Marine Aggregate Extraction Regulation in EU Member States

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This paper provides a brief review of regulations and procedures relevant to the authorization of marine aggregate (MA) operations in eight EU Member States. MA operations are affected by a multi-level legislative/regulatory regime, consisting of international conventions (e.g. the UNCLOS 1982, OSPAR, Helsinki, ICES, Barcelona and Espoo Conventions), secondary EC legislation (e.g. the Environmental Impact Assessment Directives (85/337/EEC and 97/11 EC) and the Freedom of Access to Environmental Information Directive (2003/4/EC)) and national legislation or regulation. It appears that rules and procedures relevant to MA extraction vary considerably between the considered Member States. In general, relevant information is not easily available in accurate, comprehensive and up-to-date form. As a result, it is difficult to assess whether and to which extent national practice in relation to MA extraction authorization is in substantive compliance with the requirements of existing international and European rules and regulations aimed at sustainable development and protection of the marine and coastal environment.

ABSTRACT

This paper provides a brief review of regulations and procedures relevant to the authorization of marine aggregate (MA) operations in eight EU Member States. MA operations are affected by a multi-level legislative/regulatory regime, consisting of international conventions (e.g. the UNCLOS 1982, OSPAR, Helsinki, ICES, Barcelona and Espoo Conventions), secondary EC legislation (e.g. the Environmental Impact Assessment Directives (85/337/EEC and 97/11 EC) and the Freedom of Access to Environmental Information Directive (2003/4/EC)) and national legislation or regulation. It appears that rules and procedures relevant to MA extraction vary considerably between the considered Member States. In general, relevant information is not easily available in accurate, comprehensive and up-to-date form. As a result, it is difficult to assess whether and to which extent national practice in relation to MA extraction authorization is in substantive compliance with the requirements of existing international and European rules and regulations aimed at sustainable development and protection of the marine and coastal environment.

ADDITIONAL INDEX WORDS: Marine aggregates, aggregate mining licensing, environmental law and regulation, marine sand and gravel, environmental impact assessment.

INTRODUCTION

In the past three decades, marine aggregates (MA) have emerged as an important mineral resource in a number of European Member States, particularly in the Netherlands, the UK2 and Denmark (Velegrakis et al., this volume) and, to a lesser extent, in Belgium, Germany, France and Poland (ICES 2001; 2003a; 2004; 2005; 2006, 2007). MA exploitation/extraction has become an increasingly important activity due to (a) stricter mining regulations (Jewell, 1996; Pring, 1999) and growing social resistance against land aggregate extraction (Peha et al., 2004) and (b) increasing general demand (Birkeland and Wijman, 2005; and Mearns et al., 1996).

In the near future, extraction is bound to increase from the current levels in order to provide the marine aggregates needed for the realisation of large-scale infrastructure projects planned for the European coastal areas4. At the same time, since Eu...
Regional coasts are under increasing coastal erosion (EUROSION, 2003; 2004a and 2004b), coastal protection schemes (e.g. DEAN, 2002) requiring large quantities of marine aggregates\(^6\) are necessary in order to facilitate and manage coastal zone development (HUMPHREYS et al., 1996; PHUA et al., 2004; and VAN DALPSEN et al., 2004). New resources must be found and, at the same time, diverse environmental and economic concerns must be addressed.

Mineral resource exploitation affects all environmental media. Pinto (1999) states that “mining inherently implies environmental degradation...[it] is not an environmentally-friendly activity”. MA extraction, in particular, may have significant effects on the coastal water quality, the seabed and the associated flora and fauna and influence significantly the coastal zone morphodynamics (BIRKLUND and WILSBAN, 2005; BRAMPTON, EVANS, and VELEBRAND, 1998; DE GROOT, 1996; ELLIS and MACDONALD, 1998; GUBBAY, 2003; and KENNY and REES, 1994: 1996); it must be noted that, as the operating costs of dredging are generally high and increase with the distance from the landing ports and the depth of the deposits, marine aggregate extraction takes place at water depths less than 45-50 m.\(^7\) There are also potential conflicts of interest between the MA industry and other shallow marine water users, such as the fishing, shipping and the oil industries, due to competing demands for space, access and usage (BARRY, ELENA, and VAN DER MOLLEN, 2003; BMAPA, 1995; and NETHERLANDS MINISTRY OF HOUSING, 2001).

Gradual depletion of the easily accessible resources, coastal ecosystem conservation and diverse stakeholder interests require that resource sustainability, environmental prudence and careful management should be crucial components of the practice and regulation of MA operations; moreover, they demand the development of coherent policies/regulations on the licensing and practice of offshore mining operations. However, it is not clear whether the current regulatory framework governing MA operations in EU Member States adequately reflects the above considerations, as no comprehensive review of MA regulation appears to have been carried out so far.

The present contribution attempts to provide an overview of the regulation of MA operations\(^7\) in a number of European Member States (Figure 1) to help identify existing discrepancies and weaknesses and provide some necessary background for potential areas for improvement. The specific objectives of this contribution are to:

1. Describe the current regulatory regimes governing MA extraction/exploitation activity in several EU Member States and their relation to the relevant international and supra-national environmental legislation; and

2. Provide some tentative comment on whether the identified existing regulatory regime succeeds in effectively addressing concerns regarding the environmental impact of marine aggregate extraction.

### THE RELEVANT REGULATORY REGIME

Marine resource exploitation is commonly regulated according to two different regimes, both of which are designed to prevent overexploitation and ensure nature conservation. The first of these regimes, which is the subject matter of this contribution, governs mainly the activity-based management. The second regime, which is beyond the scope of this contribution, applies to marine areas, which enjoy special protection status (e.g. Marine Protected Areas, MPAs) and are subject to particular protection regulations\(^8\).

Activity-based management measures are predominantly sector-based regulations which, in the case of the MA industry, are dealing with the different stages of exploitation i.e.

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North Sea. Moreover, huge quantities of marine aggregates will be needed for the construction of the new London Olympic facilities.

\(^{6}\) For example the future need of sand for beach nourishment in the Netherlands is predicted to be between 9.8 and 14 x 10\(^6\) m\(^3\) per year (Van Dalp sen et al., 2004) and in Germany at least 1.5 x 10\(^6\) m\(^3\) per year in Schleswig-Holstein and Mecklenburg-Western Pomerania (http://www.dredging-in-germany.de).


resource exploration (prospecting) and its licensing and mining operations and their licensing9. The legal and institutional framework which controls these operations will be considered with regard to: (i) seabed ownership/private property rights and their transfer to another public or private entity for the purpose of MA extraction and the relevant administrative regulation (e.g. prospecting regulation, data management and exploitation licensing); and (ii) the environmental impact assessment (EIA) of MA operations, so as to help consider how effective the existing regulations are in terms of environmental protection/conservation (e.g. environmental impact assessment of MA extraction, operation monitoring, liability and sanctions).

As the relevant regulation consists of several layers or levels (i.e. international, European and national), these need to be taken into account and presented in context. The international dimension will be presented by way of an overview of the most relevant Conventions, in particular the UN Convention on the Law of the Sea (UNCLOS) 1982, the OSPAR Convention 1992, the HELSINKI Convention 1992, the Barcelona Convention 1995, the ICES Convention 1964 and the ESPOO Convention 1991 together with its 2003 SEA Protocol. The European dimension will be considered by reviewing relevant EC Directives, in particular the Environmental Impact Assessment Directives (85/337/EEC and 97/11 EC), the Strategic Environmental Assessment Directive (2001/42/EC), the Freedom of Access to Environmental Information Directive (2003/4/EC) and the Habitats (92/43/EEC) and Wild Birds (79/409/EEC) Directives. Finally, the national dimension will be presented by considering the national legislation/regulation in eight EU Member States, namely the United Kingdom, Germany, Spain, France, the Netherlands, Poland, Belgium and Greece. Information available as of the end of November 2007 has been taken into account.

INTERNATIONAL CONVENTIONS

Marine environmental policy development takes place within a framework of over 70 international and regional conventions and agreements; however, only a few of these directly affect MA operations.

The United Nation Convention on the Law of the Sea

1982 (UNCLOS)

The 1982 UNCLOS10, which has been adopted by all of the EU Member States under consideration here11, provides for the delineation of maritime zones12 and prescribes a detailed overarching international legal framework of rights and obligations in respect of usage, development and preservation for these zones, including resource mining. According to the 1982 UNCLOS, the starting point for the delineation of the different maritime zones is the baseline13. Coastal States are entitled to claim territorial seas14 up to 12 nautical miles wide (starting from the baseline) and, in relation to these, enjoy full sovereignty.

Relevant to MA operations is also the Exclusive Economic Zone (EEZ), which can extend up to 200 nautical miles from the baseline15. Within the EEZ, the Coastal States exercise sovereign rights to explore and exploit the natural resources, whether living or non-living, of the waters superjacent to the sea-bed and of the sea-bed and its subsoil: they also have jurisdiction over artificial structures, marine scientific research and marine environment protection16. A similar (though not identical) regime deals with the Continental Shelf (CS) of Coastal States17. It must be noted that for some Coastal States (for example the UK) national claims of CS (reflected in their national legislation) were originally based on the 1958 Geneva Convention on the Continental Shelf (CSC)18 and have not yet been changed according to the 1982 UNCLOS19.

Contracting Parties to the 1982 UNCLOS are under wide-ranging obligations to protect and preserve the marine environment20 and take all necessary measures to prevent, reduce and control pollution21. Thus, the Contracting Parties are under the obligation to monitor and assess whether potential harmful effects of marine mining activities may occur22 and communicate/publish reports on this monitoring and assessment23; moreover, the Contracting Parties are required to: (a) adopt effective laws and regulations to “prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities ...” and (b) ensure the enforcement of such laws and regulations24.

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9 The management/regulation of associated activities, such as the sea transportation to land-based treatment facilities of the extracted marine aggregates, their treatment and transport to placement sites, which are also related to this regime, are not going to be dealt with here.
10 Final draft presented and signed in Montego Bay on 10/12/1982 and entered into force on 19/1/1994. For further details, as well as the text and latest status of ratification of the Convention and related agreements, see: http://www.un.org/Depts/los/index.htm. Attention should also be drawn to the Agreement relating to the Implementation of Part XI of the Convention, which deals with deep-sea mining in “The Area”. The term is defined, in Art. 1(1)(a) of the Convention, as “the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction”, The Agreement, which entered into force on 28/7/1996, has had important implications on the ratification of the Convention by most developed States, having also been adopted by all of the EU Member States under consideration here.
12 The maritime zones are the Territorial Sea, the Contiguous Zone, the Continental Shelf, the Exclusive Economic Zone and the High Seas.
13 The baseline is a line along the Coastal State’s coastline (or close to it) from which the breadth of each of the maritime zones is estimated. For details on the different methods used for the determination of the baseline, see Articles 5-14 of the 1982 UNCLOS.
14 See UNCLOS Articles 2 and 3.
15 See UNCLOS Article 67.
16 See UNCLOS Article 76.
17 See Part VI of the Convention, in particular Articles 76 and 77. It must be noted, that there are some differences between the EEZ and CS regimes. A Coastal State’s rights in relation to the Continental Shelf may extend beyond 200 nm (Article 76). However, the rights do not extend to superjacent waters. Art. 77(4) defines natural resources for the purposes of the Continental Shelf regime as “mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species ...”.
19 Greece, 2004; see also UNCLOS Webpage: http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/, where an up to date table of maritime claims can be found.
20 Art. 102. This isregulated in great detail in Part XII of the Convention which is devoted to “Protection and Preservation of the Marine Environment”.
21 See in particular UNCLOS Art. 194(3)(b) and (c), which provides for an obligation to take measures to “minimize to the fullest possible extent” pollution from “vessels” and from “installations and devices used in exploration and exploitation of the natural resources of the seabed and subsoil ...”.
22 See UNCLOS Article 193.
23 See UNCLOS Article 194.
24 See UNCLOS Articles 208 and 214, which are specifically relevant in relation to exploration and exploitation of the seabed and, thus, to marine aggregate operations.

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The Convention for the Protection of the Marine Environment of the North East Atlantic 1992 (OSPAR Convention)

The OSPAR Convention provides a legal framework for agreements and cooperation in the North-East Atlantic region (Table 1), with the objective of taking all possible steps to prevent and eliminate pollution and protect the marine environment from the adverse effects of human activities. The Convention includes specific rules in its Annexes I to IV to deal with pollution from land-based sources, dumping, and offshore sources, as well as with monitoring and assessment of the marine environment. Annex V, adopted in 1998, had the aim to extend the cooperation of the Contracting Parties to cover all human activities that might adversely affect the marine environment of the North East Atlantic. It deals with the protection and conservation of marine ecosystems and, when practicable, with their restoration. Criteria for identifying potentially harmful human activities for the purposes of Annex V are set out in Appendix 3: these clearly cover MA operations. In 2003, a specific “Agreement on Sand and Gravel Extraction” was adopted. The Agreement requires Contracting Coastal States to take into account the “ICES Guidelines for the Management of Marine Sediment Extraction” (ICES, 2003b) within their procedures for authorising marine sediment extraction. National procedures should also take into account “the ecosystem-based approach to management of human activities”; where appropriate, strategic plans should be developed and subjected to strategic environmental assessment (SEA). Finally, the Agreement provides that authorisations for extraction of marine sediments from any ecologically sensitive site should only be granted after consideration of an environmental impact assessment (EIA) and, “where a site is subject to protective measure, but over-riding public interests require the extraction of marine sediments with a consequential significant adverse effect on the site, all necessary steps are taken to avoid adverse impacts on the functioning of the ecosystem of which it forms part ...”.

The Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention)

The Helsinki Convention requires its Contracting Parties inter alia, to take “all appropriate legislative, administrative or other relevant measures”, individually or by means of regional co-operation, “to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea area and the preservation of its ecological balance”. The Contracting Parties (Table 1) are under the obligation to exercise control over their dredging operations (HELCOM, 2002). In addition, the HELCOM Recommendation 19/1 on “Marine Sediment Extraction in the Baltic Sea Area” should be taken into consideration when issuing extraction permits. According to these recommendations, all sediment extractions should be carried out in accordance with the detailed guidelines set out in Recommendation 19/1. These require environmental impact assessments to be carried out, in accordance with specified minimum criteria, as part of all extraction permission procedures. The guidelines also require that in extraction practice, “all measures shall be taken in order to minimize the ecological impacts caused by sediment extraction and transport of the extracted material” and that environmental monitoring is to be a component of every kind of extraction activities. Importantly, the guidelines also require that “monitoring data”, as well as...
“the results of the environmental impact assessment which has formed the basis for the decision on an extraction permit should be made available for scientific evaluation.” In which way is, however, not specified further.

According to the guidelines, extraction permits for “Sensitive Areas”, shall only be granted if a “thorough EIA” in accordance with the guidelines “is proving that the extraction is not likely to cause significant negative ecological effects or lead to a deterioration of the area”. The list of the sensitive areas in the guidelines includes, among others, Baltic Sea Protected Areas (BSPAs), in relation to which special planning and management guidelines and tools have been prepared. However, the list also includes more generally “marine areas near to the coast with significance for coastal sediment transport or with protective function for the coastline (e.g. sand banks, spits and bars)”. Thus, in respect of MA extraction in relation to such “sensitive areas”, a thorough EIA is always required and extraction permits should only be issued if the EIA proves that significant negative ecological effects or deterioration of the area is not likely.

As concerns compliance with HELCOM Recommendation 19/1, Contracting States are required, under Art. 16 (1) of the Convention to report, at regular intervals, on “legal, regulatory or other measures taken for the implementation of the Convention, its Annexes and of recommendations”, as well as on the effectiveness of such measures and problems encountered. Nevertheless, a report, published by HELCOM in 2003, suggests that none of the HELCOM Recommendations in the field of nature conservation and coastal zone management have been fully implemented and that in many cases, reporting is sketchy and does not allow for any reliable conclusions to be drawn. As concerns Recommendation 19/1, the summary table in the report records implementation by only some of the Contracting States, including Poland, but not Germany.


The Barcelona Convention sets out a legal framework for regional and sub-regional agreements and cooperation for the protection of the marine environment of the Mediterranean Sea from pollution. It requires the Contracting Parties (Table 1) to take all appropriate measures (individually or jointly) in accordance with the provisions of the Convention and those of its Protocols to which they are a party, to prevent, abate and combat pollution of the Mediterranean Sea area and to protect and enhance the marine environment in that area.

The issue of MA extraction is covered by Art. 7 of the Convention, which requires Contracting Parties to “take all appropriate measures to prevent, abate, combat and to the fullest possible extent eliminate pollution … resulting from exploration and exploitation of the continental shelf and the seabed and its subsoil”. The corresponding Offshore Protocol to the Convention which, however, has not yet entered into force, contains more specific requirements relevant to authorization of MA operations, such as surveys concerning the effects of the proposed activities on the environment and, in appropriate cases, environmental impact assessment in accordance with Annex IV (Environmental Impact Assessment) to the Protocol.

The Convention for the International Council for the Exploration of the Sea (ICES), 1964

The International Council for the Exploration of the Sea (ICES) is an international scientific organization with the objective to study and assist in the safeguarding of the North Atlantic marine ecosystems and their living resources. The ICES Convention 1964 sets out a Constitution for the Council with a view to facilitating implementation of its programme, as well as some substantive obligations for the State Parties, such as the obligation to furnish to the Council any information which will contribute to the purposes of the Convention. A strategic plan was adopted by the State Parties in 2002, further strengthening the mandate and activities of ICES.

The Council promotes marine research and publishes and communicates its results. Furthermore, ICES provides formal advice and data handling services to the OSPAR and Helsinki Commissions. In relation to MA extraction, the ICES and its Working Group on the “Effects of Extraction of Marine Sediments on the Marine Ecosystem (WGEXT)” investigate the
impacts of MA extraction on marine ecosystems and review and report on the status of MA extraction activities and related environmental research, as well as on any reported legislative and regulatory changes. In 2003, a set of detailed “Guidelines for the Management of Marine Sand Extraction” (ICES 2003b) was developed. The guidelines establish general principles for the sustainable management of mineral resources, emphasizing issues such as the need for conservation, efficient use of materials and least adverse methods of extraction, as well as the importance of encouraging an ecosystem approach to the management of extraction activities and the selection of extraction sites, and the need to protect of sensitive areas and important habitats. The guidelines recommend that international and regional initiatives are taken into account when developing national frameworks and guidelines and that appropriate administrative frameworks are set up for the management of sand and gravel extraction. Detailed guidance is provided on the recommended contents of EIAs and their assessment, as well as on the monitoring of compliance with conditions attached to any extraction authorization.


The Convention on Environmental Impact Assessment in a transboundary context was signed in Espoo, Finland, in 1991 and entered into force in 1997. All EU Member States are Contracting States to the Convention (Table 1), although in some cases, such as in the case of Germany, only since 2002. The Convention, adopted under the auspices of the United Nations Economic Commission for Europe (UNECE), sets out obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. The activities covered by the Convention are listed in Annex I, referring, inter alia (at the requirements of the Convention to plans and programs).

The Protocol to the Convention on Environmental Impact Assessment in a transboundary context was signed in Espoo, Finland, in 1991 (ESPOO Convention) and entered into force in 1997. It counts 41 Contracting States, including the European Community and all EU Member States. The Protocol has been amended twice, in February 2001 (to extend participation by non-UNECE Member States) and in June 2004 (to affect some changes to the Convention), but neither of the two amendments has yet entered into force. For the text of the Convention and a full list of Contracting States, see http://www.unece.org/env/eia/

45 The Protocol requires 16 ratifications or accessions. Only seven States have so far ratified or acceded to the Protocol, see http://www.unece.org/env/eia/. The Protocol was signed in Kiev, on 21/8/2005 at an Extraordinary Meeting of the Contracting Parties to the ESPOO Convention. The Protocol was signed in Kiev, on 21/8/2005 at an Extraordinary Meeting of the Contracting Parties to the ESPOO Convention.


47 The SEA Protocol to the Espoo Convention was signed in Kiev, on 21/8/2005 at an Extraordinary Meeting of the Contracting Parties to the Espoo Convention.

48 The Convention was signed on 25/2/1991 and entered into force on 10/9/1997. It counts 41 Contracting States, including the European Community and all EU Member States. The Convention was amended once, in February 2001 (to extend participation by non-UNECE Member States) and in June 2004 (to affect some changes to the Convention), but neither of the two amendments has yet entered into force. For the text of the Convention and a full list of Contracting States, see http://www.unece.org/env/eia/.

49 The requirements of the Convention are reflected in two Council Directives, namely the EIAD Directive and the SEA Directive.

OTHER RELEVANT INITIATIVES

European Code of Conduct for Coastal Zones

Although not a legally binding instrument, mention should also be made of this policy document, which addresses marine aggregate dredging. The European Code of Conduct for Coastal Zones is an initiative of the Coastal Union (EUCC), launched in 1993. It was included as a priority action in the Pan-European Biological and Landscape Diversity Strategy (PEBLDS 1995) and drafted in 1996/97 by EUCC staff under the auspices of the Council of Europe and UNEP. It was officially adopted by the Council of Europe Ministers in April 1999. In respect of guidance for “Sand and Gravel Excavation and Dredging”, the Code states:

(i) “Sand or gravel extraction should only take place in coastal water at a depth where coastal processes are not compromised (i.e. below the so-called active profile of the coastal zone), and never in ecologically sensitive areas. However while this depth is generally appropriate in relation to the influence of normal tides and storms, evidence suggests that sediment can be moved at lower levels by long period waves, residual tidal movement and currents. The impact of this on adjacent coastal areas which rely on sea borne sediment for their continued development is an important and often overlooked issue.

(ii) “Extraction activities should be timed to avoid conflict with seasonal events such as fish or bird migration.”

(iii) “Turbidity plumes should be minimised by utilisation of the best available technology and practices. Extraction should be as “dry” as possible, and working and sailing speed should be regulated so as to reduce environmental impacts. When aggregates with a high content of fines are extracted, equipment with the capacity of retaining very fine particles should be used, if appropriate in conjunction with silt curtains.”

(iv) “The excavation site should be limited in order to facilitate later recolonisation. Complete removal of the bottom sediment should be avoided.”

(v) “Consideration should be given to make better use of harbour and other dredging. Care should be taken with dredge spoils contaminated with hazardous substances which should not be dumped at sea or used for nourishment.”

It is not clear to which extent the Code of Conduct is being taken into account in relation to MA operations in EU Member States. The review of regulation in different States for the purpose of this paper did not reveal any specific reference being made to the Code of Conduct or its substantive content.

49 The Code of Conduct is available online at http://www.coastalguide.org/.

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1 The Code of Conduct is available online at http://www.coastalguide.org/.

http://www.unece.org/env/eia/ Related material, such as the World Bank Environmental Assessment Sourcebook and Updates is also available at www.worldbank.org under “Environmental Assessment”. See in particular Chapter 2 of the Sourcebook and Update 7, published in 1994, which deals with “Coastal Zone Management and Environmental Assessment”.

http://www.coastalguide.org/ Please note that the Code of Conduct is also available for purchase from the Council of Europe website at http://book.coe.int/ (Model law on sustainable management of coastal zones and European code of conduct for coastal zones (Nature and Environment No. 101) 2009).
THE EUROPEAN LEGAL FRAMEWORK

The powers and functions of the EU institutions and the matters in relation to which the Community is competent to establish and implement common policies depend upon the Treaties establishing the European Community (EC Treaty) and European Union (EU Treaty). The Community has the task of preparing and implementing common policies, inter alia, in the fields of the environment, transport, agriculture and fisheries and to adopt measures in the spheres of energy, civil protection and tourism. Community policy in relation to the environment aims, inter alia, at preserving, protecting and improving the quality of the environment. More particularly, “community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay”. In the field of environmental protection, a considerable amount of secondary EC legislation has been enacted, in particular in the form of Directives. In contrast to Regulations, which are directly applicable and effective in all EU Member States, Directives are binding on Member States as to their aims, but require transposition, i.e. implementation at the national level, by way of legislation. If a Member State fails to transpose a Directive into national legislation by the relevant date, or does so incompletely, it is in breach of its obligations under Art. 5 of the EC Treaty. In these cases, citizens may be able to invoke the Directive in question directly before the national courts. Moreover, the European Commission may institute infringement proceedings against Member States, including in the form of actions before the Court of Justice. Failure to comply with any resulting judgment of the European Court of Justice may lead to the imposition of substantial fines. Annual surveys on “Implementation and Enforcement of Community Environmental Law”, and on “Monitoring the Application of Community Law”, as well as leading judgments of the European Court of Justice in the field of environmental law are published by the European Commission. It is interesting to note that nature, air, waste, water and impact assessment legislation, which includes the Directives discussed in this paper, are the five areas with the highest number of open cases, accounting jointly for 90% of the total number of complaints and infringement cases in the environmental field.


The Environmental Impact Assessment Directive

The EIA Directive was introduced in 1985 and was amended in 1997. The Directive outlines which categories of projects shall be made subject to an Environmental Impact Assessment (EIA), the procedure to be followed and the content of the assessment. Projects specified in Annex I of the Directive are subject to mandatory EIA, whereas in respect of other projects, set out in Annex II, Member States must determine, whether EIA should apply (so-called “screening”). The EIA procedure set out in the Directive seeks to ensure that environmental consequences of projects are identified and assessed before authorisation is given. The Directive envisages public participation as part of the authorisation procedure and requires the public to be informed about any decisions made.

Directive 97/11/EC widened the scope of EIA by increasing the number of types of projects covered, and the number of projects requiring mandatory EIA (Annex I). It also strengthened the procedural base of the EIA Directive by providing for new screening arrangements, including new criteria for Annex...
II projects and providing minimum information requirements, as well as introduced changes to align the Directive with the requirements of the ESPOO Convention. The ELA Directive was further amended by Council Directive 2003/35/EC to align relevant provisions on public participation in accordance with the Aarhus Convention on public participation in decision-making and access to justice in environmental matters, which had been adopted by the Community in 1998.

Marine dredging projects, which were already covered in Annex II of the original ELA Directive, are specifically referred to in Annex II 2(c) of the ELA Directive. In the case of Annex II projects, Member States may determine projects requiring assessment on a case-by-case basis or establish relevant criteria or thresholds to identify such projects (cf. Art. 4(2)). In either case, the decision needs to be made available to the public.

Annex III of the ELA Directive provides detailed screening or selection criteria focusing on the characteristics, location and potential impact of projects which are to be taken into account in this process. The ELA Directive requires that the "competent authorities" responsible for licensing particular (individual) projects make their decisions on the basis of a clear appreciation of any significant environmental impacts. Environmental impact assessment carried out in accordance with the Directives require identification, description and assessment of a project's effects on human beings, animals and plants, soil, water, air, climate and landscape, cultural heritage, material assets, including any impact interactions that may occur. Moreover, public involvement in decision-making must be ensured.

The Directive prescribes that (a) the environmental effects of the proposed project should be properly assessed and (b) all relevant information should be made available to the public within a reasonable time and in an easily comprehensible manner in order to enable the public to express its opinion.

In exceptional cases, Member States may decide to exempt a specific project from the requirements of the Directive. In these cases, alternative forms of assessment need to be considered and both the public and the European Commission need to be informed of the reasons for any decisions. According to (non-binding) clarification provided by the Commission, the provision is to be construed narrowly, and is restricted to cases where full compliance with the Directive is not possible, but may cover instances where there is a serious threat to, inter alia, economic stability or to security. Detailed guidance on "screening," i.e. the question of whether an EIA is required in relation to particular project and on "scoping," i.e. on environmental information needed for the purposes of an EIA, has also been published by the Commission.

Effective implementation of EC Directives requires new legislation or a change to existing legislation: changes to administrative practices are not sufficient, as administrative measures may be altered by the administration at any time. Despite the fact that the EIA Directive was required to be implemented by the 31st of July 1988 and the ELA Directive by the 14th of March 1989, in some cases, there has been incomplete transposition through relevant national legislation or regulations, or failure to ensure that national measures are in full conformity with the EIA and ELA Directives. According to the most recent "Annual Survey on the Implementation and Enforcement of Community Environmental Law" published in 2006, problems with the conformity of national measures with the ELA Directive continue to persist, giving rise to a considerable number of infringement procedures and complaints.
plants to the European Commission\textsuperscript{79}. Often, Member States appear to have been satisfied with a minimal transposition of the Directive, or national administrations fail to correctly implement and apply the legal requirements of the Directive. Weaknesses in the operation of the Directive identified by the Commission in the 2003 report on the implementation of the EIAA Directive include lack of evidence of systematic screening of Annex II projects, little real commitment to scoping, few formal measures to control the quality of EIA procedures and little monitoring of EIAs in practice. The Commission also noted some key information gaps on significant areas of EIA and a considerable variation of public involvement, with some Member States applying a wide and others a very narrow\textsuperscript{80} interpretation of the "public concerned".

As concerns MA operations, too, it appears that although the EIA and EIADirectives may have been implemented in some of the Member States through a variety of Regulations, there have been problems with regard to the universal effective implementation of the Directives’ requirements\textsuperscript{81}.

The SEA Directive

The scope of the EIADirective is limited to projects for which the decision making process requires consent or permission, but does not cover plans and programmes. To extend the need for environmental impact assessment to plans and programmes which may have a significant effect on the environment, a further Directive was adopted in 2001. The central objective of the Strategic Environmental Assessment Directive (Directive 2001/42/EC, hereafter the SEA Directive) is 'to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that an environmental assessment is carried out for certain plans and programmes which are likely to have significant effects on the environment'\textsuperscript{82}.

According to a guidance document on implementation of the Directive, prepared by the European Commission\textsuperscript{83}, "the first requirement in order for plans and programmes to be subject to the Directive, is that they [...] must be both 'subject to preparation and/or adoption by the prescribed authorities' and 'required by legislative, regulatory or administrative provisions'. [...] In identifying whether a document is a plan or programme for the purposes of the Directive, it is necessary to decide whether it has the main characteristics of such a plan or programme. The name alone (‘plan’, ‘programme’, ‘strategy’, ‘guidelines’, etc) will not be a sufficiently reliable guide: documents having all the characteristics of a plan or programme as defined in the Directive may be found under a variety of names'.

Any plan or programme that has been prepared for one of a number of listed sectors, including, \textit{inter alia}, industry, town and country planning and land use, and which sets the framework for future development consent of projects listed in the EIADirective requires an EIA\textsuperscript{84}.

Minerals planning is, in principle, subject to the SEADirective\textsuperscript{85}. Competent authorities which prepare and/or adopt a plan or programme which falls within the Directive’s scope will have to draw up a report on its probable significant environmental effects, consult authorities with environmental responsibilities and the public, and take the findings of both these exercises into account in reaching a decision on how to proceed. In addition, monitoring under the SEADirective allows, \textit{inter alia}, for the identification of unforeseen environmental effects so that remedial action may be taken\textsuperscript{86}. It should be noted that Art. 3(8) of the Directive includes an exemption in the case of plans and programmes the sole purpose of which is to serve civil emergency. According to the latest available annual report on implementation and enforcement of Community environmental law, published in 2006, a number of Member States had failed to transpose the SEADirective by the deadline of July 2004, including Belgium, Greece, Spain and the Netherlands\textsuperscript{87}.

There are other Directives, which may affect MA mining operations. Although these Directives are related mainly to the protection of marine areas that enjoy special status and, thus, their analysis is beyond the scope of the present contribution, brief reference will be made here.

The Habitats Directive and the Wild Birds Directive

The main aim of Council Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (hereafter the Habitats Directive), is to promote and ensure the preservation of biodiversity; it requires from the Member States to work together in order to maintain or restore to a favour-
able conservation status certain rare, threatened, or typical natural habitats and species. These habitats and species are listed in Annex I and II of the Directive respectively. One of the ways in which Member States are expected to achieve this aim is through the designation and protection of sites known as Special Areas of Conservation (SACs). It is interesting to note that sandbanks, which are a very significant source of marine aggregates, are listed in the Annex I of the Habitats Directive (Habitat 11.25). Although the potential implications of this listing for the MA industry have not yet been appreciated, they may be quite significant.

Council Directive 79/409/EEC on the Conservation of Wild Birds (hereafter the Wild Birds Directive) complements the Habitats Directive by requiring Member States to protect rare and/or vulnerable bird species through the designation of Special Protection Areas (SPAs). The Habitats and Wild Birds Directives apply both to Member States' territorial waters and the EEZs or equivalents.

All marine protected areas designated under both Directives form an ecologically coherent network of protected areas of European importance referred to as Natura 2000. Detailed guidance and information on the implementation of Natura 2000 in the marine environment has recently been published by the European Commission.

According to the latest available annual report on implementation and enforcement of Community environmental law, published in 2006, problems with the implementation or adequate transposition of the Wild Birds and Habitats Directives persisted in several Member States, including Greece, France, Spain, Belgium, the Netherlands, the U.K. and Germany.

**Directive on Freedom of Access to Information on the Environment**

Council Directive 2003/4/EC, on Freedom of Access to Information on the Environment, which was required to be implemented by 14th February 2005, imposes a general duty on Member States' public authorities and publicly accountable bodies to make environmental information held by them available to any natural or legal person, upon request. The Directive replaces an earlier Directive on the same subject matter, expanding the existing access granted. However, there are also some narrowly defined exceptions. The information must be supplied within one month and judicial or administrative appeals may be made against a refusal or failure to provide it. In addition, Member States are under an obligation to publish, if possible in electronic form, a wide range of relevant environmental information. This includes international as well as national or local legislation and 'policies, plans and programmes' related to the environment; environmental data derived from monitoring activities; periodic reports on the state of the environment, as well as 'authorisations with a significant impact on the environment' and 'environmental impact studies and risk assessments' on elements of the environment set out in the Directive, such as 'coastal and marine areas'. This Directive has changed the approach in the Member States, which previously relied on statutory registers and facilitated access to other sources of information. However, the success of the Directive depends crucially on the ability of the public to exercise their rights, and it is therefore important that sources of information are well publicised, conveniently located, clearly presented and economical to use.

According to the latest available annual report on implementation and enforcement of Community environmental law, a number of Member States, including Greece, Spain and Belgium had failed to transpose Directive 2003/4/EC by the deadline of February 2005 and were referred to the European Court of Justice. At the end of 2005, infringement proceedings remained open against 10 Member States, including Belgium, Germany, Greece, Spain and France for failure to communicate transposition of the Directive to the Commission.

At present, it is not clear in how far the Directive has been fully and effectively implemented in all the Member States under consideration here. As far as the dissemination, in easily accessible form, of national rules and regulation relevant to MA operations is concerned, the difficulty in reliably identifying accurate and up-to-date information for the purposes of this paper suggests that even where the Directive may have been transposed into national law, adequate implementa-
tion in accordance with the aims of the Directive has not yet been achieved.

By way of context, it should be noted that the Directive seeks to implement, at the Community level, one of the pillars of the UNECE Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters 1998, which entered into force in 2001 and was adopted by the Community in 2005. Council Directive 2003/4/EC is complemented by Council Directive 2003/35/EC, which deals with public participation in decision-making in the drawing up of certain plans and programmes, and with access to justice. A new EC Regulation, directly effective in all EU Member States as from 28th June 2007, has also been adopted (Regulation 1367/2006), to extend the application of the Aarhus Convention to Community institutions and bodies, i.e. “any public institution, body, office or agency established by, or on the basis of, the Treaty”.

The Aarhus Convention establishes a number of rights of the public (individuals and their associations) with regard to the environment and the Parties to the Convention are required to make the necessary provisions so that public authorities (at national, regional or local level) will contribute to the realization of these rights. The Convention has three pillars, namely (a) “access to environmental information”, i.e. the right of everyone to receive environmental information that is held by public authorities; (b) “public participation in environmental decision-making”, i.e. the right to participate in environmental decision-making; and (c) “access to justice”, i.e. “the right to review procedures, to challenge public decisions that have been made without respecting the two aforementioned rights or environmental law in general”. In respect of the last pillar, it should be noted that an Inventory on all EU Member States’ measures on access to justice in environmental matters has been published in September 2007. The relevant country reports, covering all EU Member States suggest that in many cases, there is significant scope for improvement.

**NATIONAL LEGISLATION AND REGULATORY FRAMEWORK**

This paper does not attempt to comprehensively list every national law and regulation affecting MA extraction, but instead concentrates on the most relevant pieces of national legislation which could be ascertained in the course of this study. All eight EU Member States considered here have ratified the UNCLOS 1982 (Table 1). Based on UNCLOS 1982, Contracting States have the right to claim a territorial sea of up to 12 nm from the baseline and an Exclusive Economic Zone (EEZ), where appropriate, of up to 200 nm. It should be noted, however, that not all States have used the UNCLOS as a basis for the delimitation of maritime areas. Notably, the UK has not claimed an EEZ, but continues to base its claims to the continental shelf on the Geneva Convention on the Continental Shelf 1958 and Greece has not (yet) exercised its rights under the Convention due to political tensions with neighbouring Turkey.

States enjoy sovereignty over their territorial sea and are thus able to assert property rights on the mineral resources under those waters. In addition, the UNCLOS and/or the Geneva Convention on the Continental Shelf 1958 provide sovereign rights over the Exclusive Economic Zone and the Continental Shelf outside the territorial sea for the purpose of exploring and exploiting its natural resources. The decision as to how those mineral rights are distributed and may be exercised is, therefore, a matter for national law.

However, Contracting States to the Helsinki, OSPAR and Barcelona Conventions, as well as the ESPOO Convention, are obliged to take the requirements laid down by these conventions into consideration. Germany and Poland are Parties to the Helsinki Convention. The UK, Belgium, Spain, the Netherlands, France and Germany are Parties to the OSPAR Convention and Spain, France and Greece are Parties to the Barcelona Convention (Table 1). All three of the above Conventions have also been ratified by the European Community. All EU Member States are Parties to the ESPOO Convention. In addition, national legislations of EU Member States must be compliant with the requirements of any relevant European legislation.

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100 See the Commission’s Aarhus website at http://ec.europa.eu/environment/ aarhus/index.htm.
102 Art. 2(1)(c) of the Regulation. In respect of Community institutions and bodies acting in a judicial or legislative capacity only, the provisions of Title II, dealing with access to environmental information, are relevant.
103 According to the Commission’s Aarhus website “Arrangements are to be made by public authorities to enable the public affected and environmental non-governmental organisations to comment on, for example, proposals for affecting the environment, or plans and programmes relating to the environment, those comments to be taken into due account in decision-making, and information to be provided on the final decisions and the reasons for it.”
105 Ibid.
107 The relevant Greek law in relation to the territorial sea continues to be found in Law No. 2301/91 (1991) and Decree 918/9196 (1991). The table of maritime claims, available on the UNCLOS website, records that Greece claims a territorial sea of 6 nm, except for the purposes of aviation, where the limit is 10 nm. Turkey, which is a Party to UNCLOS is reported as claiming a 6 nm territorial sea in the Aegean. See http://www.un.org/Depts/los/LEGISLATIONANDTREATIES.
The United Kingdom

The regulatory framework concerning MA extraction in the UK is complicated by the different constitutional status of England, Wales, Scotland and Northern Ireland. The central government has exclusive jurisdiction over the UK's continental shelf. In the English territorial sea, the Central Governmental Departments (since April 2007 in particular the Marine and Fisheries Agency (MFA), an executive agency of DEFRA) have responsibility for MA extraction. For the territorial sea of Wales and Scotland, the same responsibility now resides with the Welsh Assembly Government (WAG) and the Scottish Executive (SEE) respectively. In Northern Ireland, the Department of the Environment (DoE(NI)) is responsible for MA extraction. Each of these departments is also responsible for developing national planning policy guidance, including that for marine mineral development. As concerns England, it should be noted that while the MFA is now responsible for marine aggregate licensing, DEFRA retains the overall policy responsibility.

The ownership of most of the seabed out to the 12 mile territorial limit around the UK and the rights to explore and exploit natural resources of the UK continental shelf are vested in the Crown and are administered by the Crown Estate Commissioners (CEC). Since 1/7/1999, many statutory responsibilities have been transferred to the National Assembly for Wales through the Government of Wales Act 1998 and the Scottish Parliament through the Scotland Act 1998: others should be assumed in the future by the Northern Ireland Assembly through the Northern Ireland Act 1998 (ATKINS, 2004; BOWES, WARD, and EDLOF, 2005; and GIBSON, 1999).

Until recently, the Department for Communities and Local Government (www.communities.gov.uk) - formerly Office of the Deputy Prime Minister (ODPM)) - was responsible for the planning and co-ordination of the procedure of licensing MA dredging. The Department for Environment, Food and Rural Affairs (DEFRA - http://www.defra.gov.uk/) among others, was responsible for environmental protection and, with the Centre for Environment Fisheries and Aquaculture Science (CEFAS - http://www.defra.gov.uk/) and the Crown Estate, for environmental monitoring of MA dredging. Recently, as of 1/4/2007, the Marine and Fisheries Agency (MFA), an executive agency of DEFRA has taken on new environmental responsibilities, including the responsibilities previously exercised by the Department for Communities and Local Government with regard to MA. The MFA will be responsible for the implementation of the new statutory regime governing marine aggregate extraction as from 1/5/2007, see http://www.defra.gov.uk for further information.

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http://www.defra.gov.uk/index.htm
http://www.wales.gov.uk/index.htm
http://www.wales.gov.uk/ihone
DoE(NI) - Department of the Environment of Northern Ireland, Planning Service http://www.planningni.gov.uk
DoE(NI) - Department of the Environment of Northern Ireland, Planning Service http://www.planningni.gov.uk
114. DoE(NI) - Department of the Environment of Northern Ireland, Planning Service http://www.planningni.gov.uk
116. For a detailed discussion of the legal position regarding ownership of the foreshore and seabed in the UK, see SCOTTISH LAW COMMISSION (2003), where it was also proposed that the extent of the Crown Estates ownership of the foreshore and seabed adjacent to Scotland be defined by statute. The Crown’s property rights are qualified by the public’s rights to use the sea and foreshore, which rights the Crown is obliged to respect.
117. Ownership of the foreshore and seabed below low water mark and the limit of territorial sea is prima facie vested in the Crown, unless it has passed to other persons by grant or adverse possession. In the Bristol Channel area, for example, the ownership of both the seabed and foreshore is divided between the Crown Estate and a variety of other parties. In Wales, this is due particularly to the historical status of the Marcher Lords. In 1840, the Duke of Beaufort was also judicially declared to be the owner of the entire foreshore of the Gower Peninsula, although some of that land has now been transferred to other proprietors. Elsewhere, there are numerous examples of privately owned foreshore, frequently derived from the historic titles of owner-occupiers. Nevertheless, the Crown Estate owns around 55% of the foreshore (between mean high and mean low water) and approximately half of the beds of estuaries and tidal rivers in the UK. It also owns the seabed out to the 12 nm territorial limit, as well as the rights to explore and exploit the natural resources of the UK continental shelf, excluding oil, gas and coal, but including renewable energy. The Crown Estate does not own the water column, or govern public rights such as navigation and fishery over tidal waters (GIBSON, 1999).
118. Under the Crown Estate Act 1991, all mineral rights (except oil, gas and coal) are administered by the Crown Estate Commissioners (CEC). See also GIBSON (2004). The regulatory regime governing MA activities has recently undergone fundamental change, with the entry into force, on 1 May 2007, of the Environmental Impact Assessment and Natural Habitats (Extraction of Minerals by Marine Dredging) (England and Northern Ireland) Regulations 2007 (S.I. 2007/1067). The decision to enact Regulations at this time, following extended consultations, was at least in part motivated by the threat of the likely imposition of substantive fines by the European Court of Justice for continued non-transposition of the EIAA and Habitats Directive in relation to marine aggregate extraction. Prior to the new legislation, MA extraction regulation was exercised through a non-statutory “interim Government View Procedure” (GVP), which, since 1989, required an Environmental Impact Assessment (EIA) to be undertaken for all MA extraction operations. Subject to a favourable Government View on the environmental acceptability of a proposal, the Crown Estate, as owners, were responsible for the licensing of marine minerals dredging on a commercial basis to dredging companies. The GVP was an informal, voluntary process, incorporating the various elements of the EIA and Habitats Directives, but not in the legally binding form required by EC law.
119. The Environmental Impact Assessment and Natural Habitats (Extraction of Minerals by Marine Dredging) (England and Northern Ireland) Regulations 2007 set up a system of regulation to apply to marine aggregate dredging. They cover English and Northern Ireland territorial waters, the continental shelf around England and Northern Ireland and some outer marine areas around Scotland and Wales. As is pointed out in “Marine Minerals Guidance Note 2” (MMG 2), which provides detailed guidance on the new statutory procedures, due to the depth of the waters involved, it is in practice unlikely that any dredging will be proposed beyond the Scottish Zone or towards any of the outer limits of the UK.
120. See Explanatory Memorandum to the Environmental Impact Assessment and Habitats (Extraction of Minerals by Marine Dredging) Regulations 2007. For explanatory impact assessments, see paras. 10, 11 and 22.
122. For further details, see http://www.thecrownestate.co.uk. See also ARMSTRONG, GIBSON, and LEWIS, 2004.
123. The U.K. had failed to transpose the EIA and Habitats Directives in respect of marine minerals dredging projects and infraction proceedings against the UK were pending prior to the adoption of the new statutory regime. See Explanatory Memorandum to the Environmental Impact Assessment and Habitats (Extraction of Minerals by Marine Dredging) Regulations 2007, at paras. 4.3 and 4.5.
124. A first draft of the Regulations was first published in 1999, but the Regulations were only adopted, after extensive consultations, in April 2007. They entered into force on 1/5/2007 and apply to all new marine mineral dredging proposals, as well as to pending proposals, and to some specified changes to existing operations. The GVP procedures will continue to apply to existing MA dredging operations unless either the operator propose to alter them or if the Secretary of State considers that they are likely to have a significant effect on a European site, i.e., a Natura 2000 or SPA protected respectively under the Habitats Directive or the Wild Birds Directive or a site proposed for designation as a Special Area of Conservation under the Habitats Directive. See Regulations 2.51, and Schedule 3.
125. Moreover, the parts of the continental shelf adjacent to Scotland which do not fall within the Scottish zone, as defined in the Scotland Act 1998 and the continental shelf adjacent to Wales, see Explanatory Memorandum to the Environmental Impact Assessment and Habitats (Extraction of Minerals by Marine Dredging) Regulations 2007, at para. 5.1.

Journal of Coastal Research, Special Issue No. 51, 2010
Continental Shelf. In practice, therefore, the regulations will control MA extraction close to the English coast24–26.

The Welsh Assembly130 has, in relation to Welsh waters, recently enacted similar legislation131, and the Scottish Parliament is expected to make separate legislation in relation to marine areas28 covered by its competence under devolved administration132. For reasons of economy, the following brief overview provides details only for the new statutory regime applicable in England and Northern Ireland and does not make specific reference to the corresponding Welsh Regulations which, however, appear to be substantially similar.

The specific competence of the Welsh Assembly for measures relating to the extraction of minerals by marine dredging within Welsh territorial waters derives from the European Communities (Designation) (No.3) Order 2000, S.I. 2000/2812, Schedule 1, Sect. 2(3).

The Environmental Impact Assessment and Natural Habitats (Extraction of Minerals by Marine Dredging (Wales) Regulations 2007, W.S.I. 2007 No. 2910 (W.221), which entered into force on 28/09/2007. Note also the consultation by the Welsh Assembly, conducted in late 2006, on proposed Marine Minerals Dredging Regulations and Procedures, which were then expected to enter into force in March 2007, see http://www.golwg.gov.uk/consultations/opened.

No such legislation has been enacted at the time of writing. In Scotland, consultations by the Scottish Executive have recently been conducted on the proposed “Environmental Impact Assessment and Habitats (Extraction of Minerals by Marine Dredging) (Scotland) Regulations 2006”, for consultation responses, see http://www.scotland.gov.uk/Topics/Environment/Consultations. Earlier in 2007, consultations were also conducted on “Revision of Circular 15/1999”. For details, see “The Environmental Impact Assessment (Scotland) Regulations 1996”, the Scottish legislative instrument implementing the EIA Directive, (http://www.scotland.gov.uk). According to the guidance document explaining the new statutory procedures for the control of aggregate extraction133. The policy objectives in MMG1 are to: (i) minimise the area licensed for dredging at any one time; (ii) carefully locate new dredging areas; (iii) consider all new applications in relation to the findings of an Environmental Impact Assessment (EIA); (iv) adopt dredging practices that minimise the impact of dredging; (v) require operators to monitor, as appropriate, the environmental impacts of their activities during, and on completion of, dredging; and (vi) safeguard resources for specific uses.

128 Dredging within the coastal waters may also be regulated by other authorities, namely the Coastal Protection Authorities or the MPA under section 18 or section 34 (Safety of Navigation) of the Coast Protection Act 1949. In some cases, therefore, a dredging proposal may require consent under more than one regulatory regime.

129 The competence of the Scottish Assembly for measures relating to the extraction of minerals by marine dredging within Scottish territorial waters derives from the Scottish Parliament Act 1998, Sect. 126.

130 The specific competence of the Welsh Assembly for measures relating to the extraction of minerals by marine dredging within Welsh territorial waters derives from the European Communities (Designation) (No.3) Order 2000, S.I. 2000/2812, Schedule 1, Sect. 2(3).

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133 Provided the application does not need to be referred to an Inspector or be the subject of consultation with another EIA state.

134 For a definition of ‘dredging agreement’ and ‘dredging permission’, see the glossary in MMG2, Annex A.

135 Regulations 4, 14 and 27.


139 According to the guidance document explaining the new statutory procedures (at para. 9.23), issued by DEFRA in 2007 as MMG2, see above.
It should be noted that the SEA Directive has been transposed into UK law, in relation to plans or programmes related to projects listed in Annex I or II of the amended EIA Directive, which would seem to cover marine aggregate extraction. For England, Northern Ireland and Wales respectively, relevant Regulations were adopted in 2004\(^{14}\). In the case of Scotland, the relevant rules are those in the Environmental Assessment (Scotland) Act 2005, which came into force on 20/2/2006\(^{14}\).

For England, the relevant planning policy guidance in respect of marine aggregates was contained in “Minerals Planning Guidance Note 6” (MPG6). MPG6 has been replaced by “Minerals Policy Statement 1” (MPS1), published in November 2006, the MPS1 “Annex on the Supply of Aggregates, and the current National and Regional Guidelines for Aggregate Provision in England 2001-2016”, published in 2003. MPS1 needs to be read together with “Planning and Minerals: Practice Guide”, published in November 2006\(^{14}\).

In Wales, the need for a strategy to deal with aggregate extraction in the Bristol Channel, Severn Estuary and river Severn and an “Interim Marine Aggregates Dredging Policy” for these areas has been published by the WAG\(^{14}\). In Scotland, there has been very little interest in marine dredging\(^{16}\), but it has been suggested that this may change in the future\(^{19}\). Scottish “Guidance on Minerals Planning” is documented in NPPG\(^{17}\), which, at para. 54, refers to marine dredged minerals. However, NPPG4 has recently been superseded by SPP4, which does not specifically refer to marine minerals extraction. Supplementary advice on the environmental effects arising from mineral working operations is set out in PAN 50\(^{18}\).

In Northern Ireland, there appears to be a surplus of onshore sand and gravel resources and it seems that so far, no licenses have been issued for the extraction of marine aggregates (Boy ES, S.; Warren, L., and Elliott, M., 2003)\(^{19}\).

Finally, it should be noted that consultations have just been completed on a white paper for a Marine Bill, published on 15 March 2007\(^{19}\). A summary of responses to the White Paper has been published and is available electronically on the DEFRA website. The White Paper proposes the adoption of new legislation to introduce changes related to: the introduction of a new UK-wide system of marine planning, including a streamlined, transparent and consistent system for licensing marine developments; introduction of a flexible mechanism to protect natural resources, including marine protected zones with clear objectives; improvements to the management of marine fisheries in relation to England, Wales and Northern Ireland and the ability to share the costs of management with commercial and recreational sectors; and a new Marine Management Organization delivering UK, England and Northern Ireland functions. An analysis of the potential impacts of the proposed legislative changes outlined in the White Paper is beyond the scope of this contribution. However, it is clear that further developments are worth careful monitoring. Should legislation based on the wide-ranging proposals in the White Paper be adopted, much of the existing regulatory and administrative framework relevant to marine aggregate extraction in the UK may, in due course, change.

Germany

Germany is a Federal Republic and, therefore, competence is divided between the Federal Republic (“Bund”) and the Federal States (“Länder”)\(^{20}\). Moreover, there is also another administrative layer (local authorities - Selbstverwaltungskörperschaften) for counties, towns and municipalities (ZIBSON, 1990).

The Federal Republic has sovereign rights over the seafar and the seabed of the Territorial Sea, as well as rights to explore and exploit the natural resources of the Continental Shelf (CS)\(^{22}\) and the Exclusive Economic Zone (EEZ). However, in some coastal areas, the ownership rights of the Federal Republic are limited by those of the individual Federal States\(^{19}\).

In the Territorial Sea, administrative competence is divided between those of the Federal Government and the government of

14 Each of the respective pieces of legislation adopts the relevant text in the SEA Directive, referring to plans and programmes which are prepared for “agriculture, ..., energy, industry, ... water management, town or country planning or land use” and set “the framework for future development consent in respect of projects listed in Annex I or II of the EIA Directive”. Reference is also made to cases where assessment is required under Art. 6 or 7 of the Habitats Directive. The text would seem to cover plans and programmes related to projects for “extraction of minerals by marine or fluvial dredging”, as these are listed in Annex II of the Directive. However, it is interesting to note that only the Scottish legislation expressly lists relevant projects in a Schedule, whereas the Regulations for England, Northern Ireland and Wales do not.

15 The Environmental Assessment of Plans and Programmes Regulations 2004, SI 2004/3863. Similar Regulations were enacted, also in 2004, for Northern Ireland (SI 2004/2859) and Wales (WSI 2004/1156 (W. 170). For further information on the different Regulations applicable in England, Northern Ireland and Wales, as well as the relevant Scottish legislation, see http://www.communities.gov.uk/ukplanning/buildingplanning/sustainability/environmental/.

16 The Act repealed secondary legislation (Regulations) enacted in 2004. The legislation is in relevant to MA operations, as it applies to plans and programmes, which set the framework for future development consent of projects involving extraction of minerals by marine or fluvial dredging, see Section 53 of the Act and para. 24 (5) of Schedule 1.

17 All documents are available on the website of the Department of Communities and Local Government which took over the responsibilities of the ODPM in May 2006 (see www.communities.gov.uk, under Planning Policy and Guidance, Minerals and Waste).


19 There are currently only two extant dredging licenses in Scotland, one in the Firth of Forth and the other in the Tay Estuary. Only minor activity has taken place at both locations, see Extraction of Minerals by Marine Dredging Consultation Paper, July 2006, available on the website of the Scottish Executive.

20 Friends of the Earth Scotland (1996) Foundations for Sustainable Resource Use: A Strategy for Scotland, Edinburgh (see the web page of the Scottish Executive) that in recent years there has been growing interest in the potential of marine dredging for aggregates, particularly in the Firth of Forth, and Tay Cliffs and the Moray Firth Areas.


16 “Planning Advice Note PAN 50: Controlling the environmental effects of surface mineral workings” http://www.scotland.gov.uk/library5/planning/controllingtheenvironmentaleffects/mineralworkings.htm/


18 “Planning Advice Note PAN 50: Controlling the environmental effects of surface mineral workings” http://www.scotland.gov.uk/library5/planning/controllingtheenvironmentaleffects/mineralworkings.htm/ This provides a framework within which planning authorities can prepare policies for all types of mineral development likely to arise in their area, taking into account coastal processes, natural heritage issues as well as possible implications for the transport of material by sea.

19 However, see “Regional Planning Policy – Minerals” on the DoE(NI) website.


21 According the Basic Law (“Grundgesetz”), i.e the constitution of the Federal Republic of Germany.


23 For example the Federal States own the imperial waterways (“Reichswasserstraße”), which may run through the coastal waters.
of the Federal States. For instance, although the Federal Republic has ownership rights over the German mudflats, the Schleswig-Holstein mudflats were, in 1985, declared a national park, the protection and administration of which falls under the Gesetz zum Schutze des Schleswig-Holsteinischen Watteneeres. Nevertheless, the Federal Government is responsible for providing national guidelines and co-ordinating planning policy from which the individual coastal States ("Länder") derive their own planning legislation.

Regarding MA permits (i.e. exploration/extraction licenses), these must be obtained from the Land or Bezirksregierung responsible for the relevant territorial waters. The principal regulations are similar to those regarding land mining. The Federal Mining Law applies to all solid, liquid and gaseous mineral resources in the German territory as well as to activities pertinent to their development. Moreover, the Environmental Impact Assessment Act (UVPG), which implements the EIA/ELA and SEA Directives into German law, ensures that for projects set out in Appendix I to Paragraph 3 (which include mining operations) environmental impact assessments are carried out and taken into consideration in the granting of permits and licences. However, secondary legislation enacted under the statute seems to exclude most mining projects (other than in sensitive areas) which involve extraction areas of less than 25 hectares from the requirement of an environmental impact assessment. Moreover, mining projects appear to be altogether exempt from the requirement for SEA under the UVPG.

Although Germany shows notable consideration for nature protection and conservation, information on MA licensing procedures is not easily accessible. Although the Federal Ministry for the Environment ("Bundesumweltministerium") maintains a good website, with much information on environmental issues and legislation, including on EA, the website does not contain any information on mineral extraction, marine or otherwise. Information about relevant legislation and competencies is, therefore, rather difficult to ascertain and it appears that there is no clear national policy on MA extraction. No uniform guidance exists on the required scope or content of environmental statements concerning the environmental impact assessment of MA extraction. However, it appears that the ICES Guidelines (ICES, 2003) are used in respect of extraction in the North Sea, whereas the HELCOM Recommendation 19/1 is applicable for extraction sites in the Baltic Sea. Finally, it should be noted that the administrative Directives HABAK and HABAB might also be relevant in some cases.

Spain

Competition in the management and protection of the marine environment is shared by the different levels of the Spanish administration. The Central (national) Government has exclusive jurisdiction regarding the Territorial Sea, the EEZ, and the Continental Shelf. The Territorial Sea (i.e. up to 12 nautical miles) falls within the national jurisdiction of the coastal States. The EEZ (i.e. to 200 nautical miles) is governed by the UNCLOS, i.e. the seabed beyond national jurisdiction, is governed by Part XI of UNCLOS, i.e. the seabed beyond national jurisdiction, is governed by Part XI of UNCLOS (see also ICM in Europe - http://www.coastalguid.org/icm/index.html). The Continental Shelf (beyond the EEZ) is governed by the Continental Shelf Act (Bundesgesetzblatt, 1950), which sets out the overarching legal framework for the Continental Shelf. The Federal General Administrative Guideline on the Execution of the EIA Act of 1995 ("Geezt über die Umweltverträglichkeitsprüfung – UVPG") was passed, with further details concerning the implementation of the law and the handling of the single categories. It should be noted that the Federal Government exclusively reserves the right to develop dredging is regulated by State Law, see UVPG, Annex I (No. 10.10).

For an overview over Coastal Zone Management issues in Germany, see http://www.coastalguid.org/icm/index.html. Information can be also found in the following web portals: http://www.dredging-in-germany.de/site/english/ch_rechlag100/start.html and http://www.ice.dlr.de/works/wp圊1/default.php?wg=WZENT.


Spain is a "Union State", comprising different administration levels: the Central Government, the Autonomous Communities, the Provinces, and the Local Authorities. There 17 Autonomous Communities ("Comunidades Autónomas"), 12 of which are coastal, and 2 autonomous cities ("Ciudades Autónomas"; Ceuta and Melilla) which group 50 Provinces ("Provincias") http://en.wikipedia.org/wiki/Spain. Each of the Autonomous Communities has individual founding fathers and enjoys varying degrees of autonomy. The Provinces have no formal powers as such, as they form groups of local authorities. In fact, Spain functions as a highly decentralized Federation of Autonomous Communities and might be regarded as the most decentralized European State.
EEZ and the Continental Shelf, in comparison, jurisdiction in the internal waters is divided between the Central Government and the Autonomous Communities. Mineral rights are vested in the state, forming part of the public domain ("dominio público marítimo-terrestre")\(^{172}\). The state controls and regulates\(^{173}\) the rational use of the resources "in agreement with nature" i.e. with respect to the landscape and the historical patrimony.

MA extraction is referred to in Art. 63 of the Shores Act. An interesting feature of the Act is that it allows MA extraction only for beach creation and/or replenishment purposes; the Act also requires evaluation of the environmental impacts of MA extraction. In addition, Royal Decree 1471/1989\(^{175}\) approves General Regulations to develop and execute the Shores Act and includes guidelines/specifications on the authorisation procedures of MA extraction (in Articles 124-127). The requirements for the evaluation of the environmental impact of activities affecting the coastal zone and the marine environment were mainly regulated in the Decree 6/2001\(^{176}\) which modified the Royal Decree 1302/1986\(^{177}\) so as to make it compatible with the requirements of the the EIA Directive (Directive 1997/11/EC) and the ESPOO Convention, which Spain had ratified in 1997. According to these requirements\(^{177}\), full EIA studies are mandatory if MA extraction volumes exceed 3x10\(^6\) m\(^3\) per year; for lower extraction volumes simpler environmental impact statements are sufficient, unless it is decided, on a case by case basis, in accordance with "screening" criteria set out in Annex III of the (amended) Royal Decree 1302/1986, that a full EIA is required\(^{178}\). The procedure is regulated by Royal Decree 1131/1988\(^{179}\). However, there was little official guidance on the detailed methodology/content of the required EIA contained in Royal Decree 1131/1988\(^{180}\). It appears that Spain was in fact facing infringement proceedings for incomplete transposition of the EIAA Directive and new legislation was introduced, in April 2006. The relevant legislation, Decree 9/2006\(^{181}\), primarily transposes the SEA Directive into Spanish law, so as to make plans and programmes subject to environmental impact assessment. However, Decree 9/2006, also modifies Royal Decree 1302/1986 in several respects, so as to make it fully compatible with the requirements of the EIAA Directive. In particular, the legislation now provides more detailed requirements as to the substantive contents of any EIA which the relevant authorities require in relation to the licensing of projects, including MA operations.

In addition, under the new legislation, mandatory EIA is now required, irrespective of the extraction volume, in relation to marine dredging activities in specially sensitive environments protected under the Habitats and Wild Bird Directives.

The Directorate for the Coasts\(^{182}\) of the Ministry of the Environment\(^{183}\) is responsible for the protection and policing of the marine-terrestrial zone\(^{184}\) and the authorisation/licensing of MA extraction. As MA extraction is permitted only for beach creation/replenishment, the Ministry for Public Works\(^{185}\), which carries out and funds beach replenishment projects, is also relevant.

The powers of the Autonomous Communities include, inter alia, the demarcation of the shoreline, coastal-terrestrial planning and zone planning\(^{186}\). Processing of MA extraction applications in coastal and internal waters also takes place within the coastal Autonomous Communities. However, as MA extraction is permitted only for beach replenishment, the Autonomous Communities have also an interest in MA extraction in the Territorial Waters.

Finally, it should be noted that another relevant piece of legislation, Decree 27/2006\(^{187}\), was introduced in July 2006 to transpose into Spanish law Council Directive 2003/35/EC, on Freedom of Access to Information on the Environment, and Council Directive 2003/35/EC\(^{188}\), reflecting the requirements of the Aarhus Convention on public participation in decision-making and access to justice in environmental matters.

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\(^{175}\) The article 132.2 of the 1978 Spanish Constitution declares (affirmed also by Art. 3 of the Shores Act ("Ley de Costas") that State public property shall consist of all properties in any event of the marine-terrestrial zone: the fore-shores, bays, "Territorial Sen and all natural resources of the Exclusive Economic Zone and the Continental Shelf" (http://noticias.juridicas.com/base_data/Admin/1302-1986.html).


\(^{181}\) Note that an independent guide was published in 2004 (BOUCAU-MILLER, 2004).


\(^{185}\) See also http://www.mmaesoecostalesguia_planes/index.htm.

\(^{186}\) Ministerio de Obras Públicas y Urbanismo

\(^{187}\) Relevant also is the Sectoral Conference of Medio Ambiente, an organisation facilitating co-ordination between the Autonomous Communities and the State Administration.


\(^{189}\) Council Directive 2003/35/EC amends the EIAA Directive to align relevant provisions on public participation in accordance with the Aarhus Convention on public participation in decision-making and access to justice in environmental matters, which had been adopted by the Community in 2006.
France

Property rights in the French foreshore and seabed are vested in the state. As these areas form part of the public domain ("domaine public de l'état"), they are controlled/regulated by the state and are subject to significant restrictions in relation to property rights190.

The primary responsibility for the management of marine areas lies with the Ministère de l'Equipement, des Transports et du Logement, which is responsible for development planning191 and administration of navigable waters. Several national government departments have functions relevant to the marine environment (e.g. Ministère de l'Aménagement du Territoire et de l'Environnement, Ministère de l'Agriculture et de la Pêche192 and Ministère de l'Économie, des Finances et de l'Industrie (MINIFI)193). Competence in environmental management is also given to regional authorities (Régions, Départements and Communes), as well as to national agencies such as the Conservatoire du Littoral. The national government appears to have complete jurisdiction over mining on the Continental Shelf, whereas jurisdiction within territorial waters appears to be shared between the national and regional governments.

The French Mining Code ("Code Minier")194 sets out the legal framework for the exploitation of mineral resources of the French seabed195, including the Continental Shelf196. The provisions of the Mining Code are supplemented by several other pieces of legislation which are relevant to the exploitation of the Continental Shelf197 and the French territorial waters198. Mining (dredging) permits require Environmental Impact Assessments199. However, EIA studies are not in all cases mandatory. The content of EIAs is not adapted specifically to MA dredging projects, but is determined on a case-by-case basis. Since there is no clear and uniform guidance on the required content of the EIA concerning MA extraction, the quality of EIAs carried out by independent consultants on behalf of MA companies may vary200.

Overall it appears that, until recently, the administration and regulation of MA activities in France was quite fragmented. The administrative authorities responsible for licensing MA prospecting and extraction were the Ministry of Economy, Finance and Industry201, the DRIRE202 (responsible for granting "Mining title investigation" concessions), the DDE203 (responsible for sanctioning the use of public domains) and local authorities204 (responsible for mining permits). Scientific organisations were also consulted; for example, IFREMER205 advises on the preliminary and follow-up studies needed to assess the environmental impact of extraction.

However, new legislation was introduced in July 2006 to streamline and simplify the procedure for applications pertaining to MA operations ("prospection, recherche et extraction"). Under the new legislation, Décret 2006-798206, which entered into force in October 2006, only one application is required207 for the purposes of obtaining licences and concessions related to MA operations. The full application, containing, among other things an EIA as provided for in R. 122-3 of the "Code de l'environnement"208, should be submitted to the Ministère de l'Industrie (Ministry of Economy, Finance and Industry), but is subsequently handled by the local authority ("préfecture") who then consults with all other competent authorities, which appear to remain the same as previously.

The internal consultations are followed by a public enquiry and, four months later, by a meeting involving all the competent authorities, commissions, concerned parties and the public.
plicant. The responsible “Préfet” finally sends the completed dossier, together with his own views, to the Ministry responsible for matters related to mining, who then consults further with a number of other Ministries (e.g. Finance, Environment, Maritime Affairs, Fisheries, Defence). Any objections can only be raised within two months. The Minister in charge of mining is responsible for the issuing of a prospective licence or extraction concession; favourable decisions are published in the “Journal officiel” and, subsequently, in any journal in the nearest coastal zone to the proposed site. However, unfavourable decisions are not published, and the law provides that silence on the part of the Ministry for 48 months (in the case of applications for extraction concessions) or 36 months (in the case of applications for prospective licences) is considered rejection of the application. Thus, while an applicant apparently now deals only with one local authority directly, the administrative procedures remain complex and, the time-frame for a final decision on any application is considerable.

The legislation also provides that prospecting and extraction activities are subject to control (“police des mines en mer”) to ensure that any licence or concession conditions are complied with. Further details in this respect are set out in the legislation. It should be noted that the legislation does not, however, apply to small extraction projects, which are defined as involving an area of less than 3000 m², with extraction not exceeding 100,000 tonnes annually, and to activities for non-commercial purposes, in particular coastal zone management. In respect of small extraction projects, reference is made to Title I of Book V of the “Code de l’environnement” (Environmental Code), which deals with ‘Classified facilities for the protection of the environment’, including mining operations, which are subject to authorisation on the basis, inter alia, of an environmental impact assessment. In relation to MA operations for coastal zone management purposes or other non-commercial purposes, the new legislation makes no reference to any regulatory regime that may apply.

The Netherlands

The national government, provincial governments and municipalities form different levels of public administration with regard to the environment. However, the national government has overall jurisdiction in the Territorial Sea, the EEZ and the Continental Shelf. The extraction of sediments from the bed is regulated by the Extraction Act of 1971, which applies not only in the Territorial Sea, EEZ and the Continental Shelf, but in all Dutch waters (“Rijkswateren”).

The Dutch State is the owner of the seabed in the Territorial Sea. Moreover, it has exclusive rights on mineral resources found on and beneath the seabed of the Dutch Continental Shelf (Article 4b of the Extraction Law). Therefore, in addition to the issuing of an extraction license, a contract must be drawn between the operator and the State i.e. the seabed owner.

The state powers relating to the MA extraction are primarily exercised through the Ministry of Transport, Public Works and Water Management, which has the responsibility for integrated planning, at the national level and is the competent authority for MA extraction licensing, through the North Sea Directorate. The policies relevant to the extraction of marine sediments are found in the Regional Extraction Plan for the North Sea (RON, 1993) and its updated version (RON2) and the Environmental Impact Assessment Decree. The ICES Guidelines (ICES, 2003b) have been chosen to prescribe the content and scope of the assessment of environmental impacts of MA extraction.

When MA extraction is of small scale, then a full-blown EIA is not necessary and an environmental impact statement/report is sufficient; in addition, the application procedure is short (MER, 1994). Shallow and small-scale sediment extractions are defined in the RONs as those involving the extraction of a sediment layer less than 2 m thick and covering a seabed area less than 500 ha (in the Territorial Sea less than 100 ha); however, if the sediment extraction takes place in water depths less than 20 m, an environmental impact study is compulsory. RON2 allows extraction of sediments up to 5 m in thickness and the sediment storage (filling) in extraction pits outside the 7 m water depth line for coastal protection purposes. Extraction of sediments more than 2 m of thickness is allowed (under conditions) from areas deeper than 20 m.

It appears, however, that the position has recently undergone some change. According to ICES (2007), “In 2006 the limits for the requirement of an Environmental Impact Assessment for the extraction of marine sediments are set on an area of more than 500 ha (5 km²) and/or an amount of more than 10 million cubic meters per license. These limits were already valid for the Exclusive Economical Zone (EEZ). They are now also set for the Territorial Zone (less than 12 miles from the coast line), were previously an area of more than 100 ha (1 km²) was the limit.”

ers in summer and all ports. For all these areas, MA extraction is under the national government jurisdiction (Article 6 (1) and Article 8 (1) of the Extraction Law 1971. For details see Barretta (2003) and http://www.noordzee.nl/waterkwaliteit/.

S. Ministerie van Verkeer en Waterstaat, http://www.veerwater.nl

211 Activities are being coordinated with other competent ministries and government bodies. For details, on the management in the Dutch sector of the North Sea, see Barretta, Erika, and Van Der Molen, 2003.

212 Rijkswaterstaat, http://www.rijkswaterstaat.nl

213 In the Netherlands, several policy documents have been drawn to provide government guidance/interpretation on sediment extraction (for more detailed information, see Barry, Erika, and Van Der Molen, 2002; and Barretta, 2003/2004).


216 Pit refilling is permitted only during 2 summer months and 1 winter month (RON2, 2004).

217 For more details on the Dutch sediment extraction regulation see DGV (2003) and Barretta (2004).

218 ICES. 2007. The document also states: “The policy and the regulations of the Second Extraction Plan for the North Sea and the policy on shell extraction
Finally, it should be noted that since 2006, sand extracted for the dredging of shipping lanes in areas with water depths of less than 20 m, has to be placed back on the seabed within the 20 m depth contour237.

Poland

Property rights regarding the seabed are vested in the state and form part of the public domain (“Obszarami morskiem Rzeczypospolitej Polskiej”)238, mineral resources are also the original and exclusive property of the state239. The national government has overall jurisdiction in the sea, beyond the mid-tide water mark (including the Inland Waters, the Territorial Sea and the Exclusive Economic Zone). The Act on Polish Marine Areas230 sets out the range of competence for the management of both the marine areas (“Obszary morskie Rzeczypospolitej Polskiej”) and the newly established “coastal strip”. The main authorities responsible for these areas are the three regional Maritime Offices231 (in Gdynia, Szczecin and Szczecin) and the Ministry of Environmental Protection, Natural Resources and Forestry232, which guide and control activities with environmental implications. Mineral resource initial investigations, prospecting/evaluation and extraction are subject to the regulations relating to geological investigations233. The Ministry of Environmental Protection, Natural Resources and Forestry is the competent authority for mining administration234 with the Department of Geology and Geological Concessions235 as task leaders.

Regulation related to MA extraction is similar to that governing land mining. The Polish Mining Law236 sets out the legal framework and applies to minerals contained in the seabed of the Polish maritime zones. The requirements of environmental impact assessment procedures are detailed in the Act on Access to Information on the Environment and its Protection and on Environmental Impact Assessments Act (9/11/2000)237, which also lays down the principles concerning environmental protection, provision of environmental information and public participation procedures. There are no national guidelines on the content of EIAs for MA extraction238 or an integrated national policy regarding MA extraction239.

Belgium

Belgium is a federal state240 made up of three communities241 and three regions242, which are subdivided into provinces and communes; therefore, competences243 is shared by these entities (GIBSON, 1999; VAN EILBURG-VELINOVA, D.; VALVERDE, C.P., and SALMAN, A., 1999). Nonetheless, only the Flemish Region (“Vlaanderen”) borders the North Sea.

Sovereign rights in the seabed are vested in the State. The Federal Government has competence in the North sea (i.e. the territorial waters, the continental shelf and the EEZ)244 beyond the baseline and/or the mean low-water line along the coast245 (GIBSON, 1999: NBR, 2005, and VAN EILBURG-VELINOVA, D.; VALVERDE, C.P., and SALMAN, A., 1999). An Advisory Committee246 has been set up247 to co-ordinate actions concerning the management of

An EIA is not mandatory for small-scale onshore mineral (sand and gravel) resource exploitation if the extraction volumes are less than 2000 tonnes per year and the affected area is smaller than 2 hectares. The Kingdom of Belgium, a constitutional monarchy and parliamentary democracy, since 1970 has been gradually transformed into a Federal State. The latest radical change of the Constitution (“De Belgische Grondwet / La Constitution Belge”) was carried out in 1993, after which the Federal Government is backed up by three Regional Governments (Vlaanderen, Wallonie and Bruxelles), and further the provincial and local governments structures (see OECD, 1997; WOUTERS and DE EMST, 2001 and http://en.wikipedia.org/wiki/Manual_Page).


Under the Constitution (Art. 3.5) powers are divided between the Federal Government and the communities and regions, and Art. 6 of the Special Institutional Reform Law of 8/8/1980 (“Ministour belgique”, 10/9/1980, as amended) defines their areas of competence. The constitutional and special institutional reform Law extended the competencies of the Communities to social affairs, granted competencies to the Regions and established the institutions of the Communities and the Walloon Region. The competencies of the Flemish Region were exercised by the Flemish Community. The institutions of the German-speaking Community were not established until the law of 5/12/1983, defining its competencies for the same matters as those for which the two Communities had competencies - with the exception of the use of languages - and providing for the possibility of the Walloon Region to transfer the exercising of certain competencies to the German-speaking Community (http://www.europa.eu.int/2022/01/2001-05.html and http://www.raadvanweden.be/realisatie/1997/0111253.cfm).


Coastal zone management on land falls under the federal and regional jurisdiction, whereas the federal government (barring some exceptions) is competent for the management of the sea. The dividing line between land and sea is formed by the provincial frontier of West Flanders, which is bounded on the seaward side by the baseline (or the mean low-water line) along the coast. However, divergent laws can assign jurisdiction at sea to the Flemish Region. For example, the Law of 6/7/1996 (R.S., 1996/1986) provides that certain activities/works in the Belgian part of the North Sea (e.g. the management of waterways, harbour, coastal defense, pilot services, rescue and towing services at sea and nowadays fishing and dredging) fall under the regional authority (NBR, 2005). Nevertheless, MA extraction is under the Federal jurisdiction (see NBR, 2006).

To ensure integrated planning and implementation of Belgium’s National Policy on Oceans, see also http://www.un.org/envt/gov真情/2022/01/2001-05.html#oceans.

Art. 1 of the Royal Decree of 15/8/2000 installed a Consultative Commission charged with the co-ordination between the different parts of the administration concerned with the management of the exploration and exploitation of the Continental Shelf and the Territorial Sea and the fixation of modalities and working costs (“Koninklijk besluit tot instelling van de raadgevende Commissie voor de administratie betreffende de exploitatie en onlast van de Rijksomgeving, de Hadelijke Zeerechtelijke Zone en de bepaling van de modaliteiten en arbeidskosten”).

European Marine Sand and Gravel Resources

will be incorporated in a new document for extraction from waters under management of the national government.

237 http://www.noordzeeloket.nl.

238 According to the Act on Polish Marine Areas, Ustaw z dnia 21/3/1991 r. o obszarach morskich Rzeczypospolitej Polskiej i administracji morskiej.

239 According to the Polish Mining Law, the state owns the seabed of the Internal Waters, the Territorial Sea and EEZ, and has the rights to explore and exploit mineral resources. In comparison, the rights of onshore mineral resources are dependent on the type of exploitation. The state has exclusive rights of the mineral resources found beneath the surface (and exploited by underground mining), whereas landowners have the rights on superficial mineral resources (exploited by open pits).


243 Under the Article 34 of the Act on Polish Marine Areas.

244 Article 33 of the Act on Polish Marine Areas.


247 Ustawa o dostepu do informacji o środowisku i jego ochronie oraz o oczekaniu odzyskanymi na środowisko http://www.ms.gov.pl/plakty_prewnie/samswyty/94.27.96.shtml

248 To ensure integrated planning and implementation of Belgium’s National Policy on Oceans, see also http://www.un.org/envt/gov真情/2022/01/2001-05.html#oceans.

249 Art. 1 of the Royal Decree of 15/8/2000 installed a Consultative Commission charged with the co-ordination between the different parts of the administration concerned with the management of the exploration and exploitation of the Continental Shelf and the Territorial Sea and the fixation of modalities and working costs (“Koninklijk besluit tot instelling van de raadgevende Commissie voor de administratie betreffende de exploitatie en onlast van de Rijksomgeving, de Hadelijke Zeerechtelijke Zone en de bepaling van de modaliteiten en arbeidskosten”).
the exploration and exploitation of marine non-living resources between several competent national departments.

Article 3 of the Belgian Continental Shelf Law, together with provisions of the EEZ and MMM Acts set out the legal framework for MA exploration/exploitation. Generally, the exploration and the exploitation of the mineral resources of the seabed and subsoil are subject to a concession regime, which requires environmental impact studies. The Royal Decree of 19/2/2004 prescribes the content of EIAs and relevant procedures concerning the exploration and exploitation of mineral and other non-living resources of the territorial sea and continental shelf.

Management of MA extraction from the Belgian waters is primarily exercised through the Federal Public Service for Economy. SMEs, Self-employed and Energy, the Federal Public Service for Health, Food Chain Safety and Environment and MUMM which represents the relevant Federal Ministry and is responsible for marine environmental protection from marine activities and resource assessment. The MA activities are monitored both at the operational level in order to assess compliance with the prescribed terms of the licence and at the environmental impact level with physical and ecological monitoring of the immediate area of MA extractions as well as neighbouring areas that could be potentially affected.

It appears that changes to the Belgian legislation are under consideration, but no further details are, at this stage, available.

Greece
The national government ("Εθνική Κυβέρνηση"), provincial governments ("Περιφέρειες") and counties ("Νομοί") perform different levels of public administration with regard to the environment. Property rights with regard to the seabed are vested in the State, forming part of the public domain; marine mineral resources are also the exclusive property of the state.

The national government has overarching jurisdiction in the marine areas, including the coastal strip; however, some of its powers are devolved to the lower levels of administration (counties). Aggregate extraction is regulated both onshore and offshore through a series of aggregate extraction laws, which also define the constitution of the county committees, which decide about the granting of MA extraction concessions. In the decision-making, other administrative authorities are also involved, such as the Ministry of Public Works, Planning and Environment ("ΥΠΕΞΑΕ"), and the Fisheries Directorate of the Ministry of Agriculture.

An EIA is a necessary prerequisite for the granting of an extraction licence. However, since there are no national guidelines on the content of the EIA concerning MA extraction, the quality of EIAs carried out by independent consultants on behalf of MA companies has been very variable.

**SUMMARY AND CONCLUSIONS**

All eight EU Member States considered here are under wide-ranging obligations to protect and preserve the marine environment based on the relevant provisions of the UNCLOS 1982, to which these States are Contracting Parties. Requirements laid down by the OSPAR, Helsinki, Barcelona and Espoo Conventions need also to be complied with by those States which are Contracting Parties to any of these Conventions (Table 1). Concerning MA extraction and its management, the OSPAR guidelines, drafted by ICES (ICES, 2003b), are of particular significance, as well as the HELCOM Recommendation 19/1 on "Marine Sediment Extraction in the Baltic Sea". Under the Barcelona Convention, there are no specific guidelines for the management of MA extraction: the Offshore Protocol to the Convention, which provides for research/monitoring surveys concerning the effects of any proposed activities on the marine environment, has not yet entered into force.

Although in all the considered States, the central government appears to have the overarching responsibility for MA extraction and licensing, in some States (e.g. the UK, Spain, Germany and Greece) much of this responsibility has been devolved to lower levels of administration. The regulatory framework relevant to MA extraction differs, as in some States there is specific regulation regarding MA exploitation, whereas regulation in other States seems to be applicable to both land- and marine aggregates (e.g. in Germany).
Regulation in the UK differed, until earlier this year, significantly from that in all other States considered here, as MA dredging used to be administered through a non-statutory procedure (interim Government View Procedure). New statutory regulations have now been enacted in respect of MA operations in English, Welsh and Northern Irish waters, as well as on the UK continental shelf; statutory Regulations have not yet been enacted in respect of Scottish waters, but are expected to be adopted soon. If and when legislative changes, based on the proposals in the White Paper for a Marine Bill, are adopted in the U.K., the regulatory landscape for MA operations may change further.

Some States (e.g. the UK, the Netherlands) have laid down particular policies and guidelines concerning marine aggregates. For example, there is a UK policy towards the increased use of recycled material\(^{259}\), the Dutch government encourages the use of marine dredged material\(^{260}\) and Spain allows marine aggregate extraction only for the purpose of beach creation/replenishment.

National legislation must be compliant with the requirements of any relevant secondary European legislation, in particular the Environmental Impact Assessment Directive, as amended (Directive 85/337/EEC as amended by Directives 97/11 EC and 2003/35/EC), which is the most significant regarding the administrative decision-making procedures for the approval of MA projects. The Directive has been transposed into national legislative systems in the form of separate statutes (e.g. Poland, Spain, Germany, France and the Netherlands) or incorporated into marine extraction regulation acts (e.g. Belgium and, very recently, the UK). Although all the Member States considered here prescribe environmental impact assessments of the extraction sites as a prerequisite to extraction licence granting\(^{261}\) as well as physical and ecological monitoring of the extraction sites following the commencement of the dredging activities, only few of the Member States considered (e.g. the UK and the Netherlands) appear to have published national guidelines on the content and scope of MA extraction-related EIAs. In addition, the quantity and quality of MA reserve and operation data held by the considered States varies widely, with the most modern and uniform data sets held by the UK, the Netherlands and Belgium (see also Velez-Grakis et al., this volume).

This paper only provides a relatively general overview over the regulatory regime governing MA operations in some EU Member States. This in itself, however, has not been an easy task. As an incidental finding, this review, relying to a considerable extent on published information and electronically available sources in the public domain, has shown that it is rather difficult to access accurate, up to date and complete information on administrative structures, regulations, procedures and practice pertaining to the authorization of MA extraction. In many instances, information available on the websites of the diverse relevant regulatory bodies is out of date, incomplete or incoherent\(^{262}\). As a result, it is rather difficult to properly assess whether and to which extent the various environmental protection requirements and guidelines arising from international conventions as well as the pertinent European legislation have been complied with. Considered analysis of national regulatory frameworks for MA extraction in the light of existing international requirements has not been possible within the scope of this contribution. However, while further research in this area is clearly required, the results of the present review suggest that there are a number of areas for improvement. In particular, it would appear appropriate that rules, regulations and procedures in relation to MA licensing within the EU are more streamlined, transparent, and uniformly consistent with international obligations then seems to be the case at present. Improved transparency of regulation would potentially serve the interests of effective protection of the marine environment, but could also benefit commercial stakeholders in terms of ensuring competitiveness and an equal playing field throughout the EU.

The ‘Blue Book’, recently published by the European Commission in response to its wide-ranging consultations on an integrated maritime policy for the EU\(^{263}\) appear to be encouraging in this respect, in particular as concerns the proposed streamlining of maritime spatial planning as a tool for the sustainable development of marine areas and the establishment of an appropriate marine data and information infrastructure.

In this context, the potential relevance of Council Directive 2003/4/EC on Freedom of Access to Information of the Environment should also be noted. Under the Directive, EU Member States are, inter alia, required to publish, if possible in electronic form, a wide range of relevant environmental information, including (a) “international, national or local legislation” and “policies, plans and programmes” relating to the environment; (b) environmental data derived from monitoring activities; (c) periodic reports on the state of the environment; (d) “authorisations with a significant impact on the environment” and (e) “environmental impact studies and risk assessments” on elements of the environment set out in the Directive, such as “coastal and marine areas”. Effective national implementation of these aspects of the Directive would play an important role in providing better access to information on rules, proce-
dures and practices governing MA extraction. This, in turn, would assist in monitoring compliance with the requirements of the multi-layered legal framework for the protection of the marine and coastal environment and, ultimately, benefit environmental protection efforts. For the time being, however, the difficulty in identifying, for the purposes of this review, accurate, complete and up-to-date information on national rules, practices and procedures relevant to MA operations suggests that adequate implementation of the Directive, in accordance with its aims, has not yet been achieved.

ACKNOWLEDGEMENTS

This review has been funded through the EC-TMR EUMARSAND Project (EUMARSAND Research Training Network, HPRN-CT-2002-00222). The authors would like to acknowledge the whole EUMARSAND team who provided basic information. Special thanks are due to Adolfo Uriarte, who gave additional material concerning the Spanish regulation, Cristina Mutiu, who provided additional information on the French regulation and Ms Marien Boers (Rijkswaterstaat), who kindly answered questions and commented on a text concerning The Netherlands.

LITERATURE CITED


