterns of human activity and the impact of climate change, it is essential to recognise that the determination of good environmental status may have to be adapted over time. Accordingly, it is appropriate that programmes of measures for the protection and management of the marine environment be flexible and adaptive and take account of scientific and technological developments. Provision should therefore be made for the updating of marine strategies on a regular basis.

The Directive requires determination of "good environmental status"<sup>1038</sup> for the waters concerned, and the establishment by 15 July 2012 of a series of environmental targets and associated indicators regarding physical and chemical features, habitat

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1038 The Directive defines 'environmental status' as the overall state of the environment in marine waters, taking into account the structure, function and processes of the constituent marine ecosystems together with natural physiographic, geographic, biological, geological and climatic factors, as well as physical, acoustic and chemical conditions, including those resulting from human activities inside or outside the area concerned. The Directive also defines "good environmental status" as the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations, i.e.:

- (a) the structure, functions and processes of the constituent marine ecosystems, together with the associated physiographic, geographic, geological and climatic factors, allowing those ecosystems to function fully and to maintain their resilience to human-induced environmental change. Marine species and habitats are protected, the human-induced decline of biodiversity is prevented and diverse biological components function in balance;
- (b) hydro-morphological, physical and chemical properties of the ecosystems, including those properties which result from human activities in the area concerned, support the ecosystems as described above. Anthropogenic inputs of substances and energy, including noise, into the marine environment do not cause pollution effects. The Directive specifies that "good environmental status" shall be determined at the level of the marine region or subregion as referred to in Art 4, on the basis of the qualitative descriptors in Annex I. It also indicates that adaptive management on the basis of the ecosystem approach shall be applied with the aim of attaining good environmental status.

types, biological features and hydro-morphology.<sup>1039</sup> Such environmental targets and associated indicators for marine waters should assist in achieving good environmental status in the marine environment, taking into account the indicative lists of pressures and impacts as identified in the MSFD.<sup>1040</sup> In this context, Hilderling Keessen and Van Rijswijk<sup>1041</sup> note that the legal regime established by the MSFD is comparable with the WFD in many respects. They comment, however, that contrary to the WFD, "the MSFD uses environmental targets instead of environmental quality standards", which has the consequence that "the legal obligation following from the MSFD is therefore an obligation of best effort" rather than of results. Member states should take the necessary measures to achieve or maintain good environmental status in all marine waters by 2020<sup>1042</sup> and to protect the resource base upon which marine-related economic and social activities depend. The MSFD sets out qualitative descriptors to determine good environmental status, including reference to<sup>1043</sup>

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1039 Art 9 of the MSFD.

1040 See Appendix 3 for further information.

1041 Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 93.

1042 Art 1 of the MSFD. The Directive makes provision for two special exemptions to this requirement. "The first special case refers to the situation where it is impossible for a Member state to meet its environmental targets because of action or inaction for which the Member state concerned is not responsible, or because of natural causes or *force majeure*, or because of actions which that Member state has itself taken for reasons of overriding public interest which outweigh the negative impact on the environment, or because natural conditions do not allow timely improvement in the status of marine waters. The Member state concerned should substantiate why it considers that such a special case has arisen and identify the area concerned, and should take appropriate *ad-hoc* measures with the aim of continuing to pursue the environmental targets, preventing further deterioration in the status of the marine waters affected, and mitigating the adverse impact within the marine region or subregion concerned. The second special case refers to the situation where a Member state identifies an issue which has an impact on the environmental status of its marine waters, perhaps even of the entire marine region or subregion concerned, but which cannot be tackled by measures taken at national level or which is linked to another Community policy or to an international agreement. In such a case, arrangements should be made to inform the Commission of this within the framework of notification of programmes or measures and, where Community action is needed, to make appropriate recommendations to the Commission and the Council. However, the flexibility introduced for special cases should be subject to control at Community level. The system of the MSFD, however, is more realistic than that of the WFD, since it offers the possibility to invoke an exemption when action or inaction is concerned for which the Member state in question is not responsible". Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 93.

1043 As stated in Annex I of the Directive, biological diversity is maintained; non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems; populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock; all elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity levels capable of ensuring the long-term abundance of the species

biological diversity; non-indigenous species; fish population and commercial exploitation; marine food webs; human-induced eutrophication; sea-floor integrity; the alteration of hydrographical conditions; concentrations of contaminants; contaminants in fish and other seafood; marine litter; and the introduction of energy. The MSFD also provides an indicative list<sup>1044</sup> of elements/features of marine water and marine environment which should assist the determination of environmental status and monitoring process. A list of characteristics as encompassed in the MSFD should be considered in the development of environmental targets.<sup>1045</sup> The environmental targets should be accompanied by indicators and timeframes.<sup>1046</sup>

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and the retention of their full reproductive capacity; human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters; sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected; permanent alteration of hydrographical conditions does not adversely affect marine ecosystems; concentrations of contaminants are at levels not giving rise to pollution effects; contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards; properties and quantities of marine litter do not cause harm to the coastal and marine environment; and the introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment. Also refer to Art 10 of the MSFD.

1044 In table 1 of Annex III of the MSFD.

1045 As per Annex IV of the MSFD, the indicative list of characteristics to be taken into account for setting environmental targets includes adequate coverage of the elements characterising marine waters under the sovereignty or jurisdiction of Member states within a marine region or subregion; the need to set targets establishing desired conditions based on the definition of good environmental status; the establishment of measurable targets and associated indicators that allow for monitoring and assessment; the establishment of operational targets relating to concrete implementation measures to support their achievement; the specification of the environmental status to be achieved or maintained and the formulation of that status in terms of measurable properties of the elements characterising the marine waters of a Member state within a marine region or subregion; consistency in the set of targets; the absence of conflicts between them; the specification of the resources needed for the achievement of targets; the formulation of targets, including possible interim targets, with a timescale for their achievement; the specification of indicators intended to monitor progress and guide management decisions with a view to achieving targets; where appropriate, the specification of reference points (target and limit reference points); the paying of due consideration to social and economic concerns in the setting of targets; the examination of the set of environmental targets, associated indicators and limit and target reference points developed in the light of the environmental objectives, in order to assess whether or not the achievement of the targets would lead the marine waters falling under the sovereignty or jurisdiction of Member states within a marine region to a status matching them; and the compatibility of targets with objectives to which the Community and its Member states have committed themselves under relevant international and regional agreements, making use of those that are most relevant for the marine region or subregion concerned with a view to achieving the environmental objectives.

1046 Art 10 of the MSFD.

The provision for the determination of "good environmental status" and "environmental targets" associated with prescribed indicators and timeframes is aligned with international best practice for LBMP regulation in terms of regulatory instruments based on the resource-directed approach.<sup>1047</sup>

France will have to determine good environmental status for the waters concerned, and establish a series of environmental targets and associated indicators as prescribed by MSFD before 2012. It is currently unclear if such instruments will be incorporated in the SDAGE, but that will most probably be the case, to ensure the integrated and cohesive regulation and management of water resources.

#### 4.3.1.2 *Instruments based on the sources-directed approach*

The WFD and MSFD prescribe various regulatory instruments based on the sources-directed approach, including programmes of measures, the "combined approach for point and diffuse sources", and the determination of priority substances, standards and guidelines.

##### a. Instruments provided by the "Programme of measures" in terms of the WFD

Most of the main regulatory instruments based on the sources-directed approach prescribed by the WFD will be incorporated in the "programme of measures"<sup>1048</sup> which should provide for the implementation of:

The necessary measures to prevent deterioration of the status of all bodies of surface water, shall protect, enhance and restore all bodies of surface water, with the aim of achieving good surface water status at the latest 15 years after the date of entry into force of this Directive.<sup>1049</sup>

The programme of measures can actually be regarded as a combined regulatory instrument combining various types of direct regulatory instruments. Most of the measures to be included in the programme should progressively reduce pollution from priority substances and give rise to the halting or phasing out of the emission,

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1047 Refer to 2.3.4.1 for further information on best practice in this context.

1048 Also see Chave *The EU water framework directive* Chapter 8.

1049 Art 11 of the WFD.

discharge and loss of such priority hazardous substances. Most of these instruments are based on the sources-directed approach.<sup>1050</sup> In terms of the measures to be adopted and implemented, the WFD distinguishes between "basic measures" and "supplementary measures".<sup>1051</sup> The "basic measures" could include a requirement for the prior regulation of emissions/pollution, a prohibition, prior authorisation, or registration based on general binding rules, and/or emission controls for the pollutants concerned. Such measures should address point and diffuse sources. They should also ensure the general maintenance of the hydromorphological condition of the bodies of water, in alignment with the achievement of the required ecological status or good ecological potential. The WFD prescribes that Member states shall take all appropriate steps in implementing such measures "not to increase [the] pollution of marine waters", and the application of the measures taken may on no account lead, either directly or indirectly, to the increased pollution of surface waters or the environment as a whole.<sup>1052</sup> Such a provision is important as it demonstrates the interrelationship between the different water bodies, especially in terms of pollution movement. It also demonstrates that the WFD strives to avoid a "shift" of pollution from one medium to another, or from one water resource to another, and seeks ultimately to reduce pollution at source. The Directive identifies other measures as potential "supplementary" measures, some of which are based on the sources-directed regulatory approach, which Member states within each river basin district may choose to adopt as part of their programme of measures.<sup>1053</sup> This enables states to determine the most adequate mix of regulatory instruments, according to their local circumstances.

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1050 Art 11 of the WFD.

1051 Art 11 of the WFD.

1052 Art 11.6 of the WFD.

1053 "Supplementary" measures might include: legislative instruments; administrative instruments; economic or fiscal instruments; negotiated environmental agreements; emission controls; codes of good practice; recreation and restoration of wetlands areas; abstraction controls; demand management measures, *inter alia*, promotion of adapted agricultural production such as low water requiring crops in areas affected by drought; efficiency and reuse measures, *inter alia*, promotion of water-efficient technologies in industry and water-saving irrigation techniques; pollution strategies; construction projects; desalination plants; rehabilitation projects; artificial recharge of aquifers; educational projects; research, development and demonstration projects; and other relevant measures.

The Directive also prescribes that the European Parliament and the Council shall adopt "specific measures against pollution of water by individual pollutants or groups of pollutants presenting a significant risk to or via the aquatic environment, including such risks to waters used for the abstraction of drinking water".<sup>1054</sup> Such measures shall be aimed at "the progressive reduction of priority hazardous substances" and/or at "the cessation or phasing-out of discharges, emissions and losses".<sup>1055</sup> The WFD states that substances shall be prioritised on the basis of risk to or via the aquatic environment.<sup>1056</sup> Such a risk-based approach is very relevant in the context of LBMP.<sup>1057</sup> The prioritisation process is also aligned with international best practice in terms of LBMP regulation.<sup>1058</sup> The Directive prescribes instruments and measures which shall assist in the identification of the appropriate, cost-effective and proportionate level and combination of product and process controls for both point and diffuse sources.<sup>1059</sup>

As prescribed by French law,<sup>1060</sup> a SDAGE must contain a programme of measures which is aimed at attaining the set environmental objectives, in compliance with the provisions of the WFD.

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1054 Art 16 of the WFD.

1055 Art 16 of the WFD.

1056 Such risks prioritisation should be identified by: risk assessment or targeted risk-based assessment (to be carried out as per European legislation) focusing solely on aquatic ecotoxicity and on human toxicity via the aquatic environment. The WFD enables a faster prioritisation procedure, when required due to time constraints imposed by the quality objectives related target date, where substances are to be prioritised for action are identified by a simplified risk-based assessment procedure based on scientific principles taking particular account of: evidence regarding the intrinsic hazard of the substance concerned, and in particular its aquatic ecotoxicity and human toxicity via aquatic exposure routes, environmental contamination, and other proven factors which may indicate the possibility of widespread environmental contamination, such as production or use volume of the substance concerned, and use patterns.

1057 Refer to 2.3.4.1.

1058 Refer to 2.3.6.

1059 It should also take account of EC-wide uniform emission limit values for process controls. The WFD provides for Community-based level of process controls which may be established on a sector-by-sector basis.

1060 Refer to 3.6.3.

b. Instruments provided by the "Programme of measures" in terms of the MSFD

It is important to recall that the provisions of the MSFD are aimed only at consolidating and complementing (and not replacing) the provisions of the WFD. The "programme of measures" required in terms of the MSFD should therefore complement the one required in terms of the WFD. The MSFD requires the development, by 2015 at the latest, of a programme of measures designed to achieve or maintain good environmental status.<sup>1061</sup> Most of the main regulatory instruments based on the sources-directed approach will be incorporated in the "programme of measures", but as previously said, the programme in itself can be qualified as a combined direct regulatory instrument. The entry into operation of the programme of measures should happen by 2016 at the latest.<sup>1062</sup> The MSFD prescribes that Member states shall ensure that "measures are cost-effective and technically feasible, and shall carry out impact assessments, including cost-benefit analyses, prior to the introduction of any new measure".<sup>1063</sup> Such a prescription is very relevant in terms of LBMP and relates to the concept of BAT and BEP. Member states shall also consider the impact of their programmes of measures on waters beyond their marine waters in order to minimise the risk of damage to, and if possible have a positive impact on, those waters. As previously stated in terms of the WFD, this MSFD also strives to avoid a shift of pollution from one medium to another, or from one water resource to another. This programme of measures should contain<sup>1064</sup>

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1061 Art 13 of the MSFD. Member states shall, in respect of each marine region or subregion concerned, identify the measures which need to be taken in order to achieve or maintain good environmental status.

1062 It has therefore not yet been implemented in France.

1063 Art 13 of the Directive.

1064 In terms of Annex VI of the MSFD a programme of measures may contain the following measures/instruments: input controls (management measures that influence the amount of a human activity that is permitted); output controls (management measures that influence the degree of perturbation of an ecosystem component that is permitted); spatial and temporal distribution controls (management measures that influence where and when an activity is allowed to occur); management coordination measures (tools to ensure that management is coordinated), measures to improve the traceability, where feasible, of marine pollution; economic incentives (management measures which make it in the economic interest of those using the marine ecosystems to act in ways which help to achieve the good environmental status objective); mitigation and remediation tools; management tools which guide human activities to restore damaged components of marine ecosystems; and communication, stakeholder involvement and raising public awareness-related tools.

input controls (management measures that influence the extent of a human activity that is permitted) and mitigation and remediation tools (management tools which guide human activities to restore damaged components of marine ecosystems). Such measures can be assimilated to regulatory instruments based on the sources-directed approach.<sup>1065</sup> However, the provisions of the MSFD are rather vague and do not provide very specific guidance on the types of instruments most suitable in this context.

France will have to develop such programmes of measures in terms of the MSFD. It is currently unclear if the programmes of measures will be incorporated in the SDAGE, but this will most probably be the case to ensure integrated and cohesive regulation and management of water resources.

c. The "combined approach for point and diffuse sources" in terms of the WFD

The WFD introduced an innovative instrument based on the sources-directed regulatory approach, namely "the combined approach for point and diffuse sources".<sup>1066</sup> This approach considers pollution in terms of what is released into the environment (the sources-directed regulatory approach) and the resilience of the receiving waters (the resource-directed regulatory approach).<sup>1067</sup> In terms of point sources the WFD prescribes the following instruments which are based on the sources-directed approach: emission controls based on BAT<sup>1068</sup> and relevant emission limit values which are aligned with international best practice in terms of

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1065 Annex VI of the Directive. The programmes of measures have to take into account relevant measures required under EC legislation, in particular the WFD, the Urban Waste-Water Directive and the Bathing Water Quality Directive, as well as the European legislation on environmental quality standards in the field of water policy. Art 13(2) of the MSFD. However, measures which are obligatory under the Nitrates Directive do not have to be part of the MSFD's programme of measures, despite the fact that pollution of the marine environment is seriously threatened by nitrates or agriculture, Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 93.

1066 Art 10 of the Directive. Also see Chave *The EU water framework directive* Chapter 8, and Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 91. "The WFD is the amalgamation of two existing pollution control strategies: environmental quality standards (EQS) and emission limit values (ELVs)". Page and Kaika *The EU water framework directive* 4.

1067 European Commission 2009 [http://ec.europa.eu/environment/water/water-framework/pdf/water\\_note8\\_chemical\\_pollution.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/water_note8_chemical_pollution.pdf).

1068 Based on Art 10 of WFD.

LBMP regulation.<sup>1069</sup> For diffuse impacts/non-point sources, the WFD prescribes the use of appropriate BEP<sup>1070</sup> which are also aligned with international best practice in terms of LBMP regulation.<sup>1071</sup> The Directive also specifies that BATs, BEPs and other relevant measures should take into consideration existing European legislation.<sup>1072</sup>

In terms of French law, the programmes of measures which have to be set in the SDAGE incorporate to some extent "the combined approach for point and diffuse sources".<sup>1073</sup>

d. Determination of priority substances in terms of the WFD

Article 16 of the WFD sets out a "Strategy against pollution of water", outlining the steps to be taken in terms of water pollution management. The first step involved the establishment of a list of priority substances, which became Annex X of the WFD. The current position is that Annex II of the Directive on Priority Substances (Directive 2008/105/EC) will replace Annex X of the WFD.<sup>1074</sup> 33 substances or groups of substances are on the list of priority substances, and 13 are designated as priority hazardous substances due to their persistence, bioaccumulation and toxicity.<sup>1075</sup> The Directive sets the limits on concentrations in surface waters of the 33 priority substances and eight other pollutants.<sup>1076</sup> Two types of environmental quality standards are set for priority substances: "annual average concentrations" and "maximum allowable concentrations". The "limit values" and "quality objectives" established in terms of the *Directive on pollution caused by certain dangerous*

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1069 See 2.3.4.1(c).

1070 Based on Art 10 of WFD.

1071 See 2.3.4.1(c).

1072 Including the IPPC Directive; Urban waste-water treatment Directive, Nitrates Directive; Bathing Water Directive; Birds Directive; Drinking Water Directive; Seveso Directive; EIA Directive; Sewage Sludge Directive; and Habitats Directive.

1073 Refer to 3.4.2.2.

1074 European Commission 2009 [http://ec.europa.eu/environment/water/water-framework/pdf/water\\_note8\\_chemical\\_pollution.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/water_note8_chemical_pollution.pdf).

1075 Priority hazardous substances are those priority substances which are toxic, persistent and liable to bio-accumulate (PBTs), and other substances or groups of substances of high concern. The rationale for their selection relates to their behaviour in the environment. (REACH follows a similar approach). European Commission 2009 [http://ec.europa.eu/environment/water/water-framework/pdf/water\\_note8\\_chemical\\_pollution.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/water_note8_chemical_pollution.pdf).

1076 Also see Chave *The EU water framework directive* Chapter 8.

substances discharged into the aquatic environment of the Community<sup>1077</sup> are to be used to determine the emission limit values and environmental quality standards required in terms of the WFD. Other emission limit values are also established in terms of other Directives.<sup>1078</sup> Annex VIII of the WFD provides an indicative list of the main pollutants.<sup>1079</sup> This regulatory approach, and the proposed mix of direct-sources based instruments and measures are aligned with guidance from international best practice in terms of LBMP regulation.<sup>1080</sup>

In compliance with the provisions of the WFD, French law also prescribes specific regulatory instruments for specific substances.<sup>1081</sup> It also implements a national programme of action regarding water pollution from dangerous substances.<sup>1082</sup>

e. Standards and guidelines

The WFD and MSFD provide<sup>1083</sup> various sectoral standards and guidelines to assist the development of direct and indirect regulatory instruments related, for example, to the monitoring of the ecological and chemical status of surface waters, the classification and presentation of the ecological status, the presentation of the results of the monitoring, the assessment of impacts and status, economic analysis, the monitoring of quality elements, the setting of chemical quality standards, and the determination of water quality status (high, good, moderate). Such standards relate to both direct and indirect regulatory instruments, and are mainly aimed at ensuring a

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1077 Directive 76/464/EEC of 4 May 1976.

1078 The Mercury Discharges Directive (82/176/EEC), the Cadmium Discharges Directive (83/513/EEC); the Mercury Directive (84/156/EEC); the Hexachlorocyclohexane Discharges Directive (84/491/EEC); and the Dangerous Substance Discharges Directive (86/280/EEC).

1079 Organohalogen compounds and substances which may form such compounds in the aquatic environment; organophosphorous compounds; organotin compounds; substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment; persistent hydrocarbons and persistent and bioaccumulable organic toxic substances; cyanides; metals and their compounds; arsenic and its compounds; biocides and plant protection products; materials in suspension; substances which contribute to eutrophication (in particular, nitrates and phosphates); substances which have an unfavourable influence on the oxygen balance (and can be measured using parameters such as BOD, COD, etc).

1080 Refer to 2.3.4.1.

1081 Refer to 3.4.2.3.

1082 See 3.4.2.3.

1083 In their respective Annexes.

minimum level of consistency within the EU. They should facilitate the development of the specific regulatory instrument they relate to, for example monitoring programmes, the classification system or the quality standards. There are no standards in terms of the source-directed instrument, which could be considered as a regulatory weakness. As suggested by international best practice in terms of LBMP regulation, standards and guidelines are important regulatory instruments, but mainly in terms of source-directed measures.<sup>1084</sup>

#### 4.3.1.3 *Regulatory instruments based on planning management*

The WFD and MSFD prescribes specific planning instruments related to water use designation and management, river basin management, marine eco-regions and marine protected areas.

##### a. Water use designation and management

The WFD promotes sustainable water use to ensure long-term protection of water resources. It does not, however, prescribe specific regulatory instruments regarding water use determination and management. The WFD states that:<sup>1085</sup>

Marine strategies shall apply an ecosystem-based approach to the management of human activities, ensuring that the collective pressure of such activities is kept within levels compatible with the achievement of good environmental status and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while enabling the

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1084 As indicated in Chapter 2, regulatory instruments based on the "sources-directed approach" commonly strive to directly regulate pollution at source, and are especially relevant for point sources. Such an approach is generally based on the "emissions control" concept. Regulatory instruments based on the "sources-directed approach" might involve the development of technology-based standards, which might include the "best practicable technology", or the "best available technology" (BAT), or the "as low as reasonably achievable" approach, or the "zero discharge approach". The regulatory approach based on emissions controls might also include the development of regional emissions standards. Some of the main regulatory instruments in this context might include discharge authorisation and associated standards/conditions, guidelines, a code of practice, permits, equipments standards, general and specific standards, certification, product controls (phasing out, regulated specification, use requirements), market-based instruments, the emissions control of point sources, BAT, BEP, emissions limits, substances bans, substances phasing out, products and substances registries, guidelines for specific activities in terms of pollution and waste management, specification of the requirements for the discharge of effluent, and the listing of priority substances and activities.

1085 Art 1 of the WFD.

sustainable use of marine goods and services by present and future generations.

This approach might not be the most effective as it does not provide for the management and rationalisation of water use. It does not facilitate a proactive allocation and control of water use. The WFD also emphasises the importance of the economic value attached to water use and indicates the importance to base decisions on a clear knowledge of the different uses of water and their potential implications, from an economic, social and environmental perspective.<sup>1086</sup> Overall, it is considered that the MSFD is rather vague on this specific matter.<sup>1087</sup> It can be concluded that the regulatory instruments prescribed in WFD and MSFD for the determination and management of uses could be improved to provide guidance to Member states in managing water uses in the context of sustainable development. Such guidance could provide information on how to classify the uses, allocate them and manage them in a sustainable way. It could also provide guidance on the way to manage conflicts of uses or changes in uses to ensure better and more sustainable use of the resources on the long term.

b. River basin management

In terms of planning instruments, one of the most important prescribed by the WFD is "river basin management".<sup>1088</sup> As previously stated,<sup>1089</sup> the "river basin management" approach enables decisions to be taken as close as possible to the location where water is affected or used. In terms of the WFD, Member states have to identify the individual river basins within their national territory and assign them to individual river

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1086 Own interpretation, based on a review of the relevant provision of the WFD.

1087 In terms of the MSFD, the achievement a "good environmental status" means that the marine waters are clean, healthy and productive within their intrinsic conditions, and that the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations.

1088 Art 3 of the WFD. "As the chosen approach is based on river basins and the protection of surface waters as well as groundwater, the protection of the soil and ground also fall within the scope of the Directive. That is the most important contribution of the WFD in dealing with the protection of the marine environment against land-based pollution". Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 90. For further information also see Holzwarth 2002 *Water Science and Technology* 105-112 and Moss 2004 *Land Use Policy* 85-95.

1089 See 2.3.4.1.

basin districts.<sup>1090</sup> It is also indicated that small river basins may be combined with larger river basins or joined with neighbouring small basins to form individual river basin districts, where appropriate.<sup>1091</sup> The Directive prescribes that coastal waters shall be identified and assigned to the nearest or most appropriate river basin district or districts,<sup>1092</sup> creating a link between fresh water and marine waters, facilitating integrated management based on the ecosystem approach.<sup>1093</sup> A river basin management plan should be developed for each basin.<sup>1094</sup> Section VII of the Directive prescribes the main elements to be covered by such a plan.<sup>1095</sup> In terms of EIA and activities management, the WFD makes a direct reference to other relevant Directives, in particular the EIA Directive describing the assessment of the environmental impact of activities, as previously stated.

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1090 Art 3 of the WFD. River basin districts consist of "an entirety of associated waters, including surface waters, groundwater and coastal waters, and can extend up to a kilometre from the baseline into the marine area or to where the marine waters are substantially influenced by freshwater flows". Hilderling, Keessen and Van Rijswick 2009 *Utrecht Law Review* 90.

1091 Art 3 of the WFD.

1092 Art 3 of the WFD.

1093 Also refer to 2.3.1.

1094 Art 13 of the WDF.

1095 Including as the main items a general description of the characteristics of the river basin district; a summary of significant pressures and the impact of human activity on the status of water (an estimation of point-source pollution, an estimation of diffuse source pollution including a summary of land use, an estimation of pressures on the quantitative status of water including abstractions, an analysis of other impacts of human activity on the status of water); an identification and mapping of protected areas; the mapping of the monitoring networks established and a presentation in map form of the results of the monitoring programmes; a listing of the environmental objectives; a summary of the economic analysis of water use; a summary of the programme or programmes of measures, including the ways in which the objectives established under Art 4 of the WFD are thereby to be achieved; a summary of the measures required to implement Community legislation for the protection of water; the drafting of a report on the practical steps and measures taken to apply the principle of recovery of the costs of water; a summary of the controls adopted for point-source discharges and other activities having an impact on the status of water; a summary of the measures taken regarding priority substances; a summary of the measures taken to prevent or reduce the impact of accidental pollution incidents; a description of the details of the supplementary measures identified as necessary in order to meet the environmental objectives; a description of the details of the measures taken to avoid an increase in the pollution of marine waters; the drafting of a register of any more detailed programmes and management plans for the river basin district dealing with particular sub-basins, sectors, issues or water types, together with a summary of their contents; a summary of the public information and consultation measures taken, their results and the changes to the plan made as a consequence; and a listing of competent authorities.

In order to comply with the provision of the WFD on this matter, French law has established specific river basin districts<sup>1096</sup> and requires the development of a SDAGE for each of them<sup>1097</sup> equivalent to a management plan as prescribed by the WFD.

c. Marine eco regions and marine strategies<sup>1098</sup>

The MSFD requires each Member state to develop a marine strategy, which should be customised to the needs and requirements of its marine waters and which should "reflect the overall perspective of the marine region or subregion concerned".<sup>1099</sup> Marine strategies encompass various stages and predetermined steps<sup>1100</sup> which should lead to the development and implementation of a programme of measures<sup>1101</sup> designed to achieve or maintain good environmental status. The MSFD specifies that Member states are not required to take specific steps where there is no significant risk to the marine environment, or where the costs would be disproportionate taking account of the risks to the marine environment. In implementing the obligations flowing from the MSFD, Member states are to take due account of the various marine regions or sub-regions located within the European Union.<sup>1102</sup> Member states should cooperate to ensure the coordinated development of marine strategies for each marine region or sub-region. They have to ensure that measures are coherent and coordinated across that marine sub-region.<sup>1103</sup> In addition, as pollution from land-based sources originates not only from Member states which have marine waters, the MSFD "obliges all Member states of the European Community that could

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1096 See 3.4.3.2.

1097 See 3.6.3.

1098 "The ecoregion concept fulfils the goal of independence from political borders and that this concept can be used in Europe for implementing the Water Framework Directive". See Moog, Schmidt-Kloiber *et al* 2004 *Hydrobiologia* 21-33.

1099 Art 5 of the MSFD.

1100 Including resource- and sources-directed measures and instruments, direct and indirect instruments.

1101 As specified in 4.3.1.2(b) above.

1102 Art 4(1) MSFD. These regions and sub-regions are in accordance with those employed in relevant regional sea conventions. The Mediterranean Sea constitutes a marine region (Art 4(1) MSFD), which is further divided into sub-regions: the Western Mediterranean Sea, the Adriatic Sea, the Ionian Sea and the Central Mediterranean and Aegean-Levantine Sea. Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 93.

1103 Art 5.2 of the MSFD.

influence the pollution of the marine regions to take all necessary measures to avoid such pollution".<sup>1104</sup>

France will have to ensure the development of such marine strategies by the requested timelines.<sup>1105</sup>

d. Marine protected areas

Marine protected areas are not new in European law.<sup>1106</sup> The MSFD recognises and promotes the establishment of protected areas<sup>1107</sup> as an effective instrument to protect and manage marine biodiversity.<sup>1108</sup> In this context, the MSFD prescribes that

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1104 Art 5 of the MSFD. In terms of this Art Member states sharing a marine region or subregion are obliged to cooperate to ensure that the measures required to achieve the objectives of the Directive, in particular the different elements of the marine strategies, are coherent and coordinated across the marine region or subregion concerned. Also see Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 92.

1105 Art 5 of the MSFD. In terms of this provision Member states concerned endeavour to follow a common approach:

(a) preparation: (i) an initial assessment, to be completed by 15 July 2012, of the current environmental status of the waters concerned and the environmental impact of human activities thereon; (ii) a determination, to be established by 15 July 2012, of good environmental status for the waters concerned; (iii) the establishment, by 15 July 2012, of a series of environmental targets and associated indicators; the establishment and implementation, by 15 July 2014, except where otherwise specified in the relevant Community legislation, of a monitoring programme for the ongoing assessment and regular updating of targets;

(b) programme of measures: (i) the development, by 2015 at the latest, of a programme of measures designed to achieve or maintain good environmental status; entry into operation of the programme by 2016 at the latest.

Member states having borders on the same marine region or subregion covered by the Directive should, where the status of the sea is so critical as to necessitate urgent action, devise a plan of action in accordance with Par.1, which includes an earlier entry into operation of a programmes of measures as well as possible stricter protective measures, provided that this does not prevent good environmental status from being achieved or maintained in another marine region or subregion. In these cases: (a) the Member states concerned shall inform the Commission of their revised timetable and proceed accordingly; (b) the Commission shall be invited to consider providing supportive action to Member states for their enhanced efforts to improve the marine environment by making the region in question a pilot project.

1106 The European Member states have already had to establish marine protected areas on the basis of the Birds Directive and the Habitats Directive (Preamble 6 to the Marine Strategy Framework Directive) and in terms of their international commitments. Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 93.

1107 Including special areas of conservation pursuant to the Habitats Directive, special protection areas pursuant to the Birds Directive, and marine protected areas as agreed by the Community or Member states concerned in the framework of international or regional agreements to which they are parties.

1108 Based on Art 13 of the MSFD.

the programmes of measures<sup>1109</sup> shall include spatial protection measures contributing to coherent and representative networks of marine protected areas, and adequately covering the diversity of the constituent ecosystems, such as special areas of conservation pursuant to the Habitats Directive, special protection areas pursuant to the Birds Directive, and marine protected areas as agreed by the Community or Member states concerned in the framework of international or regional agreements to which they are parties. The MSFD obliges Member states to establish marine protected areas and report their progress in the establishment of these areas to the Commission and the general public by 2013.<sup>1110</sup> The development and implementation of programmes of measures in terms of the MSFD should "lead to the establishment of coherent and representative networks of marine protected areas, which adequately cover the diversity of the constituent ecosystems".<sup>1111</sup> Specific protection measures for protected areas are not envisaged by the MSFD, with one exception.<sup>1112</sup> The WFD also contains an obligation for each Member state to compile a register of all protected areas that lie within a river basin district and to protect them properly, including coastal waters. In addition, "European water law plays a large role in protecting valuable but vulnerable areas in the Mediterranean".<sup>1113</sup> France has developed specific regulatory instruments to protect sensitive and/or vulnerable environments, also assisting in the regulation of LBMP.<sup>1114</sup>

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1109 Refer to 4.3.1.2(b).

1110 "Due to the fact that fresh water as well as marine waters are flowing and moving and interfere with each other, the approach in the Marine Strategy Framework Directive is that of an integrated protection of marine waters based on an ecosystem approach. The MSFD does not have a specific regime for protected areas. Instead, it states that the marine environment as a whole should be protected". Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 95.

1111 Art 13(4) MSFD.

1112 Under Art 13(5) of the MSFD, Member states are obliged to inform the competent authority or international organisation concerned when they consider that the management of a human activity at Community or international level is likely to have a significant impact on the marine environment, particularly in the marine protected areas. The purpose of this notification duty is that the marine environment, and in particular the marine protected areas, are taken into account in the consideration and possible adoption of measures that may be necessary in order to achieve good status of the marine waters by 2020 at the latest. Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 95.

1113 Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 95.

1114 Refer to 4.3.1.2(b).

#### 4.3.1.4 *Combination of direct instruments*

As previously said, the programmes of measures of the MSFD and WSF can be qualified as combined regulatory instruments, combining different categories of direct instruments. For example, in terms of the MSFD, a programme of measures should include "input controls" and "output controls".<sup>1115</sup> It should be a mix of the various categories of direct instruments, which is aligned with the combination of instruments advocated by international best practice, the strategic "cocktail" promoted by Osborn and Datta.<sup>1116</sup> Such programmes of measures might also be categorised as integrated instruments if they integrated indirect regulatory instruments.

#### 4.3.2 *Indirect regulatory instruments*

The WFD and MSFD prescribe specific indirect regulatory instruments related to ecological assessment, financial management, information management, monitoring, and effectiveness management.

##### 4.3.2.1 *Ecological assessment*

The WFD prescribes that an analysis of the characteristics of each river basin should be conducted, including an assessment of the impacts of human activity and an economic analysis of water use.<sup>1117</sup> The requirement of an economic assessment is progressive even in relation to international best practice as outlined in Chapter 2,<sup>1118</sup> demonstrating that the EU considers water resources as a source of services and products with an associated economic value.<sup>1119</sup> The WFD recognises that such information is required to provide a sound basis for Member states to develop programmes of measures aimed at achieving the objectives established under this WFD. Such an ecological, social and economic assessment is regarded as

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1115 Refer to 3.4.3.

1116 Osborn and Datta 2006 *Ocean & Coastal Management* 576-596. Refer to 2.3.4.3.

1117 "The Water Framework Directive (WFD) establishes a comprehensive policy for monitoring and protection of the ecological status of surface waters and groundwater within the European Union, including marine coastal waters". Torquemada, Valdes *et al Descriptors from *Posidonia oceanica**. Regarding the economic analysis, see Rathje *Economic analysis according to the EU water framework directive* 43-46.

1118 Refer to 2.3.4.2(c).

1119 Art 5 of WFD.

necessary to ensure effective and efficient decision-making, and in this context these provisions are aligned with international best practice. As previously said, the SDAGE provides for such an ecological assessment in France.<sup>1120</sup>

The MSFD recognises the need for relevant and adequate information enabling "the identification of suitable indicators for the environmental targets" and "the assessment of the impact of the measures".<sup>1121</sup> It is clear that in terms of the MSFD, sound knowledge of the state of the marine environment is a prerequisite for implementing an efficient and effective management system which is aligned with international best practice.<sup>1122</sup> The MSFD prescribes that an initial assessment of the current environmental status of the waters concerned and the environmental impact of human activities should be completed by 15 July 2012.<sup>1123</sup> The ecological assessment needs to include an identification and analysis of the cause of the change and the possible corrective measures that would need to be taken to restore the good environmental status.<sup>1124</sup> The analysis should also consider elements regarding coastal, transitional and territorial waters covered by relevant provisions of existing Community legislation, in particular the WFD. The MSFD also requires that assessment methodologies should be consistent across the marine regions or sub-regions.<sup>1125</sup> The provisions of the MSFD seem very comprehensive and in alignment with international best practice in terms of ecological assessment.<sup>1126</sup> France will have

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1120 See 3.6.3 and 3.5.1.

1121 Appendix 5 of the MSFD.

1122 See 2.3.4.2(a) for a review of international best practice on this matter.

1123 France will have to comply with this obligation, most probably through the update process of the SAGE and SDAGE of coastal river basin districts. In terms of the Directive, such an assessment should encompass the following: an analysis of the essential features and characteristics, and current environmental status of those waters, and covering the physical and chemical features, the habitat types, the biological features and the hydro-morphology; an analysis of the predominant pressures and impacts, including human activity, on the environmental status of those waters, covering the qualitative and quantitative mix of the various pressures, as well as discernible trends; an analysis of the main cumulative and synergetic effects; and an economic and social analysis of the use of those waters and of the cost of degradation of the marine environment, Art 5 of the Directive.

1124 Art 5 of WFD.

1125 Art 8 of WFD.

1126 Internationally, best practice recognises the need to conduct an initial assessment of the ecological status of the coastal and marine environment, evaluating the conditions and features of the coastal and marine environment (physical, biological and chemical characteristics). Such an assessment should also provide an assessment of the state of LBMP, including an inventory of inputs of substances and activities from land-based activities

to ensure that such an assessment is conducted within the prescribed timeline and according to the specific requirements as prescribed by the MSFD.

#### 4.3.2.2 Financial management

The WFD promotes the "recovery of the costs of water services".<sup>1127</sup> The WFD prescribes that "environmental and resource costs associated with damage or negative impact on the aquatic environment should be taken into account in accordance with, in particular, the polluter-pays principle". International best practice suggests the adoption of the polluter and user pays principles, especially in terms of the mobilisation of finance.<sup>1128</sup> The WFD prescribes that an economic analysis of water services based on long-term forecasts of supply and demand for water in the river basin district is necessary, a demand which is aligned with guidance from international best practice in terms of financial planning.<sup>1129</sup> The overall aim in terms of the Directive is to ensure the recovery of costs for water services by 2010, which is regarded as an ambitious objective considering the costs related to water services

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and sources, information on the distribution of activities and sources and the quantities of such substances introduced into the coastal and marine environment. This assessment should be conducted on a regular basis and accompanied by monitoring programmes to assess the evolution of the ecological status and progress of the measures implemented. Such an assessment is essential to identify the priority areas in terms of LBMP which need to be regulated as a matter of urgency, to identify the environments which need to be protected as a priority, the main sources of LBMP, and the contributing factors. Refer to 2.3.4.2(a) for an analysis of international best practice in this context.

1127 Art 9 of WFD. See Unnerstall and Messner 2007 *Advances in the Economics of Environmental Resources* 15. "The EU Water Framework Directive (WFD) prescribes cost-effectiveness analysis (CEA) as an economic tool for the minimisation of costs when formulating programmes of measures to be implemented in the European river basins by the year 2009. The WFD does not specify, however, which approach to CEA has to be taken by the EU Member states". Van Engelen, Seidelin *et al* 2008 *Water Policy* 207-220. Also see Page and Kaika *The EU water framework directive* 5-6: "The sixth major shift in policy marked by the WFD was the introduction of aspects of water pricing at full cost recovery (Art 9), an overtly economic tool, which initially appears to be ill placed within an environmental piece of legislation concerned with conservation and public health".

1128 However, WFD also allows certain derogations for less favoured areas or to ensure affordability of basic services. Europa 2009 [http://ec.europa.eu/environment/water/water-framework/pdf/water\\_note9\\_other\\_water\\_legislation.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/water_note9_other_water_legislation.pdf). International best practice recognises that the access and allocation of appropriate finance/investment (public and private) for the implementation of a regulatory framework pertaining to LBMP is critical for the effective regulation of LBMP. In this context, international best practice advocates specific regulatory instruments related to (a) financial planning, (b) financial mobilisation and (c) financial instruments mainly from the public (government) sector perspective. Also see 2.3.4.2(c) for an analysis of international best practice on this matter.

1129 Art 9 of WFD.

and various upgrade infrastructure projects which have had to be implemented in terms of water services.<sup>1130</sup> It might therefore be difficult to recover such costs in such a short period.<sup>1131</sup> In terms of WFD, water-pricing policies must provide for adequate incentives for users "to use water resources efficiently, and thereby contribute to the environmental objectives of this Directive".<sup>1132</sup> The Directive promotes the use of economic instruments by Member states as part of the programme of measures. This approach is also aligned with international best practice in terms of the implementation of specific financial instruments.<sup>1133</sup> However, the information provided in terms of financial management in the WFD is general and fairly limited. In terms of financial management, the MSFD provides no specific guidance or requirements for Member states, which is a regulatory weakness, due to the importance of financial management instruments for the regulation of LBMP, as is the

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- 1130 GWI's Water Market Europe predicts that over the next decade, 320 euros billion will be spent by the fifteen pre-2004 members of the EU, along with Norway and Switzerland: 124 euros billion on water and 196 euros billion on wastewater. At an average cost of 790 euros per inhabitant, there will be a lot of pressure to see this money put to good use in creating new opportunities for providers of goods and services in order to help the incumbent utilities. The total cost of replacing Europe's lead water distribution mains will be at least 20 euros billion, with perhaps a further 50 euros billion being needed if all domestic pipes made of lead or with lead solder are also to be replaced, with the most spending in France, Italy and Britain. Compliance with other aspects of the Drinking Water Directive will cost 6 euros billion- 9.5 euros billion, with a further 2.5 euros billion- 10 euros billion required for other EU Directives. Global water intelligence 2005 <http://www.globalwaterintel.com/archive/6/8/market-insight/new-realities-require-a-new-discipline.html>.
- 1131 Most Member states still have significant work to do to introduce water pricing policies by the target date of 2010. Europa 2007 [http://ec.europa.eu/environment/water/water-framework/pdf/water\\_note5\\_economics.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/water_note5_economics.pdf). In many countries, the ratio between the average tariffs charged to households and the unit operational cost remains well below one (100 per cent). In other countries, even when this ratio is close to or above the 100 per cent mark, it does not mean that utilities are covering costs, since maintenance and capital costs are not included as part of the unit operational cost figure. If these were to be added, all countries in the region would show cost recovery rates considerably lower than 100 per cent, UNDP [http://europeandcis.undp.org/files/uploads/PPP/13\\_Cost\\_recovery.pdf](http://europeandcis.undp.org/files/uploads/PPP/13_Cost_recovery.pdf). For further information see OECD *Water Supply and Sanitation Sector Reform; Progress on implementing the Almaty Guiding Principles for the Reform of the Urban Water Supply and Sanitation Sector* in EECCA 2005 [www.oecd.org/dataoecd/51/49/14645985.pdf](http://www.oecd.org/dataoecd/51/49/14645985.pdf).
- 1132 The Directive provides some guidance on the means to achieve such an objective, indicating that water policies should ensure "an adequate contribution of the different water use, disaggregated into at least industry, households and agriculture, to the recovery of the costs of water services, based on the economic analysis conducted according to Annex III and taking account of the polluter pays principle". Art 9 of WFD.
- 1133 See 2.3.4.1(c) for an analysis of international best practice on this matter, in terms of LBMP regulation.

case in international best practice.<sup>1134</sup> Guidance could have been provided in terms of financial budgeting, providing templates and directions to facilitate the process. The Directive could also have imposed reporting obligations regarding financial management, asking Member States to report on their budgeting and financial management in this area on an early basis. The Directive could also have provided further guidance and direction in terms of financial mobilisation, suggesting and/or imposing the development and combination of various financial instruments to facilitate the recovery of costs, as described above. In this context, Hildering, Keessen and Van Rijswick<sup>1135</sup> note that:

In the more recent European environmental Directives there is a greater understanding of the economic and social effects of environmental measures that have to be taken. The role of a cost-benefit analysis is increasing in European environmental law, although it is not yet clear how environmental benefits and costs should be taken into account in the comparison with economic costs and benefits. Disproportionate economic and social costs may nevertheless lead to less stringent measures or a longer period is granted to achieve the prescribed goals.

It is important to note that the programmes of measures prescribed either by the WFD or MSFD do not require the development and/or incorporation of financial management regulatory instruments, especially financial planning instruments, which can be regarded as a weakness of the EU regulatory framework in terms of LBMP. Following guidance from international best practice, the programmes of measures should incorporate financial instruments related to the development, implementation and enforcement of the prescribed measures, to ensure the viability and effectiveness of such measures. France has developed various financial management instruments to implement such requirements.<sup>1136</sup> The SDAGE and SAGE incorporate financial instruments which the author regards as more

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1134 The main provision in terms of financial management is Art 22 of the MSFD, which prescribes that "given the priority inherently attached to the establishment of marine strategies, the implementation of this Directive shall be supported by existing Community financial instruments in accordance with applicable rules and conditions. The programmes drawn up by the Member states shall be co-financed by the EU in accordance with existing financial instruments".

1135 Hildering, Keessen and Van Rijswick 2009 *Utrecht Law Review* 94.

1136 See 3.5.2.

comprehensive than the European regulatory approach, as demonstrated in Chapter 3.

#### 4.3.2.3 *Information management and monitoring*

The WFD prescribes that the development of water status should be monitored by Member states on a systematic and comparable basis throughout the Community.<sup>1137</sup> As previously mentioned, the WFD prescribes specific standards in terms of monitoring and information management. One of the most relevant instruments implemented by the WFD in this context is a register of protected areas, which is in accordance with international best practice in this context.<sup>1138</sup> The WFD also requires the establishment of an inventory of emissions, discharges and losses of substances. It also prescribes specific reporting obligations.<sup>1139</sup> It prescribes the development of monitoring programmes for surface water status, groundwater status and protected areas, and provides specific, detailed and comprehensive minimum standards and guidelines in terms of monitoring and information management.<sup>1140</sup> Such provisions are aligned with international best practice.<sup>1141</sup> However, the Directive does not establish an European monitoring network/programme(s); it only provides guidance for Member states, which have the ultimate obligation to undertake monitoring activities. The aim is to ensure a minimum level of uniformity and comparability of monitoring practices. France has developed and implemented various monitoring programmes in this respect.<sup>1142</sup>

As stated in the MSFD, the programmes of measures executed among the marine strategies will be effective only if they are devised on the basis of a sound knowledge of the state and requirements of the marine environment in a particular area.<sup>1143</sup> The MSFD promotes the preparation at national level of an appropriate information

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1137 Art 5 of WFD.

1138 See 2.3.4.2(a and d) for an analysis of international best practice in this matter, in terms of LBMP regulation.

1139 Art 15 of WFD.

1140 See Annex V of the WDF.

1141 See 2.3.4.2(a and d) for an analysis of international best practice in this matter.

1142 Refer to 3.5.1.

1143 Point 23 of the Preamble of the MSFD.

framework, including marine research and monitoring operations, to facilitate informed policymaking, which is very comprehensive and aligned with international best practice.<sup>1144</sup> The MSFD also states that at Community level, support for associated research should be continuously "enshrined in research and development policies".<sup>1145</sup> It requires the establishment and implementation, by 15 July 2014, of a monitoring programme for the ongoing assessment and regular updating of targets.<sup>1146</sup> It also requires that monitoring programmes should be consistent and relevant.<sup>1147</sup> The MSFD provides specific methodological standards and a technical format related to information collection and processing, the format in which data should be presented, and the method of analysis of the data, to ensure compatibility, comparability and consistency between the different data sets derived from different marine regions.<sup>1148</sup> The MSFD prescribes that compatibility with existing programmes developed at regional and international levels should also be ensured with a view to fostering consistency between these programmes and avoiding duplication of effort by making use of those monitoring guidelines that are the most relevant for the marine region or subregion concerned. The information management and monitoring instruments presented above are regarded by the author as comprehensive and aligned with guidance from international best on this specific matter in terms of LBMP regulation.<sup>1149</sup>

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1144 Point 23 of the Preamble of the MSFD and V Annex of the MSFD.

1145 Point 23 of the Preamble of the MSFD and V Annex of the MSFD.

1146 Art 5 of the MSFD.

1147 Appendix 5 of the MSFD.

1148 Appendix 5 of the MSFD.

1149 Information management is regarded as an essential component of the regulatory framework to manage LBMP. The main international practices in this context relate to the types of information to be collected, the format, accessibility and communication of such information and the reporting obligation. International best practice provides valuable guidance on the type of information to be collected, including data/information on resources to be protected (i.e.: the assessment of ecological status); on the quantities of priority substances discharged (inputs); on the authorisations, permissions and environmental impact assessments and environmental audits applicable; on legal and regulatory measures, action plans, programmes and other steps taken for the regulation of LBMP; and on the results achieved in the prevention, control, reduction or elimination as appropriate of any hot spots in the territory. Refer to 2.3.4.2(d) for further information.

On 15 July 2014 France will have established and will start implementing a monitoring programme for the ongoing assessment and regular updating of targets in this context.

#### 4.3.2.4 Effectiveness assessment

The WFD prescribes specific effectiveness assessments of measures and instruments. The first level of assessment has to be conducted by the Commission. Article 18 prescribes that the Commission shall publish reports on the implementation of the Directive. The report must include a review of progress in the implementation of the Directive and a review of the status of surface water and groundwater in the Community, undertaken in coordination with the European Environment Agency.<sup>1150</sup> The Commission also has to publish a report on progress in implementation, based on the summary reports provided by each Member state.<sup>1151</sup> The second level of assessment should be conducted by each Member state, including France. In terms of the WFD, Member states have to provide updates on their river basin management plans.<sup>1152</sup> Such an assessment is considered by the author comprehensive and thorough in terms of its scope, content and frequency. It is mostly aligned with

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1150 It must also include a survey of the river basin management plans, including suggestions for the improvement of future plans; a summary of the response to each of the reports or recommendations to the Commission made by Member states; a summary of any proposals, control measures and strategies; and a summary of the responses to comments made by the European Parliament and the Council on previous implementation reports. Art 18 of the WFD.

1151 For further information on the effectiveness assessments conducted by the Commission to date, see Europa 2009 [http://ec.europa.eu/environment/water/water-framework/transp\\_rep/index\\_en.htm](http://ec.europa.eu/environment/water/water-framework/transp_rep/index_en.htm). According to Art 8, Member states had to establish monitoring programmes which needed to be operational by 22 December 2006. According to Art 15, the report to the Commission was due on 22 March 2007. In setting up the Water Information System for Europe (WISE), it was agreed that this report should be the first which would be submitted electronically only. Member states submit their reports through the REPORTNET facility of the EEA. (<http://rod.eionet.europa.eu/countrydeadlines>).

1152 Such an update shall include a summary of any changes or updates since the publication of the previous version of the river basin management plan, an assessment of the progress made towards the achievement of the environmental objectives, including presentation of the monitoring results for the period of the previous plan in map form, and an explanation for any environmental objectives which have not been reached; a summary of, and an explanation for, any measures foreseen in the earlier version of the river basin management plan which have not been undertaken; and a summary of any additional interim measures. Annex VII of the WFD. In terms of Art 15, Member states shall, within three years of the publication of each river basin management plan or update under Art 13, submit an interim report describing progress in the implementation of the planned programme of measures.

international best practice,<sup>1153</sup> except that it does not seem to address financial and administrative effectiveness and efficiency.<sup>1154</sup> To date, France has conducted most of the requested effectiveness assessments and reporting exercises in terms of the WFD requirements, as outlined above.<sup>1155</sup>

In terms of the provisions of the MSFD, the Commission has various assessment and reporting obligations to evaluate the effectiveness of the overall implementation process and compliance by Member states with the Directive's requirements.<sup>1156</sup> Member states also should provide information regarding the assessment of the environmental status and an estimate of the distance from, and progress towards, good environmental status.<sup>1157</sup> In this context, the MSFD requires reporting on the efficacy of corrective measures to attain the desired changes.<sup>1158</sup> The need to ensure comparability of assessment approaches and methods within and between marine regions and/or subregions is also addressed in the Directive. Finally, the MSFD requires the Commission to publish evaluation reports regarding the implementation of the Directive. The Directive prescribes the content of the report.<sup>1159</sup> Such provisions

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1153 Refer to 2.3.4.2 (b).

1154 International best practice provides guidance on the criteria to evaluate the effectiveness of instruments and measures implemented to regulate LBMP. The effectiveness assessment should inform on environmental effectiveness; economic costs and benefits; equity (ensuring that the costs and benefits of the strategy or programme are being shared fairly); flexibility in administration (ensuring that the strategy or programme can adapt to changes in circumstances); effectiveness in administration (ensuring that the management of the strategy or programme is cost-effective and accountable); timing (the timetable needed to put the strategy or programme in place and to begin producing results); and inter-media effects (ensuring that the achievement of the objectives of the strategy or programme creates a net environmental benefit).

1155 For further information about the state of reporting in France see <http://rod.eionet.europa.eu/countrydeadlines>, <http://www.eea.europa.eu/themes/water>, <http://cdr.eionet.europa.eu/fr/eu> and [http://rod.eionet.europa.eu/deadlines?spatialId=14&order\\_r=NEXT REPORTING\\_DEADLINE](http://rod.eionet.europa.eu/deadlines?spatialId=14&order_r=NEXT_REPORTING_DEADLINE).

1156 Art 20 of the MSFD.

1157 Art 18 and 19 of MSFD.

1158 Annex V of the MSFD.

1159 In terms of Art 20 of the MSFD, an evaluation report should contain a review of progress in the implementation of the Directive; a review of the status of the marine environment in the Community, undertaken in coordination with the European Environment Agency and the relevant regional marine and fisheries organisations and conventions; a survey of the marine strategies, together with suggestions for their improvement; a summary of the information received from Member states pursuant to Art 12 and 16 and of the assessments made by the Commission, in accordance with Art 16, in relation to information received from Member states pursuant to Art 15; a summary of the response to each of the reports submitted to the Commission by Member states pursuant to Art 18; a summary of the responses to comments

are aligned with international best practice, with the exception of the lack of reporting on financial instruments.

#### 4.3.2.5 Other indirect instruments

In terms of enforcement and compliance, the WFD is rather vague, leaving the detailed determination of enforcement measures and instruments to Member states. However, the WFD states that "the penalties thus provided for shall be effective, proportionate and dissuasive".<sup>1160</sup> The MSFD does not provide any guidance on this issue.<sup>1161</sup> Public information and participation are advocated by the WFD under Article 14.<sup>1162</sup> With respect to public participation the MSFD prescribes that Member states shall ensure that all interested parties are given early and effective opportunities to participate in the implementation of the Directive, involving, where possible, existing management bodies or structures, including the Regional Sea Programme,<sup>1163</sup> Scientific Advisory Bodies and Regional Advisory Councils.<sup>1164</sup> The MSFD also highlights the need for public awareness.<sup>1165</sup> However, the provisions of both Directives (the WFD and the MSFD) in terms of public participation can be regarded as limited and vague, as they do not provide guidance on the available instruments and process to facilitate such participation. The Directives also do not provide guidance on the potential different levels of engagement depending on the types of stakeholders involved. They also do not set out a public participation process which will ensure effective and comprehensive consultation of the public, nor do they

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made by the European Parliament and the Council on previous marine strategies; and a summary of the contribution made by other relevant Community policies to the attainment of the objectives of the Directive.

1160 Art 23 of the WFD.

1161 This can be regarded as a regulatory gap (if assessed against guidance from best practice), as the Directives do not prescribe or provide guidance regarding the following compliance and enforcements instruments: inspections, sanctions, PPP, fines, penalties, a compensation regime, the monitoring of programmes and the reporting of contraventions.

1162 Also see Kenyon 2005 *Journal of Environmental Planning and Management* 431-443 and Page and Kaika *The EU water framework directive* 5-16.

1163 Refer to Chapter 2.

1164 The main article in terms of public participation is Art 19 of the MSFD. This Art also prescribes that Member states shall publish, and make available to the public for comment, summaries of the following elements of their marine strategies, or the related updates, as follows: the initial assessment and the determination of good environmental Status; the environmental target, the monitoring programmes; and the programmes of measures.

1165 In annex VI of the MSFD.

prescribe the manner in which public comments should be managed and incorporated in the management and regulatory process. Both Directives fail to address the question of capacity building, which is a regulatory gap, especially if assessed against guidance from international best practice, which recognises capacity building as a pivotal tool for LBMP regulation.<sup>1166</sup> The provisions in terms of pollution emergency/incidents management as prescribed by both Directives<sup>1167</sup> are considered to be limited and generic reporting obligations. Such provisions do not set out reporting obligations (in terms of the information to be communicated to relevant authorities and the range of stakeholders to be informed about the incident). The Directives do not prescribe specific steps/measures to be taken in the case of a pollution incident, to manage the incident and reduce the environmental impacts from such an accident. The provisions of the Directives are also silent on the question of rehabilitation after a pollution accident and on the management of the financial implications of a pollution accident.

#### **4.4 Institutional structure**

The WFD supports the approach that priority should be given to action within the responsibility of Member states through the drawing up of programmes of measures adjusted to regional and local conditions. The WFD sets a legislative framework, leaving to the Member states the flexibility to determine the regulatory modalities of implementation and the choice of the most adequate institutional structure. However, as demonstrated above, the WFD adopts the river basin districts management

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1166 International best practice should ensure efficient and adaptive capacity building regarding specific matters regarded as essential for the regulation of LBMP, e.g. monitoring, ecological assessment, financial management, auditing, waste water treatment. Refer to 2.3.5.2.

1167 The WFD prescribes in its Preamble that there is a need to prevent or reduce the impact of incidents in which water is accidentally polluted. Measures with the aim of doing so should be included in the programme of measures. The WFD makes reference to the need to take all appropriate measures to reduce the risk to aquatic ecosystems from accident (Art 11.3), and also makes reference to the need to take all practicable steps to prevent further deterioration in the status of water after a pollution incident in order not to compromise the achievement of the objectives of the Directive in other bodies of water not affected by those circumstances (Art 4.6). The WFD also prescribes that the Commission prepare strategies against the pollution of water by any pollutants or groups of pollutants, including any pollution which occurs as a result of accidents. The Major Accidents (Seveso) Directive (96/82/EC) is also very relevant in this context. The MSFD is almost silent on this specific issue.

approach as advocated by international best practice,<sup>1168</sup> which will influence the institutional structure. The MSFD is not very specific on this point. It provides only general guidance. It emphasises the importance of determining nationally the most appropriate competent authority, the most efficient and suitable level of action and the repartition of responsibilities and accountabilities.<sup>1169</sup> To facilitate integrated management, the MSFD recommends that Member states identify or establish administrative frameworks.<sup>1170</sup> This general guidance is in principle aligned with international best practice in terms of LBMP,<sup>1171</sup> however they could provide more detailed and practical guidance.

#### **4.5 Regulatory priorities**

The WFD identifies specific substances ("priority substances" and "priority hazardous substances") as described above.<sup>1172</sup> Further activities and substances are also identified, mainly due to the interrelationships between the WFD, the MSFD and other environmental sectoral Directives,<sup>1173</sup> including those dealing with nitrates, agricultural activities, urban waste water, chemical installations, and other substances.<sup>1174</sup> Table 2 of Annex III of the MSFD provides guidance on the main types of pressures and impacts which should be addressed by the different instruments to be implemented, including but not limited to hazardous substances, biological disturbance, the inputs of fertilisers, the introduction of non-indigenous species, construction projects, and discharges. It also makes reference to the priority substances as determined under the WFD. These sectoral Directives also indicate specific areas (substances and activities) of priority in terms of water pollution,

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1168 Refer to 2.3.1 and 2.3.4.1.

1169 Art 7 of the MSFD.

1170 Art 13 of the MSFD.

1171 Please refer to 2.3.5 of this study for further information on best practice in terms of institutional framework.

1172 See 4.3.1.2(d).

1173 See 4.6.

1174 Including activities and substances targeted by the following Directives (but not limited to) REACH, the Pesticides Directive, the Biocidal Products Directive, and the IPPC Directive. Some of these sectoral Directives are analysed in 4.6.

including LBMP regulation.<sup>1175</sup> The determination of regulatory priorities is regarded as an essential element of effective LBMP regulation.<sup>1176</sup> The European legal framework associates timelines and specific regulatory interventions for each regulatory priority, as demonstrated below, which is aligned with international best practice.<sup>1177</sup> The WFD and MSFD also prescribe the need to protect vulnerable/sensitive environments mainly through declaring protected areas. However the geographical determination of such vulnerable environments is left to the Member states.

#### **4.6 Most relevant sectoral European Directives regarding LBMP regulatory priorities**

There are some sectoral Directives which are regarded as important for the regulation of LBMP. This section provides an overview of the main Directives and an analysis of the key regulatory instruments that they establish principally direct instruments which are relevant in terms of LBMP regulation.<sup>1178</sup>

##### **4.6.1 Urban Waste-Water Directive<sup>1179</sup>**

This Directive concerns the collection, treatment and discharge of urban waste water and the treatment and discharge of waste water from certain industrial sectors. The objective of the Directive is to protect the environment from the adverse effects of waste water discharges.<sup>1180</sup> As previously noted, waste water is a prevalent source of LBMP in France.<sup>1181</sup> In terms of this Directive, the phrase "urban waste water" means domestic waste water or the mixture of domestic waste water with industrial waste

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1175 France has identified almost the same priority regulatory areas as those determined by the European Union. See 3.8.

1176 As set out in international best practice. See 2.3.6 for further information.

1177 See 2.3.6 for further information.

1178 As demonstrated in Chapter 3, France is implementing the provisions of such sectoral Directives.

1179 Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment as amended. For further information about this Directive refer to Weale *Environmental Governance in Europe* 360; IWME *EC waste water Directive: meeting the challenges*; Torsten *Implementation of the urban waste water treatment Directive*; and Chave *The EU water framework Directive*.

1180 Preamble of the Urban Waste Water Directive.

1181 Refer to 2.4.2.

water and/or run-off rain water, "domestic waste water" means waste water (from residential settlements and services) which originates predominantly from the human metabolism and from household activities, and "industrial waste water" means any waste water which is discharged from premises used for carrying on any trade or industry, other than domestic waste water and run-off rain water. The Directive has a fairly wide scope (as per the definitions above) as it regulates urban waste water, including domestic and urban waste water, which are generally important sources of LBMP. The reference to run-off rain water is also very important for LBMP.<sup>1182</sup>

The Urban Waste Water Directive prescribes specific obligations for states regarding the establishment of collecting systems for urban waste water.<sup>1183</sup> It prescribes requirements (mainly sources-directed instruments) for waste water treatment before it is discharged into collecting systems.<sup>1184</sup> In terms of the Directive, "appropriate treatment" means the treatment of urban waste water by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives as set by this and other Community Directives.<sup>1185</sup> This regulatory approach combines sources-directed and resource-directed regulatory instruments. The Directive requires the establishment of an authorisation/regulation system (planning regulatory instruments) which should apply to the disposal of waste water

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1182 Refer to Chapter 2.

1183 The Directive prescribes that Member states shall ensure that all agglomerations are provided with collecting systems for urban waste water, at the latest by 31 December 2000 for those with a population equivalent of more than 15000, and at the latest by 31 December 2005 for those with a population equivalent of between 2000 and 15000. For urban waste water discharging into receiving waters which are considered "sensitive areas", Member states shall ensure that collection systems are provided at the latest by 31 December 1998 for agglomerations of more than 10000 population equivalent. In terms of the Directive, where the establishment of a collecting system is not justified (either because it would produce no environmental benefit or because it would involve excessive cost) individual systems or other appropriate systems which achieve the same level of environmental protection shall be used.

1184 In terms of the Directive, Member states shall ensure that urban waste water entering collecting systems shall, before discharge, be subject to secondary treatment or an equivalent treatment. In this context the Directive sets out specific requirements for collective systems and the identification of sensitive areas. In terms of industrial waste water discharge into collecting systems and urban waste water treatment plants, the Directive prescribes that such a discharge should be subject to prior regulations and/or specific authorisations by the competent authority or appropriate body and should have to comply with predetermined specific requirements.

1185 E.g. Bathing Directive, Nitrates Directive and WFD.

from urban waste water treatment plants.<sup>1186</sup> The Directive also sets out general management principles (source-directed instruments) regarding waste water. One of them is that "treated waste water shall be reused whenever appropriate". Another important one is that "disposal routes shall minimise the adverse effects on the environment".<sup>1187</sup> The Directive sets out specific requirements in terms of the collection and treatment of waste water.<sup>1188</sup> Monitoring of the performance of treatment plants and receiving waters has also to be undertaken by Member states in terms of the Directive.<sup>1189</sup> The Directive also regulates, through regulatory instruments based on the sources-directed approach, waste water-related sludge handling, treatment, use and disposal.<sup>1190</sup> Specific provisions also address the control of sewage sludge disposal and re-use, and the treatment of waste water re-use whenever re-use is appropriate.<sup>1191</sup>

This mix of regulatory instruments and the regulatory scope prescribed by this Directive are regarded as comprehensive in terms of LBMP regulation originating from urban waste water. They are generally aligned with the guidance provided by international best practice in terms of LBMP regulation.<sup>1192</sup> The only weakness here could be the lack of comprehensive guidance in terms of financial management instruments, as they are, as indicated by international best practice, essential indirect regulatory instruments to facilitate LBMP regulation. Without effective financial instruments, the effectiveness of the direct regulatory instruments might be affected

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1186 Department of the Environment, Heritage and Local Government 2007 <http://www.environ.ie/en/Environment/Water/WaterQuality/NitratesDirective/> and Europa 2009 [http://ec.europa.eu/environment/water/water-nitrates/index\\_en.html](http://ec.europa.eu/environment/water/water-nitrates/index_en.html).

1187 Art 12 of the Directive.

1188 In terms of the Directive, Art 3, the collection and treatment of waste water should be undertaken in all agglomerations of more than 2000 population equivalents (p.e.); secondary treatment should be undertaken for all discharges from agglomerations of more than 2000 p.e.; and more advanced treatment should be undertaken for agglomerations of more than 10 000 population equivalents in designated sensitive areas and their catchments.

1189 Art 15 of the Directive.

1190 In terms of the Directive, Art 14, sludge arising from waste water treatment shall be re-used whenever appropriate. The disposal of sludge from urban waste water treatment plants is subject to general rules or registration or authorisation. The disposal of sludge to surface waters by dumping from ships, by discharge from pipelines or by other means is phased out. The Directive also prescribes that Member states shall ensure that the total amount of toxic, persistent or bioaccumulable materials in sludge disposed of to surface waters is licensed for disposal and progressively reduced.

1191 Europa 2009 [http://ec.europa.eu/environment/water/water-urbanwaste/index\\_en.html](http://ec.europa.eu/environment/water/water-urbanwaste/index_en.html).

1192 Refer to 2.3.4.1.

or they might not be able to be implemented. However, the French regulatory system seems to address this regulatory gap to some extent at the national level.<sup>1193</sup> In terms of French law, the *Code de l'environnement* and the *Code des collectivités territoriales* incorporate most of the provisions of the Urban Waste Water Directive.<sup>1194</sup>

#### 4.6.2 IPPC Directive<sup>1195</sup>

In 1996 the EU developed in the IPPC Directive a set of common rules to control (from a pollution management perspective) and establish a permit system for industrial installations. In essence, the IPPC Directive strives to minimise pollution from various industrial sources throughout the EU. The purpose of the Directive is to ensure a high level of protection of the environment taken as a whole.<sup>1196</sup> The IPPC Directive is based on several principles including BAT,<sup>1197</sup> flexibility, public participation and the integrated approach,<sup>1198</sup> which is aligned with international best

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1193 See 3.5.2.

1194 See 3.5.2.

1195 The Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control, as amended (IPPC Directive). For further information consult Jans and Vedder *European Environmental Law*; Lange *Implementing EU pollution control* xiv. followings: Kotzé *Integrated Environmental Governance* Section 2.8. "The integrated approach promoted by the IPPC Directive is a more effective mechanism to tackle industrial environmental impacts than more traditional single media approaches". Andrew Farmer, Revising IPPC: incremental change rather than a radical overhaul of EU industrial emission policy. "The IPPC Directive aims to give effect to an integrated approach to pollution prevention and control through, inter alia, procedural integration, organisational integration, and substantive integration" Kotzé 2007 *Comparative and International Law Journal of Southern Africa* 476-474. Also see Kotzé 2007 *SA Public Law* 40-44; Long and Mereu 1999 *European Environmental Law Review* 180-184; and Bobu 2003 *Environmental Engineering and Management Journal* 105-118.

1196 Europa 2009 [http://europa.eu/legislation\\_summaries/environment/wastemanagement/l28045\\_en.htm](http://europa.eu/legislation_summaries/environment/wastemanagement/l28045_en.htm).

1197 "BAT is defined for each industry sector in the BREF (BAT reference document), which is the result of information exchange between Member states and the industry concerned on best available techniques, associated monitoring and developments in them. The BREF represents the tool for IPPC implementation, being guidelines for the EU countries, when setting up ELVs (Emission Limit Values) to be included in the individual operational permits. The BREF should reflect the IPPC principles, which consist of applying BAT to a sector taking account of a number of criteria, including costs, multi-media, the difference between new and existing mills etc. Moreover, cost-benefit assessment should be a prerequisite for the selection of BAT to assure effective allocation of investments. IPPC assumes the environmental principles that the European Union uses as a basis and which have become a fundamental tool of Sustainable Development". See Bobu 2003 *Environmental Engineering and Management Journal* 105-118.

1198 In terms of the Directive, an integrated approach means that "the permits must take into account the whole environmental performance of the plant, covering e.g. emissions to air, water and land, generation of waste, use of raw materials, energy efficiency, noise, prevention

practice in terms of LBMP regulation.<sup>1199</sup> The IPPC Directive contains elements of flexibility by allowing the national licensing authorities, in determining permit conditions, to take into account the technical characteristics of the installation, its geographical location and the local environmental conditions.<sup>1200</sup> The main direct instrument prescribed by the Directive is an authorisation/permit system (combining instruments based on the sources-directed and planning approaches).<sup>1201</sup> The permit conditions include emission limit values, which must be based on BAT, as defined in the IPPC Directive.<sup>1202</sup> To assist the licensing authorities and companies to determine the BAT, the Commission organises an exchange of information between experts from the EU Member states, industry and environmental organisations.<sup>1203</sup> The Directive ensures that the public has a right to participate in the decision-making process. The Directive also prescribes the establishment of the European Pollutant Emission Register (EPER),<sup>1204</sup> which is a recommended indirect regulatory instrument in terms of LBMP regulation in terms of information management.<sup>1205</sup> Such provisions are aligned with international best practice in this context.<sup>1206</sup> The Directive, which is aimed at regulating pollution from industrial installations, has the potential to assist proactive (at the initial authorisation) and continuous (through the various conditions of the authorisations) LBMP regulation from such sources. Moreover, the regulatory

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of accidents, and restoration of the site upon closure". See Bobu 2003 *Environmental Engineering and Management Journal* 105-118.

1199 Refer to 2.3.4.1(c).

1200 Europa 2009 [http://europa.eu/legislation\\_summaries/environment/waste\\_management/l28045\\_en.htm](http://europa.eu/legislation_summaries/environment/waste_management/l28045_en.htm).

1201 In terms of the Directive, operators of industrial installations covered by Annex I are required to obtain an authorisation (environmental permit) from the authorities in the EU countries. About 52.000 installations are covered by the IPPC Directive in the EU.

1202 Europa 2009 [http://europa.eu/legislation\\_summaries/environment/waste\\_management/l28045\\_en.htm](http://europa.eu/legislation_summaries/environment/waste_management/l28045_en.htm).

1203 This work is coordinated by the European IPPC Bureau of the Institute for Prospective Technology Studies at the EU Joint Research Centre. The Commission then publishes the BAT Reference Documents (the so-called BREFs).

1204 In EPER, emission data reported by Member states are made accessible in a public register, which is intended to provide environmental information on major industrial activities. EPER has been replaced by the European Pollutant Release and Transfer Register (E-PRTR) in 2007.

1205 Refer to 2.3.4.2.

1206 In terms of international best practice, regulatory instruments should be customised to the priority areas. The mix of instruments should also be customised to the regulatory objectives and the regulatory priority to be addressed. In this context, this Directive combines direct and indirect regulatory instrument with the ultimate aim of addressing pollution at its sources. Such an approach is regarded as being consolidated and sophisticated in terms of pollution regulation. Refer to 2.3.4.3.

approach that the Directive adopts, mixing regulatory instruments, accords with international best practice.<sup>1207</sup>

France has incorporated the requirements of this Directive in the articles of the *Code de l'environnement* with the provisions related to the water nomenclature and the procedure for the *installations classées*.<sup>1208</sup>

#### **4.6.3 Nitrates Directive**<sup>1209</sup>

The Nitrates Directive aims to manage pollution, especially water pollution, from nitrates generated by agricultural activities. The Directive prescribes various regulatory instruments including the detection of polluted or threatened waters;<sup>1210</sup> the designation of "nitrates vulnerable zones" (NVZs);<sup>1211</sup> and the development of code(s) of good agricultural practices and action programmes within NVZs.<sup>1212</sup> The Directive refers to other measures which could be implemented, including for example nutrient balance, manure storage, and spreading management. In this context, Hildering, Keessen and Van Rijswijk<sup>1213</sup> note that:

It is nevertheless uncertain if the contribution of agriculture to the pollution caused by land-based sources will be sufficiently tackled, since the ECJ is of

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1207 Refer to 2.3 and more specifically 2.3.4.3.

1208 See 3.6.2.

1209 The Council Directive (91/676/EEC) of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources. For further information about this Directive consult DEFRA *Nitrates Directive 2001*; Jack *Agriculture and EU Environmental Law* 171; Brouwer, Heinz and Zabel 2003 *Environment and Policy* Chapter 5; OECD *Instrument mixes for environmental policy* Chapter 3; Heinz 2008 *Hydrol Earth System Science* 715-726. Also see Goodchild 1998 *Environmental Pollution* 737-740.

1210 It takes into consideration human health protection; living resources and aquatic ecosystems protection, and eutrophication prevention.

1211 It includes areas of agricultural land making a significant contribution to nitrates pollution at watershed level.

1212 The main types of actions that the Nitrates Directive promotes (in annex II - codes of good practice, and Annex III - actions programmes) simultaneously concern crop rotations, and soil winter cover in order to limit leaching during the wet seasons; the use of fertilisers and manure, with a balance between crop needs, nitrates inputs and soil supply, frequent manure and soil analysis, mandatory fertilisation plans and general limitations per crop for both mineral and organic nitrates fertilisation; appropriate nitrates spreading calendars and sufficient manure storage, for availability only when the crop needs nutrients, and good spreading practices; the "buffer" effect of non-fertilised grass strips and hedges along watercourses and ditches, good management and restriction of cultivation on steeply sloping soils, and of irrigation.

1213 Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 93.

the opinion that the system for protecting waters from pollution from livestock effluent at the Community level is purely based on Directive 91/676 (Nitrates Directive) and not on other water Directives like the Ground Water Directive (Directive 80/68/EEC). This special position for agriculture may lead to an unbalanced approach and a lack of a fair distribution of measures that should be taken by all stakeholders and polluters.

## 4.7 Conclusion

### 4.7.1 *Law principles*

From the above analysis the author believes that the European environmental legal framework for LBMP regulation incorporates most of the relevant law principles contained in international best practice in this field, including:<sup>1214</sup>

- General environmental law principles, for example the precautionary principle, integrated management, the polluter pays principle, sustainable development, adaptive management, the participatory/participative approach, collaborative management, equity and flexibility, and transparency;
- Environmental law principles related to sustainable resources management, for example the equitable and sustainable use of water resources, integrated river basin/watershed management, integrated pollution prevention and control, integrated ecosystem-based approach, and integrated territorial approach; and
- Specific environmental law principles related to coastal and marine management, especially the principle of integrated coastal area/zone management.

### 4.7.2 *Regulatory scope*

In terms of the geographical regulatory framework, the fact that the European legal framework pertaining to water management (mainly the WFD) includes "coastal

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<sup>1214</sup> Refer to 2.3 of this report for further information on international best practice regarding guiding principles in terms of LBMP regulation.

waters" in its regulatory scope is very relevant for LBMP regulation as it ensures the integrated regulation of water pollution, taking into consideration the interrelationship between fresh water and coastal waters. Such a regulatory approach is fundamental for the effective regulation of LBMP.<sup>1215</sup> The existence of a dedicated Directive to deal with the marine environment is regarded as a legal affirmation of the EU's willingness to efficiently address and regulate marine pollution, including LBMP. In terms of the regulatory scope, it is important to note that the European environmental legal framework identifies two legal concepts/ definitions: "coastal waters"<sup>1216</sup> and "marine waters",<sup>1217</sup> a fact which has legal implications in terms of LBMP regulation. Coastal waters are included in the scope of both Directives. However marine waters (beyond coastal waters) are in principle not included in the WFD.<sup>1218</sup> This "exclusion" can be explained by the respective environmental characteristics and "ecological vulnerability"<sup>1219</sup> of coastal waters and marine waters.<sup>1220</sup> It can also be explained by the fact that there is a more direct and predominant interdependence between fresh water and coastal waters than between fresh water and marine waters, a fact which legitimates the inclusion of coastal waters in the WFD.<sup>1221</sup> However, it is still not obvious that this approach (limiting the regulatory scope of the WFD to coastal waters and excluding marine waters) is the most appropriate, especially in terms of

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1215 Refer to 2.3.2 for further information on international best practice in terms of the most adequate regulatory scope of the regulation of LBMP. The regulatory objectives/purposes should include pollution management, environmental protection, human health protection and the management of marine and coastal natural resources uses.

1216 In terms of WFD, coastal water means surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.

1217 In terms of the MSFD, marine waters include waters, the seabed and subsoil on the seaward side of the baseline from which the extent of territorial waters is measured extending to the outmost reach of the area where a Member state has and/or exercises jurisdictional rights, in accordance with the UNCLOS, with the exception of waters adjacent to the countries and territories referred to in Annex II to the Treaty and the French Overseas Departments and Collectivities and coastal waters.

1218 For the exception of territorial waters in some cases, refer to 4.2.

1219 In particular the dilution effects for marine waters and the accumulation effects for coastal waters. Refer to 4.2.

1220 Refer to 2.3.2 for further information about some of the main different main "zone", including the ecological "sensitivity" difference between "sea-shore", coastal and marine waters and high-seas.

1221 The coastal environment is more dependent on the quality and quantity of freshwater than marine waters, especially in estuaries. Refer to Chapter 2.

LBMP regulation.<sup>1222</sup> Further scientific inputs are required to decide this issue, and they are beyond the scope of this research project. However, from a regulatory perspective and in accordance with international best practice,<sup>1223</sup> it is the author's opinion that WFD should have included marine waters in its regulatory scope in order to be able to regulate LBMP coherently. The gap is addressed to some extent (only some marine waters are included and for specific aspects, it is not a broad inclusion) by the MSFD, which complements the WFD. Moreover, it might have been more efficient, ensuring integrated and ecosystem based management of water resources, to consolidate the WFD and MSFD into a single framework Directive dealing generally with water resources, including coastal and marine waters. Such a recommendation is provided without analysing in detail the full range of practical implications of such a regulatory scope, therefore further research will have to be undertaken to ascertain this preliminary recommendation, including strong scientific guidance.<sup>1224</sup> The fact that the high seas are excluded from the regulatory scope can also be regarded as a weakness in terms of integrated regulation of LBMP and marine pollution generally.

Moreover, the fact that the provisions of the MSFD apply only to Member states with coastal waters is regarded as a limiting factor in terms of regulatory effectiveness. Considering that the sources of LBMP might be located in land-locked countries, such countries should be included in the regulatory scope. The provisions of the WFD assist in the regulation of water pollution from such land-locked countries, but to a limited extent. Land-locked Member states should have to implement certain

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1222 International best practice suggests that the marine and coastal environment to be protected in terms of LBMP regulation should include as a minimum the following components: the seashore; internal waters; relevant coastal watershed/catchments/river basins including watercourses (up to the freshwater limit); territorial seas; the Exclusive Economic Zone (EEZ); estuaries; coastal lagoons; coastal wetlands; the sea bed and sub-soil of the abovementioned waters; the environment (such as the living resources and ecosystems) associated with these marine and coastal areas and, if possible, the high seas.

1223 Refer to 2.3.2 of this study. Hildering, Keessen and Van Rijswijk note that "marine pollution is also influenced by activities in states that are not situated near the sea or ocean. The fact that a river basin approach is often transnational means that if co-operation does not work in practice, pollution coming from abroad must be tackled by states situated at the end of the river basin. The WFD does not have a proper mechanism for dealing with transboundary pollution". Hildering, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 81.

1224 Due to the limited scope of this thesis, it is not possible to conduct such research here.

regulatory instruments in terms of LBMP. It is also suggested that they should have financial obligations to assist coastal Member states in the implementation of their obligations in terms of the MSFD and WFD. Such financial contributions would be especially relevant in terms of indirect measures like monitoring, public participation and ecological assessment. Moreover, their participation is necessary for the effective development and implementation of the "marine strategies" and "programmes of action" prescribed by the MSFD.<sup>1225</sup>

It would also be more effective in terms of LBMP regulation if the indirect regulatory instruments (especially ecological assessment status, information management, monitoring and effectiveness assessment) prescribed by the WFD and MSFD were linked and combined in an integrated way to facilitate the cohesive management of fresh and marine waters.

In terms of the material regulatory scope, the European environmental legal framework is comprehensive, as it generally addresses land-based point and diffuse sources of pollution (taking place in river basins and marine regions) and it also provides specific and dedicated legal provisions for specific "priority" sectoral sources and/or pollutants in the context of LBMP (e.g. nitrates pollution from agricultural activities and urban waste water).<sup>1226</sup>

#### **4.7.3 Regulatory objectives**

The regulatory objectives prescribed by the WFD and MSFD are regarded by the author, in terms of the analysis conducted in this Chapter, as comprehensive in terms of LBMP regulation as they address environmental protection, pollution management, human health protection and management of uses. However, it has to be noted that

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1225 As confirmed by Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review* 99, "Another limitation is that the instruments first and foremost address states, and often even only watercourse states or coastal states, while it is increasingly acknowledged nowadays that many actors need to be involved. Furthermore, the complexity of water systems does not limit itself to international watercourses and also the effects on the marine environment are not only in the interest of the coastal states, but are a concern to the whole international community".

1226 International best practice suggests that the land-based sources of marine pollution which should be regulated should include all direct and indirect sources on the territory, including sources or potential sources far inland.

the European regulatory framework does not provide detailed and comprehensive guidance in terms of use determination and management, which could affect the efficiency of LBMP regulation. It is suggested that the WFD and the MSFD, through an Annexure or guidance documents, should provide further guidance in terms of coastal and marine environment use determination and management.

#### 4.7.4 Regulatory instruments

Table 8 provides an overview of some of the direct and indirect regulatory instruments implemented in the European legal framework, which are relevant for the regulation of LBMP.

Measure	Directives	Bathing Water	Drinking Water	Nitrates	UWWT	Water Framework Directive
Quality of the environment		✓	✓			✓
Health and safety risks		✓		✓	✓	✓
Availability of water supply		✓				✓
Management of flood		✓		✓		✓
EU legislation					✓	
Involvement of the public		✓	✓			✓
Public participation		✓				✓
Enforcement		✓	✓	✓	✓	✓

**Table 8.** Main regulatory instruments implemented by EU environmental law, which are relevant for LBMP regulation.<sup>1227</sup>

The range of direct and indirect regulatory instruments amounts to a sophisticated regulatory regime in terms of water pollution and marine and coastal management, including LBMP regulation. The regulatory instruments based on the resource-directed approach are regarded as sophisticated and sufficiently detailed to facilitate uniform implementation by Member states, and they provide relevant guidelines and standards. The instruments and measures adopted in the context of the source-directed approach are regarded as suitable in terms of LBMP regulation, especially the combined approach prescribed by the WFD. The planning instruments provided by the European environmental legal framework are also regarded as pertinent and

<sup>1227</sup> Europa 2009 [http://ec.europa.eu/environment/water/water-framework/pdf/waternote9/other\\_waterlegislation.pdf](http://ec.europa.eu/environment/water/water-framework/pdf/waternote9/other_waterlegislation.pdf).

adequate. The direct regulatory instruments provided by the European legal framework in terms of LBMP are mostly aligned with international best practice in LBMP regulation.<sup>1228</sup> In connection with the MSFD, Hildering, Keessen and Van Rijswick<sup>1229</sup> argue that:

The chosen instruments – coordinated marine strategies for marine regions, coordinated programmes of measures, environmental targets instead of environmental quality standards and a clear procedure for dialogue when a Member state cannot achieve the MSFD goal – make it clear that the MSFD is a step forward towards shared responsibilities between the European institutions and the Member states when protecting ecosystems and natural resources. That is – especially when it concerns marine regions and transnational river basins – a more pragmatic and perhaps more realistic attitude. Nevertheless, the new approach towards multi-level and multi-actor governance and a strong focus on flexibility and proceduralisation carries a great risk that at the end of the day environmental goals will not be achieved or will only be achieved much later or that the burden of measures and investments will not be fairly shared.

It is also noted that the European regulatory framework is rather vague and indeterminate regarding the management of the use of the coastal and marine environments. This is regarded as a weakness in this regime, especially when assessed against best practice in this context.<sup>1230</sup>

The indirect instruments are regarded as adequate for LBMP regulation, especially in terms of ecological assessment, monitoring and information management, even although they do not provide for the establishment of an European monitoring programme. However, it is the opinion of the author that the guidance offered in terms of financial management instruments is rather limited. Public participation is comprehensively addressed. However, not much practical guidance is provided in terms of enforcement and compliance. Such matters are left to the Member states to regulate. It is recommended that the EU should provide further guidance regarding the selection, development and implementation of financial management instruments related to LBMP and more generally water resources management. This could be achieved through the development of practical guideline documents. There is no

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1228 Refer to 2.3.4.3 for further information.

1229 Hildering, Keessen and Van Rijswick 2009 *Utrecht Law Review* 94.

1230 Refer to 2.3.4.1(e).

reference to capacity building, which might be regarded as a regulatory gap especially in relation to the situation of European states engaged in "economies in transition" or other states with limited capacity. Such states might require specific capacity building, which could be achieved through effective co-operation between states.

#### **4.7.5 Overall assessment of the European regulatory framework**

It is the opinion of the author that the overall European environmental regulatory framework is rational and coherent.<sup>1231</sup> The framework aims to ensure an effective legal interrelationship between the different Directives, to avoid legal gaps and overlaps. It is reactive, flexible and adaptative, qualities which are appropriate for sources-directed measures and instruments regulating LBMP. However, one the main difficulties and challenges in terms of the European environmental legal framework relates to the efficient, practical and timely implementation of the obligations by Member states.<sup>1232</sup> Compliance and enforcement measures by Member states will be critical in terms of the effectiveness of the European legal regime to regulate and manage LBMP.

Some lessons can be drawn from this critical assessment of the European environmental legal framework for LBMP regulation. A sound knowledge of the state of the marine environment and associated river basin is a pre-requisite to implement

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1231 An important European principle in this context is the integration principle. This principle enhances the coherence of the Community's legal order. "It is reflected in the WFD, as it aims at an integrated and combined approach to protect fresh water and coastal waters choosing river basin management as an approach and stating explicitly that measures also have to be taken in other policy areas to meet its objectives (Preamble 16 WFD). With the entry into force of the MSFD a next link is made between the protection regimes under international and European water law (Preamble 7, 17, 18 and 19 MSFD) and between the protection regimes for river basins and marine regions, on the one hand, and those for other policy fields like fisheries, agriculture and product policy (Preamble 9 MSFD) on the other (see below). It must be noted, however, that although external integration is of the utmost importance, the practical implementation of this obligation in other EC policy fields is still poor". Hildering, Keessen and Van Rijswick 2009 *Utrecht Law Review* 89.

1232 "These approaches have to be implemented in order to be successful. Obstacles to mutually reinforcing water management regimes can especially be expected in the application of the instruments and provisions that often require various interests to be balanced, for example, in applying the principle of equitable and reasonable utilisation of freshwater resources. Moreover, it remains to be seen in what cases 'all necessary measures' are considered to have been taken". Hildering, Keessen and Van Rijswick 2009 *Utrecht Law Review* 99.

an efficient and effective management and regulatory system, especially in the context of LBMP, reflecting the importance of regular ecological status assessment and monitoring. In this context, a preliminary review of the different impacts/pressures should guide the scope, contents and objectives of regulatory interventions. The European framework also demonstrates that the determination of a good environmental status is essential and should be based on specific characteristics, adopting an ecosystem approach, and should be measurable.

Clearly defined environmental targets/standards, indicators and timeframes are also essential instruments. It also recognises that there is a need for a clear and coherent set of goals/objectives, building on existing policies. Such goals must be specific, measurable, sectoral, must have associated timelines, and must address all priority threats. The achievement of these objectives must be based on economic, environmental and social factors. Integrated pollution control is also recognised as an essential tool in the regulation of LBMP.

The European regulatory framework demonstrates the need for integrated and combined instruments.<sup>1233</sup> It also demonstrates that tailor-made regulatory intervention, like the design of programmes of measures, must take into consideration the social, environmental and economic requirements and characteristics of the waters concerned. For each specific problem or coastal/marine environment (i.e. a sensitive environment), there is a need to assess the most adequate regulatory instrument or mix of instruments required to address it. Each regulatory instrument should have a defined aim and scope and an associated timeframe, if applicable.

As noted by Hildering, Keessen and Van Rijswick<sup>1234</sup> in relation to the MSFD, the integrated ecosystem approach will lead "to a better protection of the marine environment, since it considers the whole ecosystem in relation to neighbouring systems and in relation to all threats and possible measures to avoid negative impacts on the ecosystem".

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1233 Hildering, Keessen and Van Rijswick 2009 *Utrecht Law Review* 81.

1234 Hildering, Keessen and Van Rijswick 2009 *Utrecht Law Review* 95.

In terms of the European regulatory framework in relation to LBMP regulation, Hildering, Keessen and Van Rijswick<sup>1235</sup> argue that "emission standards do not offer a solution for all pollution from land-based diffuse sources, especially not from diffuse sources of pollution like agricultural pollution". They also argue that "an extensive use of exemptions leads to the undesirable situation that other states in the same marine region will have greater difficulties in fulfilling their goals and ambitions, with the final result that the marine environment will lack proper protection and that the goals will not be met".<sup>1236</sup> In this context they recommend that it might be preferable to develop and implement a "system which would make the parties involved jointly responsible for achieving the goals laid down in the new European water Directive".<sup>1237</sup>

The European legal regime also emphasises the importance of selecting the most suitable competent authority, level of action and the repartition of responsibilities and accountabilities. Table 9 provides an overview of the European regulatory framework in terms of LBMP.

<b>OVERVIEW OF THE EUROPEAN REGULATORY FRAMEWORK IN THE CONTEXT OF LBMP</b>	
TABLE 9 OVERVIEW OF THE EUROPEAN REGULATORY FRAMEWORK IN THE CONTEXT OF LBMP	<p>Two Directives have been identified as the most relevant ones for the regulation of LBMP:</p> <ul style="list-style-type: none"> <li>• <i>Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive or WFD);</i></li> <li>• <i>Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for Community action in the field of marine environmental policy (Marine Strategy Framework Directive or MSFD).</i></li> </ul>

1235 Hildering, Keessen and Van Rijswick 2009 *Utrecht Law Review* 93. They also indicate that "the image of European water legislation is that of a funnel full of measures leading into the next funnel of measures and then into another funnel of such measures and so on. Each funnel takes care of a part of the necessary measures to protect the water system: measures to regulate activities in the field of agriculture, industry, waste water treatment and direct and indirect discharges within the river basin district towards the seas and oceans".

1236 Hildering, Keessen and Van Rijswick 2009 *Utrecht Law Review* 93.

1237 This will be difficult to realise as far as non-Member states are concerned, but within the European Union it is worth thinking about regional responsibility within river basins.

Sectoral Directives have also been identified as relevant in the context of LBMP regulation, including the following main ones:

- *The Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, as amended (Urban Waste-Water Directive);*
- *The Council Directive (91/676/EEC) of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (Nitrates Directive); and*
- *The Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control, as amended (IPPC Directive).*

Others Directives are relevant for the regulation of LBMP, but to a lesser extent:

- *The Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water (Bathing Water Directive), as amended;*
- *The Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (Birds Directive), as amended,*
- *The Council Directive 80/778/EEC of 15 July 1980 relating to the quality of water intended for human consumption (Drinking Water Directive) as amended;*
- *The Council Directive 96/82/EC of 9 December 1996 relating to the control of major-accident hazards (Seveso Directive), as amended;*
- *The Council Directive of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment, (EIA Directive), as amended;*
- *The Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture (the Sewage Sludge Directive);*
- *The Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive);*
- *The Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market (Biocidal Products Directive);*
- *The Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides (Pesticides Directive); and*
- *Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).*

	<ul style="list-style-type: none"> <li>• General environmental law principles: the precautionary principle, integrated management, the polluter pays principle, sustainable development, adaptive management, the participatory/participative approach, collaborative management, equity and flexibility, and transparency.</li> <li>• Environmental law principles related to sustainable resources management: the equitable and sustainable use of water resources, integrated river basin/watershed management, integrated pollution prevention and control, the integrated ecosystem-based approach, and the integrated territorial approach.</li> <li>• Specific environment law principles related to coastal and marine management: integrated coastal area/zone management.</li> </ul>	
	<table border="1"> <tr> <td data-bbox="347 689 821 1131"> <p><b>What is regulated?</b></p> <p>Direct and indirect sources, point and diffuse sources, activities, substances, emissions/discharges, installations and other factors which might pollute or contribute to the pollution and/or degradation of the coastal and marine environment.</p> </td> <td data-bbox="821 689 1353 1131"> <p><b>Where does the regulatory regime apply?</b></p> <ul style="list-style-type: none"> <li>• Marine Side (protection): inland, transitional and coastal waters (including in some cases the territorial sea) in terms of the WFD. All marine waters under national jurisdiction in terms of the MSFD. The high seas are excluded from the regulatory scope.</li> <li>• Land side (control of sources): water basins districts under the jurisdiction of a Member state for the WFD and mostly only coastal Member states for the MSFD.</li> </ul> </td> </tr> </table>	<p><b>What is regulated?</b></p> <p>Direct and indirect sources, point and diffuse sources, activities, substances, emissions/discharges, installations and other factors which might pollute or contribute to the pollution and/or degradation of the coastal and marine environment.</p>
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- Protection of inland surface waters, transitional waters, coastal waters and groundwater.
- Long-term sustainable water management based on a high level of protection of the aquatic environment.
- Protect and restore clean water across Europe and ensure its long-term, sustainable use.
- General objective "to be achieved in all surface and groundwater bodies": a good status by 2015.
- Protection of territorial and marine waters, achieving concentrations in the marine environment near background values for naturally occurring substances and close to zero for man-made synthetic substances.
- Enhanced protection and improvement of the aquatic environment.
- Management of water use to ensure sustainable use of the resource.
- The marine environment is a precious heritage that must be protected, preserved and, where practicable, restored with the ultimate aim of maintaining biodiversity and providing diverse and dynamic oceans and seas which are clean, healthy and productive.
- The sustainable use of the seas and the conservation of marine ecosystems.
- An ecosystem-based approach to the management of human activities.
- The achievement of good environmental status and ensuring that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while enabling the sustainable use of marine goods and services by present and future generations.

- Environmental objectives and environmental quality standards (WFD): A general requirement for "good ecological status" and "good water chemical status".
- Environmental quality standards of priority substances (WSF): two types of environmental quality standards are set for priority substances: "annual average concentrations" and "maximum allowable concentrations".
- Good environmental status, environmental targets and indicators (MSFD).

	<ul style="list-style-type: none"> <li>• Instruments based on the sources-directed approach included in the "programme of measures" (WFD and MSFD), including basic and supplementary measures.</li> <li>• The European Parliament's and the Council's specific measures against the pollution of water by individual pollutants or groups of pollutants presenting a significant risk to or via the aquatic environment.</li> <li>• The "combined approach for point and diffuse sources".</li> <li>• The determination of priority substances and priority hazardous substances.</li> <li>• The phasing out or reduction of specific pollutants according to a risk-based approach.</li> <li>• Various sectoral standards and guidelines related for instance to: setting chemical quality standards.</li> <li>• The development of code(s) of good agricultural practices and action programs.</li> <li>• The determination of emissions limit values (IPPC and WFD Directives).</li> <li>• BAT and BEP.</li> <li>• The determination of standards and requirements (especially in the Urban Waste Water and Nitrates Directive).</li> <li>• General management principles (especially in terms of urban waste water management).</li> <li>• Code of conduct (which could also be categorised as an integrated regulatory instrument).</li> </ul>
	<ul style="list-style-type: none"> <li>• Water use designation and management: no specific instruments.</li> <li>• River Basin Management and associated management plans.</li> <li>• Marine eco region and marine strategies.</li> <li>• EIA.</li> <li>• Authorisation/permit system: IPPC and Urban Waste Water Directives.</li> <li>• Protected areas.</li> <li>• The designation of "nitrates vulnerable zones" and other sensitive areas.</li> </ul>
	<ul style="list-style-type: none"> <li>• Programme of Measures.</li> </ul>

<p style="text-align: center;"><b>INDIRECT</b></p> <p style="text-align: center;">- Instruments in support of direct instruments and measures, facilitating the control and management of LBMP</p>	<ul style="list-style-type: none"> <li>• <b>Ecological assessment:</b> analysis of the characteristics of the river basins and marine areas, including an assessment of the impacts of human activity and an economic analysis of water use; marine research and monitoring operations.</li> <li>• <b>Monitoring, data management, reporting and notification:</b> monitoring programmes for surface water status, groundwater status, marine areas and protected areas, and specific standards in terms of monitoring and information management. Also the European Pollutant Emission Register (EPER), the marine protected areas register And the register of substances and products authorisations..</li> <li>• <b>Effectiveness assessment</b> by the EU Community and by each Member state.</li> <li>• <b>Public participation.</b></li> <li>• <b>Financial management:</b> promoting the "recovery of the costs of water services" and the polluter pays principle.</li> </ul>
	<ul style="list-style-type: none"> <li>• Priority should be given to action within the responsibility of Member states.</li> <li>• Need for flexibility to determine the regulatory modalities of implementation.</li> <li>• Need to choose the most adequate institutional structure.</li> <li>• Promote the river basin districts management approach.</li> <li>• Important to determine nationally the most appropriate competent authority, the most efficient and suitable level of action, and the repartition of responsibilities and accountabilities.</li> <li>• To facilitate integrated management, the MSFD recommends that Member states identify or establish administrative frameworks.</li> </ul>
<p style="text-align: center;"><b>SUBSTANCES</b></p>	<p>Hazardous substances, biological disturbance, fertilisers, nitrates, the introduction of non-indigenous species.</p>
<p style="text-align: center;"><b>ACTIVITIES</b></p>	<p>Agricultural activities, industrial installations, discharges, urban waste-water management-related activities.</p>
<p style="text-align: center;"><b>AREAS</b></p>	<p>"Nitrates vulnerable zones", protected and sensitive areas.</p>

Table 9. Overview of the EU regulatory framework relevant to LBMP regulation.