SRU German Advisory Council on the Environment

Environmental Report 2012
Responsibility in a finite world

Chapter 8:

Cross-sectoral marine protection

June 2012

Forword

This is a chapter of the Environment Report 2012 on "Responsibility in a finite world" published by the German Advisory Council on the Environment in June 2012. Guiding principle of that report is that environmental limits should be taken seriously. Unlimited physical growth is not possible in a finite world. This means that the dramatic reduction of our resource and energy use and their environmental impacts are becoming a key question of the 21st century. The report has eleven focal themes[1], ranging from the new growth debate, the protection of important ecosystems such as peatlands, forests and oceans to a strengthening of integrated environmental protection.

With its Environmental Report 2012, the SRU extends the perspective beyond the energy transition towards other important future-oriented issues in German and European environmental policy. Using a "horizon scanning" approach, the seven council members of the SRU identify important unresolved problems and point towards specific options for political action. The starting point of the report is that serious impacts for economy and society have to be feared if safe planetary boundaries and environmental limits are being exceeded. Exploiting all potential for decoupling economic growth and environmental impact is therefore a matter of priority. Such an innovation strategy would offer at the same time considerable economic opportunities for German industry.

Analysing a number of intractable problems, the SRU highlights the potential for a reduction of environmental impacts, for example:

– The use of metallic and mineral raw materials can be reduced, for example through systematic introduction of closed-loop processes. The SRU proposes in this context mandatory deposit schemes for selected electronic devices. Raw material extraction – which tends to be very energy intensive – could become more climate-friendly if ambitious reduction targets are set for the European emissions trading system (the EU 30 % target for 2020) and if exemptions are cut back.

– Even the still growing goods transport could meet ambitious climate policy targets through a comprehensive electrification on the basis of renewable electricity. In addition to a shift from road to rail, the option of an overhead-cable system for electric-powered HGVs ("trolley trucks") should be seriously pursued. The technology has already been tested in demonstration projects.

– In the area of food, policy should also provide effective incentives for decoupling. Bringing down food losses by 50 % until 2025 could decrease the environmental impact of our food consumption. Moreover, the high meat consumption which has equally negative impacts on the environment and on health, should be significantly reduced. Abolishing the reduced rate of value-added tax on animal products and introducing a tax on saturated fatty acids are therefore options to be investigated.

Despite this large untapped potential, a sufficient degree of decoupling may not be achievable. As part of a precautionary strategy, policy and society should therefore also reflect on conditions of social and political stability under conditions of low economic growth.

Ecosystems such as forests, oceans and peatlands do not only supply important resources, energy and food, but they also make important contributions to climate protection and provide other ecosystem services, including habitats for many species. These services, which are not rewarded by the market, are under threat unless economic pressures are reduced. German forests, for example, may soon reach a point where they release more greenhouse gases than they store. For this reason the SRU recommends introducing limits on forest biomass use to secure the long-term status of forests as carbon sinks. In addition, a comprehensive and integrated monitoring should be established as an early warning and evaluation system.

Environmental limits can only be observed if the remit and authority of environmental policy vis-a-vis other policy areas are considerably strengthened. As a basis for this, the SRU recommends the establishment of an encompassing national environment programme with ambitious targets which would give a new impetus to other policy areas.

---

[1] The Environmental Report covers eleven topics: the new growth debate, decoupling prosperity from resource use: metallic and mineral resources, food consumption as a policy issue, freight transport and climate protection, mobility and quality of life in urban agglomerations; appreciating the value of ecosystem services: environmentally sound use of forests; peatlands as carbon sinks, cross-sectoral marine protection; reinforcing integrative approaches: Integrated environmental protection: the example of industrial permitting, integrated monitoring, environmental and sustainability strategies.

Contents

8 Cross-sectoral marine protection 3

8.1 Special challenges in the protection of the marine environment 3

8.1.1 Use and pollution of Germany's marine waters 3

8.1.2 Horizontal and vertical coordination as a challenge for marine environment protection 6

8.1.3 The ecosystem approach 7

8.2 Green Paper and Blue Paper on the European maritime policy 8

8.3 The Marine Strategy Framework Directive as a central tool 9

8.3.1 The concept of the Marine Strategy Framework Directive 9

8.3.2 Implementation of the directive in Germany 12

8.3.2.1 Institutional and personnel requirements 12

8.3.2.2 Progress with implementation 12

8.3.3 Cooperation at European level and implementation of a regional approach 15

8.3.4 Embodiment of marine protection in relevant sectoral policies 16

8.3.5 Links to and comparison with the Water Framework Directive 17

8.4 Protected areas and their connection with the Marine Strategy Framework Directive 18

8.5 Instruments for integrating divergent interests in marine areas 20

8.5.1 Maritime spatial planning 20

8.5.2 Integrated coastal zone management 24

8.6 Summary of recommendations 24

8.7 Bibliography 27

List of figures and tables

Figure 8-1 Spatial distribution of present and planned uses in the German exclusive economic zone (EEZ) of the North Sea 4

Figure 8-2 Eutrophication of the Baltic Sea 5

Figure 8-3 Spatial plan for the German Exclusive Economic Zone in the North Sea 21

Figure 8-4 Spatial plan for the German Exclusive Economic Zone in the Baltic Sea 22

Table 8-1 Draft of initial assessment of the German North Sea and Baltic Sea 14

Table 8-2 Sand and gravel extraction in Natura 2000 areas within the Exclusive Economic Zone of the North Sea 20

8 Cross-sectoral marine protection

8.1 Special challenges in the protection of the marine environment

445. Germany's marine waters are adversely affected by a large number of anthropogenic encroachments. These impacts are due to a wide variety of polluters, such as fisheries, agriculture, shipping, resource extraction and tourism, and also land-based industries. But marine protection faces special challenges not only as a result of the many different sources of pressures, but also because the seas are subject to many different legal regulations and policies, ranging from local to international level, depending on the use in question. Until recently there was no separate strategy concerning marine protection as a whole at national or European level. In order to change this situation, a thematic strategy for the protection of European marine waters was initiated in 2005, leading in 2008 to the Marine Strategy Framework Directive 2008/56/EC (MSFD). Among other things, this directive created an obligation to implement protective measures at national and regional level.

In its special report "Marine Environment Protection for the North and Baltic Seas", the German Advisory Council on the Environment (SRU) showed in detail that an overarching, preferably European, protection strategy was necessary to solve the existing problems in the field of marine protection (SRU 2004). A similar line was taken by the SRU's comments on the European marine strategy in 2006, which pointed out the weaknesses of the approach suggested at that time by the European Commission for a marine strategy directive (SRU 2006). Many of the weaknesses of the proposed strategy which were identified then still apply to the MSFD as since adopted.

446. The MSFD nevertheless offers considerable opportunities, because it pursues a comprehensive protection approach in the sense of an ecosystem view. This chapter is concerned in particular with the special challenge of coordinating the relevant sectoral policies with regard to marine protection objectives. The focus here is on how marine protection issues can be more closely integrated in sectoral policies under the conditions prevailing at present. In particular, the chapter analyses the strengths and weaknesses of the MSFD and draws up specific recommendations as to how implementation of the directive – and also other instruments of marine policy such as maritime spatial planning and marine protected areas – can help to advance marine protection on a broad front.

8.1.1 Use and pollution of Germany's marine waters

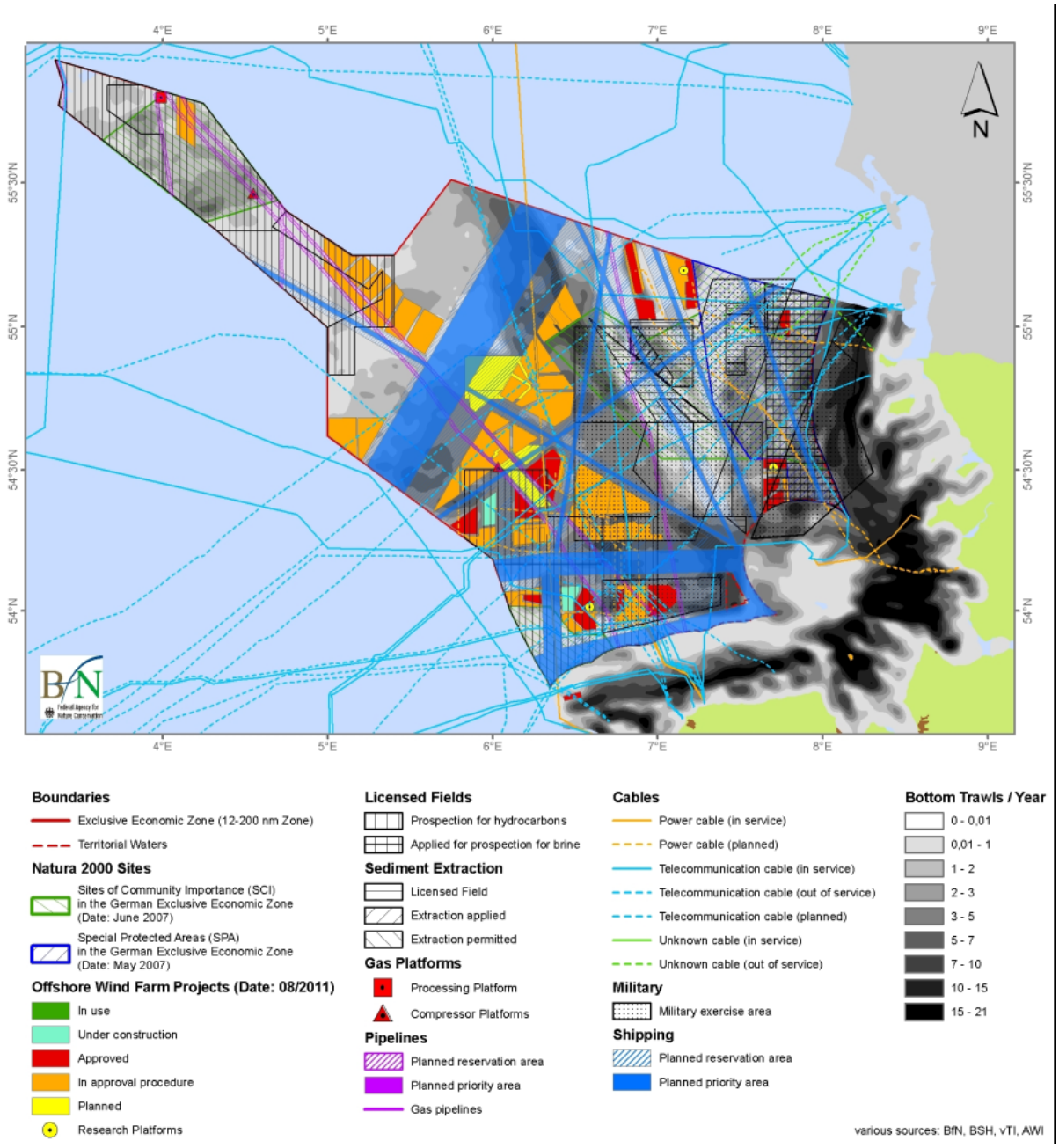
447. With increasing industrialisation, European marine waters – and especially their coastal regions – have developed from untouched natural regions into marine economic zones. As such, they perform a variety of functions, e.g. as recreation areas, transport routes and energy production zones, and also as a source of foods, pharmaceutical active substances, fossil fuels and construction materials. However, they also act as the ultimate sink for nutrients and a wide range of pollutants. Some uses of the seas, for example shipping, will probably increase in intensity. The southern North Sea and the connections between the North Sea and Baltic Sea are already among the most heavily frequented shipping routes in the world (HELCOM 2006). Other economic activities such as alternative forms of power generation – especially offshore wind energy – are under development or on the point of large-scale introduction (SRU 2011b; Fig. 8-1).

448. The increasing pressure from the many uses is responsible for pollution of marine ecosystems sometimes on a considerable scale. This is particularly true of the continuing high level of nutrient inputs from the agricultural sector, the adverse effects caused by fisheries, and multiple pressures due to shipping. The latter is responsible for emissions of atmospheric pollutants and greenhouse gases (soot, oxides of nitrogen (NO_x), sulphur dioxide (SO_2) and carbon dioxide (CO_2)), noise emissions, operational release and illegal disposal of oil residues, inputs of waste and antifouling agents, and the introduction of alien species via ballast water in particular (OSPAR Commission 2010b; STEELE et al. 2010; UBA 2010, p. 2; for the regulation of anthropogenic noise inputs into the marine environment, see MARKUS 2010). Special attention is paid to local risks arising from accidents involving tankers. There are also further encroachments due to maritime activities, e.g. oil and gas production, sand and gravel extraction, and dumping of sediments. Even if the trend of pollutant inputs from rivers is encouraging, numerous land-based industries continue to contribute to marine pollution through atmospheric inputs. At the same time the importance of diffuse pollutant inputs is growing, e.g. through the use of pharmaceutical products. Inputs of waste (especially plastic waste) into the seas by a wide range of polluters is one of the problems that have only recently attracted attention (OSPAR Commission 2010b; SRU 2008; HELCOM 2010a; 2010b).

449. The pressures mentioned are also responsible for the ongoing decline in biodiversity in the North Sea and Baltic Sea. The North Sea is particularly affected by environmentally harmful fishing activities such as beam trawling. Another problem is the continuing high by-catch levels of non-target species (SRU 2011a). This is manifested, for example, by the marked decline in sensitive benthic organisms such as soft corals and rays in the southern North Sea (OSPAR Commission 2010b). In the case of the Baltic Sea, by contrast, the focus is on inputs of nutrients, especially from land-based emitters such as the agricultural sector, which have led to marked eutrophication of this peripheral sea (HELCOM 2009; Fig. 8-2).

Figure 8-1

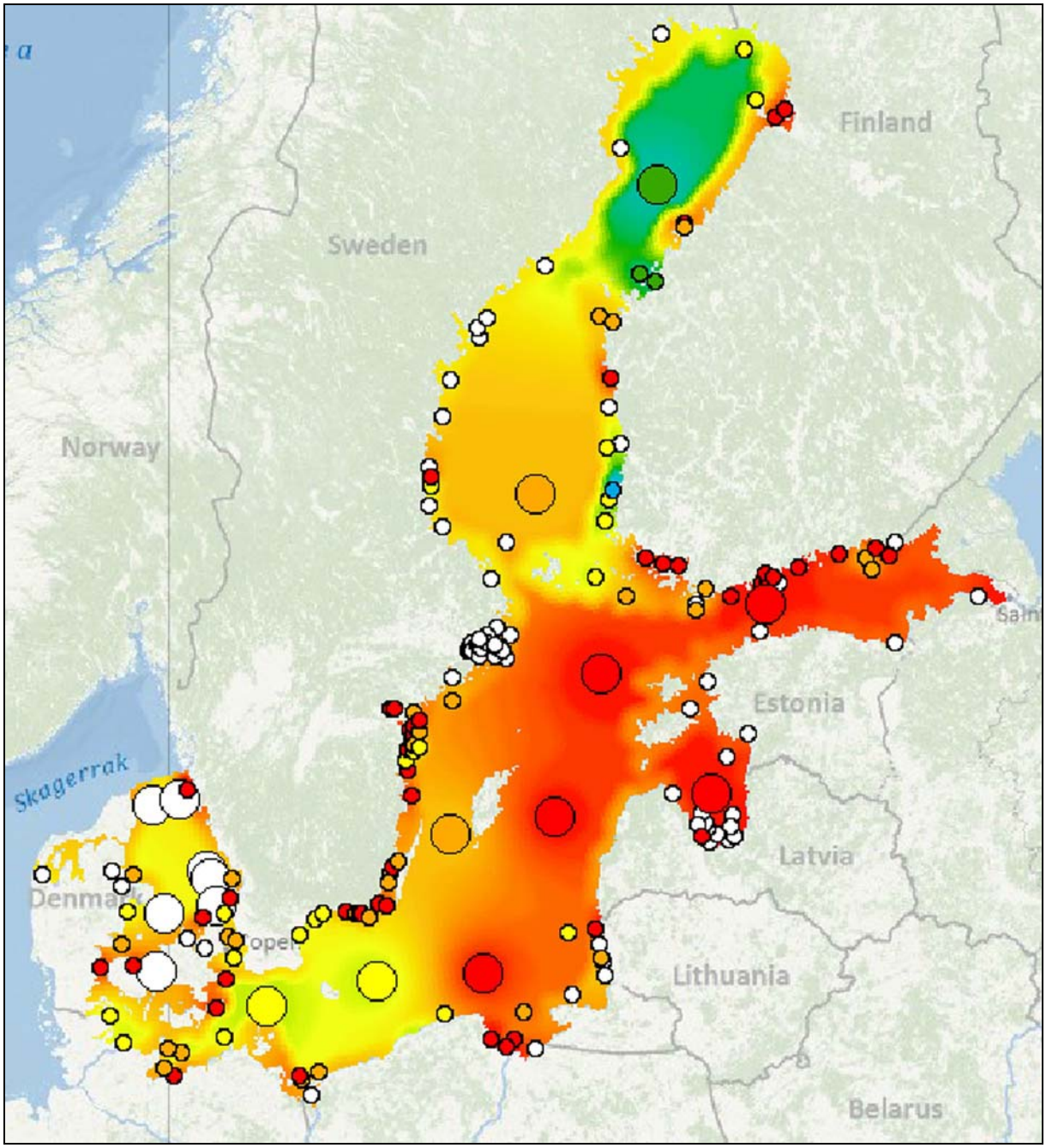
Spatial distribution of present and planned uses in the German exclusive economic zone (EEZ) of the North Sea



Source: MERCK 2011

Figure 8-2

Eutrophication of the Baltic Sea



* Eutrophication increases from blue, via green and yellow, to red

Source: HELCOM 2010a, modified

As a result, according to the latest HELCOM report (Helsinki Commission of the Convention on the Protection of the Marine Environment of the Baltic Sea Area), there are large areas of the Baltic Sea with oxygen-free zones close to the seabed in which virtually no life is possible (HELCOM 2010a). One special local problem is chemical ammunition, which was sunk after the Second World War, especially in the Baltic Sea and the Skagerrak and Kattegat. In the course of time, its exposure to the elements may release – or in some cases has already released – pollutants such as arsenic compounds.

The environmental problems are joined by the impacts of climate change, especially the warming and acidification of the seas. Over the last fifty years there has been a steady increase in the mean temperature of the North Sea, and this has been associated with the immigration of thermophilic species and the northward emigration of thermophobic species (ICES, no year specified).

8.1.2 Horizontal and vertical coordination as a challenge for marine environment protection

450. The diverse environmental pressures on the seas arise from a number of widely differing economic uses. As an example, this section discusses the field of tensions and constraints between the interests of the shipping sector and the requirements of marine protection. However, similar conflicts exist in other areas, e.g. fisheries (SRU 2011a), agriculture, oil and gas production, sand and gravel extraction, offshore wind energy (SRU 2011b), and the laying of submarine pipelines and cables (STEELE et al. 2010).

Marine shipping forms the backbone of the maritime industry, which also embraces the economic areas of ports, shipyards, shipping lines, the supply industry and marine technology (LANGE and BRANDT 2009). The proportion of global trade transported by sea is over 90 percent (IMO 2012, p. 7). Even in the EU, 90 percent of foreign and 40 percent of domestic trade goes by sea (European Commission 2009). Although in Germany the marine shipping share of total freight traffic was barely 7 percent, in view of the longer distances involved the percentage of total traffic performance was considerably higher (Statistisches Bundesamt 2011). The marine traffic forecast of the Federal Ministry of Transport, Building and Urban Affairs (BMVBS) also expects turnover in Germany's seaports to more than double by 2025 (PLANCO Consulting 2007, p. 1).

Marine shipping makes a considerable contribution to environmental pollution of the seas (Para. 448) and is to a large extent subject to international regulations. The United Nations Convention on the Law of the Sea (UNCLOS) assigns a special status to marine shipping by guaranteeing its freedom and giving priority to main shipping routes. Shipping enjoys a position of pre-eminence under international law. However, it is also bound by numerous international obligations to take measures to protect the environment (KACHEL 2006; KNUDSEN and HASSLER 2011). The most important convention of the International Maritime Organization (IMO) is the International Convention for the Prevention of Pollution from Ships, of 2 November 1973 (MARPOL). Other IMO conventions relate to marine pollution by oil, waste and hazardous substances, antifouling agents, ballast water control, and ship recycling. They are supplemented by regional conventions, of which the rules laid down under the OSPAR Convention (Convention on the Protection of the Marine Environment of the Northeast Atlantic) and the Helsinki Convention (Convention on the Protection of the Marine Environment of the Baltic Sea Area) are particularly relevant for Germany. At EU level, Directive 1999/32/EC relating to a reduction in the sulphur content of certain liquid fuels (amended in 2005) was passed to restrict the emission of atmospheric pollutants; it is currently under revision.

Generally speaking, it is particularly difficult to lay down environmental standards for shipping at international level. In many areas it has so far proved impossible to reach agreement between the 170 member states of the IMO. For example, there is still a lack of ambitious environmental standards in this sector for emissions of CO_2, particulates and NO_x (IMO 2012). The scope for individual coastal states to take the initiative themselves and introduce environmental regulations for marine shipping is limited by the pre-eminent position of shipping under international law.

451. The difficult position of marine protection interests vis-à-vis economic interests is also explained by the economic significance of the maritime industry. With a total economic output of around €85 billion it is of great significance both regionally and in terms of the global economy (BMVBS 2011, p. 13). In view of the increasing pressure of competition, especially from outside Europe, one central objective of maritime economic policy is to maintain competitiveness and safeguard jobs in the marine shipping industry (European Commission 2009). The central objective of the German government's maritime policy is to maintain and strengthen Germany as a maritime location (Deutscher Bundestag 2011b, p. 2). This is reflected by the regulations for spatial conflicts at sea: The spatial plan for the North Sea aims to stress the economic importance of shipping and its pre-eminent position under international law, and to maintain the competitive strength of the maritime industry. Accordingly the main shipping routes, which are made up of the traffic separation schemes and other much frequented routes, form the basic framework for maritime spatial planning on which other uses in the exclusive economic zone (EEZ) have to be based.

452. Marine protection is subject to a wide variety of policies and fields of law. In addition to those already mentioned, these include fisheries policy, energy policy, agricultural policy, substance regulation policy and air quality control policy (STEELE et al. 2010). However, conflicts do not only exist between marine protection and economically oriented sectoral policies (SRU 2009; 2011a), but also between different economic objectives. Coordination of all relevant sectoral policies would be necessary for a comprehensive and integration-oriented approach to protection. However, the relevant departments largely work independently of one another. As a result, national and international technical regulations are highly fragmented and are based on sectoral logic and objectives which in some cases are conflicting or contradictory. Past experience has shown that sectoral solutions and regulations frequently fall short of the mark when it comes to effective marine protection. On the whole, insufficient importance is attached to marine protection, and the relevant policy areas do not accept enough sectoral responsibility for marine protection objectives (SRU 2004).

Successful integration of marine protection objectives in sectoral policies would thus require an effective regulatory framework that defined action targets which can be operationalised (cf. Section 11.3.6). However, the necessary overarching coordination and the necessary political prioritisation of objectives with regard to marine waters suffer from the fact that political initiatives frequently come to a halt at the departmental boundaries

of ministries and public authorities. The initiative for a European maritime policy is a first step on the way to overcoming this problem (see para. 457 ff.). The MSFD (see para. 463 ff.) as the environmental pillar of European maritime policy embodies the hope that an integrating, cross-sectoral policy will strengthen the interests of marine protection and give representatives of marine protection greater scope compared with the influential economic interests (van HOOF and van TATENHOVE 2009, p. 729; cf. Section 11.1 and Section 11.3.6). It remains to be seen whether this hope will be fulfilled (KNEFELKAMP et al. 2011, p. 427).

453. Another challenge is the transboundary character of both the use of the seas and their pollution. The protection and use interests associated with the sea are inter-related, not only horizontally (across sectoral policies), but also vertically across several hierarchical levels (international, European, national, and even sub-national). This intertwining involves great challenges not only when it comes to reaching agreement on marine protection measures, but also for their monitoring and enforcement (STEELE et al. 2010). Although various international and regional conventions have been adopted to prevent adverse impacts on the marine environment, for example the UN Convention on the Law of the Sea and the OSPAR and Helsinki Conventions, the problem of resistance by business interests to the creation or tightening of environmental standards is joined by the difficulty of agreeing on common standards at international level. The work carried out in connection with the regional marine protection conventions has a special position. In the past these have frequently played a pioneering role compared with the EU, because the negotiating process there has often developed a dynamic of its own, resulting in the achievement of quite far-reaching decisions on marine protection. On the other hand it has not proved possible under the OSPAR and Helsinki Conventions to take any decisions reinforced by sanctions (SRU 2004). In general, the regional conventions and other international conventions lack ways and means of ensuring national compliance (SRU 2004; ANIANOVA 2006; KNUDSEN and HASSLER 2011).

8.1.3 The ecosystem approach

454. In addition to integrating marine protection in various departmental policies and ensuring transboundary coordination, a comprehensive view of the sea as a natural region and of its uses is also of great importance for effective marine protection. The focus is therefore on the "ecosystem approach".

According to the Convention on Biological Diversity (CBD), as given concrete shape by Decision V/6 of the Fifth Conference of the Parties in Nairobi in 2000, the ecosystem approach is taken to mean a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (UNEP 2000). The application of the ecosystem approach will help to reach a balance of the three objectives of the Convention: conservation; sustainable use; and fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. It is to apply appropriate scientific methodologies focused on levels of biological organisation, which encompass the essential structure, processes, functions and interactions among organisms and their environment. Humans are regarded as a part of the ecosystem. 'Ecosystem' means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

At the World Summit for Sustainable Development in Johannesburg in 2002, it was agreed that the ecosystem approach was to be applied to the sustainable use of oceans and seas by 2010 (Heinrich-Böll-Stiftung 2003; United Nations 2002).

455. The OSPAR and Helsinki Conventions have committed to using the ecosystem approach to the management of human activities in marine regions (OSPAR Commission 2010a; HELCOM and OSPAR Commission 2003). Much like the CBD, they see the ecosystem approach as the comprehensive integrated management of human activities – based on best available technology and the latest research findings – in relation to ecosystems and their dynamics (HELCOM and OSPAR Commission 2003). However, as the OSPAR Commission rightly points out, the ecosystem approach cannot be implemented on a short-term basis because this requires extensive knowledge about the seas and the pressures they are subject to (OSPAR Commission 2010a). This therefore has to be regarded as a process which involves moving steadily closer to the actual goal in the light of the changing body of knowledge (HELCOM and OSPAR Commission 2003). For this reason the practical implementation can only take place on a step-by-step basis. Parts of this process are the establishment and coordination of ecological criteria and objectives and the associated indicators, the further development of management and research, and the constant updating of knowledge about ecosystems and the pressures they are subject to (OSPAR Commission 2010a).

456. There is a large measure of agreement on both the definition of the ecosystem approach and commitment to use it. The OSPAR Commission and HELCOM have already drawn up initial plans for its implementation. The MSFD also calls upon the EU member states to implement the ecosystem approach in practice. The commissions of the marine protection conventions have rightly emphasised that this requires extensive data on marine ecosystems and their interactions and the pressures affecting them, and also a comprehensive monitoring programme. Both objectives are being pursued in the work of the OSPAR Commission and HELCOM and the implementation of the MSFD (para. 466).

8.2 Green Paper and Blue Paper on the European maritime policy

457. The idea of an integrated European maritime policy was first given concrete shape by the European Commission in mid 2006 in the Green Paper "Towards a future Maritime Policy for the Union: a European vision for the oceans and seas" (European Commission 2006). The resulting discussion process did not begin until after the European protection approach and the MSFD (para. 463 ff.) had already been set in motion, and must therefore be regarded as a largely independent political process. The intention of the Green Paper was to bring about closer coordination of the sectoral policies relating to marine waters. The focus was on use aspects. With regard to protection, explicit reference was made to the legal implementation of the maritime strategy and the MSFD. The Directorate-General for Maritime Affairs and Fisheries was responsible for the Green Paper; also involved were the six Directorates-General for the Environment, Enterprise and Industry, Transport, Energy, Regional Policy and Research. The five central chapters of the Green Paper relate to: use of the seas; the quality of life in coastal regions; tools for managing relations with the oceans; governance; and Europe's maritime heritage and maritime identity.

Objectives of European maritime policy

458. The Green Paper draws attention to the special importance of the seas as economic regions and sets out a large number of objectives for a European maritime policy. For example, it is to strengthen growth and employment in the maritime sector, but also ensure protection of the seas in accordance with the principles of an ecosystem approach. The Green Paper focuses on the intention to achieve use of the seas that is viable in the long term. It stresses that Europe can only profit from marine resources if these are not endangered by serious environmental impacts and over-exploitation. According to the Green Paper, this includes halting the decline in biodiversity due to pollution, climate change and overfishing by 2010. The Green Paper declares the intention of creating a dynamic and sustainable maritime economy and exploiting the full potential of the seas and their riches by using the resources in a sustainable fashion. The aim is to reconcile ambitious protection of the marine environment with the industrial sectors: shipping, industry, trade, tourism, energy, fisheries and marine research. Thus the aim of the Green Paper is to find the right balance between the economic, social and environmental dimensions of sustainable development. However, these declarations of intent with regard to sustainable and environmentally sound use are neither described in more concrete form nor accompanied by proposed measures.

Focus on integration

459. The Green Paper seeks to initiate a discussion process about the form an *integrated* European maritime policy should take. In view of the inadequate attention given to the interactions of sectoral policies, the European Commission sees a risk of failure to take coordinated measures, resolve conflicts of interests and use existing synergies.

However, the Green Paper makes few specific suggestions as to how to promote the merging of hitherto fragmented policies relating to the seas. It merely points out that the creation of a maritime identity – although it is not clear what this might be – could improve cooperation and coordination between the political sectors, and also with relevant stakeholders. It also states the objective of bringing about effective coordination and integration of the relevant policy areas at all levels and creating an integrated cross-sectoral and multidisciplinary European maritime policy encompassing all aspects of the seas and oceans. From this, however, it merely arrives at a requirement for all Member States to develop a separate framework for a cross-sectoral maritime policy and to jointly address the existing challenges across the various sectors and policy areas. It does not outline an EU approach to such integration or specify it in any detail, although institutional requirements would be possible at EU level because responsibility for maritime policy is spread over several councils (e.g. Fisheries Council) and directorates-general and is not adequately coordinated. It would also be possible make more specific suggestions for integration at the level of the Member States.

460. Nevertheless, the first outlines of a common maritime policy can be discerned in the Green Paper: it is to form the umbrella for the sectoral policies relating to marine waters. The thematic strategy for the marine environment (see para. 463) is to form the environmental pillar of this policy. Unlike the thematic strategy, the Green Paper did not lead to specific legislation proposals, but merely appended a Blue Paper on Maritime Policy which hardly lays down any legally binding requirements, but consists mainly of a collection of professions and intentions (van HOOF and van TATENHOVE 2009, p. 729 ff.; SRU 2008, para. 597; SALOMON 2009).

The Blue Paper resumes the objectives and integration-oriented approach of the European maritime policy introduced in the Green Paper. According to the Blue Paper, the maritime dimension is to be embodied in the various policies at the level of the EU, the Member States and the regional governments. In order to achieve appropriate dovetailing of policies, the action plan proposes joint measures, including a European marine monitoring network, a maritime observation and data network, and a recommendation to implement a maritime spatial planning system (see para. 507 ff.) and an integrated coastal zone management system (see para. 517 ff.). While these initiatives are generally to be welcomed, they are nevertheless primarily "soft" instruments, and the focus is on acquiring, merging and publishing data. They do not involve any joint further development of the various policy areas. What is lacking in particular is objectives for European maritime policy that are valid for all sectors.

Weaknesses of European maritime policy

461. European maritime policy addresses the use of the seas, and its central objective is to maintain their competitiveness in the spirit of the Lisbon Strategy. Its main focus is on supporting and strengthening maritime economic activities. Admittedly, the Green Paper attaches great importance to the seas not only as an economic factor, source of energy and resources and a space for traffic, but also as a factor influencing the climate and as a natural habitat. However, the importance of intact marine habitats is stressed wherever it is seen as a precondition for an economic use (UBA 2008a, p. 24). No attention is paid to those marine functions that go beyond purely economic (resource) use. No approach is developed which might guarantee coherence between the various fields of action and policy areas affecting the seas; or which suggests, for example, how it might be possible to advance the integration of marine protection in the relevant sectoral policies (SALOMON 2009).

Implementation in Germany

462. The action plan for the European maritime policy was implemented in Germany in 2011 in the Maritime Development Plan. The responsible ministry was the Ministry of Transport, Building and Urban Affairs (2011). However, this development plan is merely a summary of German activities and intentions in connection with economic activities, technology promotion, infrastructure measures, statutory regulations, protection and research activities in the maritime sector. For example, the development plan calls for integration-oriented and efficient implementation of the MSFD and implementation of the objectives and measures of the marine conventions, and also continued active participation in the latter. It does not, however, develop any new approaches, and especially not a holistic concept, for a German maritime policy.

8.3 The Marine Strategy Framework Directive as a central tool

463. In 2005, against the background of its Sixth Environment Action Programme, the European Commission published the Thematic Strategy on the Protection and Conservation of the Marine Environment (European Commission 2005), which was given more concrete shape in 2008 in the form of the MSFD.

8.3.1 The concept of the Marine Strategy Framework Directive

464. The MSFD is the central tool currently being used to shape marine protection at European level. The directive provides a framework within which the Member States are required to develop and implement strategies for protecting their marine waters.

Purpose of the directive

465. The purpose of the MSFD is to achieve good environmental status in Europe's marine waters by the year 2020. The good environmental status is defined quite ambitiously as: "the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations" (see Article 3 paragraph 1). The MSFD also makes reference to the ecosystem approach (see Article 3 paragraph 5). This approach is to be applied to the achievement or integrated assessment of good environmental status (see para. 481). The ecosystem approach is intended to ensure that the overall pressures due to human activities are confined to a level that does not affect the capacity of marine ecosystems to react to anthropogenic changes and at the same time permits the sustainable use of marine goods and services by present and future generations.

The directive establishes the framework for achieving good environmental status, with regard to timing, procedures and content.

Timetable for implementation

466. The Member States are called upon to implement their marine strategies in accordance with the following timetable:

- by 15 July 2012: an initial assessment of the current environmental status of the waters concerned, the determination of good environmental status on the basis of eleven qualitative descriptors, and the establishment of environmental targets and relevant indicators,
- by 15 July 2014: the implementation of a monitoring programme,
- by 2015: the development of a programme of measures, and
- by 2016: the practical implementation of the programme of measures for the relevant marine waters.

If the status of any of the marine regions or subregions is so poor that immediate action is necessary, the Member States should – if necessary in cooperation with one another – draw up an action plan which may include an earlier entry into operation of programmes of measures as well as possible stricter protective measures.

Three years after the publication of the programmes of measures, the Member States are required to publish an interim or progress report. Effective involvement of all interested parties is to be ensured during all specified procedural steps for implementing the strategies. In the course of transposition, the Member States are to observe the precautionary approach and the polluter-pays principle. The ecosystem approach is to be applied in the management of activities in marine waters. However, the directive fails to provide a concrete definition of the precautionary approach and the ecosystem approach.

Criteria and standards for determining good environmental status

467. In the MSFD, the European Commission has undertaken to assist the Member States with transposition (see Article 24 MSFD). To this end it has drawn up standards and criteria for determining good environmental status in marine waters; these were published in a decision on 1 September 2010 (European Commission 2010a). The purpose of this decision is to further differentiate the eleven descriptors of good environmental status that are mentioned in the directive (see box), and to specify relevant indicators that will help with practical implementation.

Descriptors in MSFD

1. Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.

2. Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.

3. Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.

4. All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.

5. Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.

6. Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.

7. Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.

8. Concentrations of contaminants are at levels not giving rise to pollution effects.

9. Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.

10. Properties and quantities of marine litter do not cause harm to the coastal and marine environment.

11. Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

In this decision the European Commission once again stressed that good environmental status requires that "*all relevant human activities are carried out in coherence with the requirement of protecting and preserving the marine environment and the concept of sustainable use of marine goods and services by present and future generations referred to in Article 1 of the MSFD"* (European Commission 2010a). For each descriptor it specifies up to six criteria, which are in turn to be described with the aid of indicators. All in all, the European Commission has laid down 29 criteria and 56 methodological standards for the eleven descriptors.

The requirements for Descriptor 3, which concerns the status of commercially exploited fish and shellfish, are unusual. This descriptor is the only one for which the European Commission has laid down not only criteria and standards, but also a concrete objective. For example it lays down for Criterion 3.1 "Level of pressure of fishing activity" and Indicator 3.1.1 "Fishing mortality" that good environmental status requires a fishing mortality (F) which is equal to or lower than the level capable of producing maximum sustainable yield ($= F_{MSY}$). For the same descriptor it also lists Criterion 3.2 "Reproductive capacity of the stock" and the associated Indicator 3.2.1 "Spawning stock biomass" (SSB). Full reproductive capacity exists where the spawning stock biomass ensures maximum sustainable yield. The inclusion of these two descriptions of good environmental status in the Commission's decision established maximum sustainable yield as the target or standard for good environmental status (see Annex B). In other cases, for example Descriptor 8 "Concentrations of contaminants", reference is made to existing legally valid standards, in this case in the Water Framework Directive 2000/60/EC (WFD) and the WFD daughter directive 2008/105/EC.

Programmes of measures

468. The Member States are called upon take account of existing Community legislation on marine protection in their programmes of measures, e.g. the WFD, the Urban Waste-Water Directive 91/271/EEC, the Bathing Water Directive 2006/7/EC and any future statutory provisions on environmental standards in the field of water policy or under international agreements.

In preparing their programmes of measures the Member States are also obliged to take account of their social and economic impacts and to perform impact assessments including cost-benefit analyses before introducing the measures.

Article 14 of the MSFD mentions exceptions which the Member States may put forward for total or partial failure to achieve the environmental targets and good environmental status. These include action or inaction for which the Member State concerned is not responsible, natural causes or force majeure, and also modifications or alterations to the physical characteristics of marine waters brought about by actions taken for reasons of overriding public interest which outweigh the negative impact on the environment. The latter could be used in the case of offshore wind farms or gas pipelines, for example (MARKUS and SCHLACKE 2009). In such cases, however, the Member States are required to take appropriate ad-hoc measures aimed at continuing to pursue the environmental targets and prevent any further deterioration in environmental status. However, they are

not obliged to take specific steps where there is no significant risk to the marine environment, or where the costs would be disproportionate taking account of the risks to the marine environment, and provided that no further deterioration is to be expected. Thus the exceptions mentioned can be used to justify failure to take measures.

Weaknesses of the directive

469. One of the main weaknesses of the MSFD lies in the fact that responsibility for implementing a protection strategy for European waters is to a large extent placed in the hands of the Member States and that only vague instructions are given for its implementation (SRU 2006). For example, the Member States that share a marine region or subregion are required to develop their strategies in cooperation with one another and also on a supra-regional basis, in order to ensure a coordinated and coherent approach. However, there are no clear instructions on how this is to be done. Neither does the directive specify any concrete marine environmental protection standards or instruments that the Member States must apply. Annex VI merely lists groups of measures. These include management measures to control the spatial and temporal distribution of activities in marine waters which argue in favour of establishing spatial planning in the marine waters. With regard to marine protected areas, attention is merely drawn in various places to their special importance (para. 497 ff.).

470. Another point of criticism is the fact that the framework directive itself – contrary to the claims made – does not provide a comprehensive protection approach (SRU 2006; SALOMON and KROHN 2006; KNEFELKAMP et al. 2011). It was foreseeable at an early stage that the national scope for implementing marine protection concepts to achieve good environmental status would soon reach its limits and would not be sufficient to take care of the main problems. In the opinion of the SRU it will become apparent upon the establishment of the programmes of measures, if not before, that the European marine protection strategy quickly reaches its limits with the framework directive alone, because the sectors particularly relevant to marine protection, such as fisheries, shipping and agriculture, are strongly regulated at international and European level (para. 492 f.).

With regard to fisheries, the MSFD actually makes explicit reference to the fact that measures to protect marine regions, including fishing bans, can only be taken in the context of the Common Fisheries Policy (CFP). Moreover, the hierarchy of norms and the system of competencies of Community law prevent fields of law such as the Common Agricultural Policy (CAP), CFP or shipping from being modified by Member States' programmes of measures (MARKUS and SCHLACKE 2009). At any rate the MSFD nevertheless points out that the objectives laid down in the course of implementation should be taken into account in the forthcoming reform of the CFP. The MSFD also gives the Member States the opportunity to inform the European Commission if a problem cannot be solved by national measures. The Member State may then make recommendations about measures at European or international level to solve the problem (Article 15 MSFD; see also para. 493).

471. As mentioned above, cost-benefit analyses should be undertaken for all measures (Article 12 paragraph 3(2) MSFD). However, since the directive lays down the objective of good environmental status, it would be appropriate to perform cost-effectiveness analyses and not cost-benefit analyses (SRU 2006). This also opens up a certain discretionary latitude which could lead to a reduction in the importance of environmental interests, especially because it is very difficult and expensive to assess the benefits of biodiversity conservation for future generations as well. Here there is a lack of generally established methods, which opens up considerable freedom of action in practical implementation. By contrast, the costs of a measure are easy to determine. The highly complex assessment of conservation measures may also considerably delay the measures.

472. The earlier work by the regional marine protection conventions (e.g. OSPAR and Helsinki Conventions) is not mentioned explicitly in the MSFD as a basis for developing national marine protection strategies. The directive does however point out that in drawing up marine strategies the Member States are to take existing programmes and measures as a basis, including those developed within the structures of the regional marine conventions (see Article 6 MSFD). Similarly, the objectives already agreed at national, European and international level for the marine regions and subregions are to be taken into account when laying down the environmental objectives (see para. 489). However, the directive in its present form has missed the opportunity to contribute to implementing the objectives and agreements of the international marine conventions with the aid of the legally binding character and enforceable sanctions of European law (SALOMON and KROHN 2006).

Conclusions

473. Although the MSFD points out that it seeks to contribute to the coherence and integration of environmental issues in all relevant policy areas, it still does not provide an integrating overall concept that resolves the existing deficits of the marine protection policies that are fragmented both sectorally and at European and national level (SRU 2006). The MSFD nevertheless offers considerable opportunities. In particular, the strength of the MSFD lies in the fact that it requires the Member States to develop and implement comprehensive marine protection strategies in accordance with an ambitious timetable. It is gratifying to note that the eleven qualitative descriptors mentioned in the directive, which are supplemented by standards and indicators, cover the entire spectrum of marine pollution, and the Member States are thus called upon to take protective measures in these fields of action (KNEFELKAMP et al. 2011). When transposing the

MSFD into German law it will be important to seize these opportunities in order to advance the cause of ambitious marine protection.

8.3.2 Implementation of the directive in Germany

474. As early as 2008 the German government adopted a "National Strategy for Sustainable use and Protection of the Seas", in which it makes a commitment to the objectives of the MSFD and speaks out in favour of comprehensive conservation of the seas (BMU 2008). The MSFD was transposed into German law by the Act implementing the Marine Strategy Framework Directive. Amendments were also necessary to the Federal Water Act (WHG), the Federal Nature Conservation Act (BNatSchG) and the Environmental Impact Assessment Act (UVPG). Furthermore, in October 2011 the drafts of the reports scheduled for mid 2012 on the initial assessment, the determination of good environmental status and the establishment of environmental objectives for the German Baltic and North Sea coasts were released into the public participation procedure (see para. 478 ff.).

8.3.2.1 Institutional and personnel requirements

475. In Germany, lead management for the implementation of the MSFD is in the hands of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). Other responsible departments are the Federal Ministry of Transport, Building and Urban Affairs (BMVBS), the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV), and the following subordinate authorities: Federal Environment Agency (UBA), Federal Agency for Nature Conservation (BfN), German Maritime and Hydrographic Agency (BSH), and the Johann Heinrich von Thünen Institute (Federal Research Institute for Rural Areas, Forestry and Fisheries (vTI)). Moreover the federal Länder situated on the Baltic and North Sea coasts also have competencies relating to the use and conservation of marine waters.

Implementing the MSFD involves a great deal of work for the competent authorities which cannot be handled without additional human resources despite great personal dedication on the part of the staff. However, no additional human resources are available in Germany for dealing with reporting requirements and other implementation measures, because financial support for transposition has so far been strictly rejected (Deutscher Bundestag 2011a). The work is therefore being handled by personnel who are really needed for other tasks of a similarly urgent nature.

In view of the large number of different authorities involved in transposition, and in view of the requirement in the MSFD to name one or more competent bodies for cooperation and coordination (Article 7 paragraph 1 MSFD), a secretariat is now being set up – on the basis of an administrative agreement – at the BSH in Hamburg. This secretariat is to coordinate the implementation of the directive (Deutscher Bundestag 2011a). This will ensure greater institutionalisation of the largely informal cooperation between the authorities involved in the implementation of the MSFD. The individual rights and duties will be balanced and set down in writing when the secretariat is established. The establishment of the secretariat is made more difficult by the fact that its human and financial resources have to be provided entirely out of the existing authorities' already very meagre resources. At present it would seem sensible to wait and see what experience is gained with the secretariat for coordinating the implementation of the MSFD. If this institution proves useful, it should be expanded in future.

476. One means of ensuring greater integration of marine issues would be to establish and administrative structure for the entire complex of marine use and conservation in the form of a Federal Marine Agency *(Meeresbundesamt)*. An authority of this kind would also provide an opportunity to strengthen marine policy and marine conservation by creating a competent institution that represented the interests of this topic and could communicate it to the public. Other favourable effects could be achieved by bringing together the fragmented competencies for marine protection and marine use that are currently spread around various sectoral authorities. Among other things, this would simplify cooperation and exchange of information, and the pooling of data. One disadvantage of a Federal Marine Agency would be that if the human and financial resources were inadequate, the position of environmental aspects might be weakened in relation to other departments. Moreover, some interests and pressures affecting marine waters are also due to land-based polluters, which would not fall within the responsibility of a Federal Marine Agency. Other areas of marine conservation relate to competencies of the Länder. It would therefore be necessary to create new interfaces for such an authority. Furthermore, the establishment of such an authority involves a risk of diminishing transparency of decisions, since many processes of weighing up conservation and use interests would take place under the same roof, with a risk of the public not being informed about the conflicts involved. It would also be necessary to clarify which ministry would be responsible for a Federal Marine Agency.

477. The SRU sees both opportunities and risks arising from the establishment of a Federal Marine Agency. To strengthen the position of marine conservation it would be necessary to accord primacy to the sustainable use and conservation of marine waters. That being so, it would be desirable for the agency to be the responsibility of the Federal Environment Ministry. The German government should seriously examine the opportunities associated with the establishment of a Federal Marine Agency, especially as regards strengthening the position of marine waters, including their sustainable use and the conservation of marine ecosystems.

8.3.2.2 Progress with implementation

478. The first steps in the implementation of the MSFD, which are currently in progress, concern:

– determining the current environmental status of marine waters,
– defining good environmental status for the waters concerned, and
– laying down environmental targets and associated indicators that can serve as criteria for the achievement of good environmental status.

The relevant activities must be completed by July 2012 and a report sent to the European Commission for each of the three steps. In mid October 2011 the drafts of the first three reports (separately for North Sea and Baltic Sea) on the implementation of the MSFD in Germany were released into the public participation procedure, which ended in mid April 2012.

479. The inventory of current status comprises a description of the physical, chemical and biological status of the marine waters, i.e. the German parts of the North Sea and Baltic Sea, and the habitat types and hydromorphology. It is also necessary, on the basis of the indicative list, to describe the pressures and encroachments on the two marine regions and their impacts on the marine ecosystems, and undertake a socio-economic analysis. The data situation regarding inshore waters is regarded as relatively good, but there is a lack of information about offshore waters. The draft of the initial assessment of German marine waters makes use of existing work on the implementation of the Water Framework Directive, for example, or the Habitats Directive 92/43/EEC, and in view of the existing gaps in the data the status is described on the basis of argument rather than in quantitative terms (Bund-Länder Messprogramm 2011a; 2011b).

On the basis of the two draft reports, it is evident that neither of the two ecosystems possesses good environmental status (see Table 8-1). In two cases it was impossible to make an assessment because of the lack of assessment procedures. Much the same is true of the various types of pressures. For example, it was not possible to assess physical losses and damage, physical disturbances, or systematic and/or deliberate releases of substances. Thus in certain areas there is a lack of established methods for assessing the status or the degree of pollution of Germany's marine waters.

The MSFD requires the assessment of the current status of the marine waters to be repeated every six years, among other things to update the assessment in line with the latest research findings. For future assessments it will be necessary to make use of additional data generated with the aid of monitoring programmes yet to be established, in order to ensure full compliance with the requirements of the MSFD.

Another step in assessment is performing the economic and social analysis of the current uses of the marine waters and estimating the consequential costs of a further deterioration in the marine environment (KRAUSE et al. 2011a).

480. The determination of good environmental status is another step in the first phase of implementation of the MSFD. It is based on the initial assessment of the marine waters and is to be keyed to the descriptors mentioned in the directive and the relevant criteria and methodological standards (see para. 467).

Some of the indicators listed by the European Commission are very vague. The Member States face the challenge that they have to operationalise the indicators within two years, i.e. lay down limit values or trends which mark the lower limits of good environmental status. In view of the inadequate data situation and lack of assessment methods, the Member States are unlikely to succeed in determining good environmental status for all criteria and indicators within the prescribed period. For example, the MSFD lists noise as a "new" pressure about which very little knowledge exists, let alone adequate data for an assessment. In such cases the directive allows the Member States to fall back on existing status targets, where these are available (KRAUSE et al. 2011a).

481. For example, existing status descriptions have also been used in preparing the draft reports on the determination of good environmental status in the German North Sea and Baltic Sea. Among other things, these originate from the UN Convention on the Law of the Sea, the CBD, the OSPAR Convention, the Birds Directive 2009/147/EC, the Habitats Directive, and the Water Framework Directive and its daughter directive. As expected, the restricted data situation and the lack of assessment methods and/or operationalised criteria and indicators made it impossible at this stage for the two reports to include specific limit values or threshold values or other quantified information on good environmental status for all the criteria and indicators associated with the eleven descriptors. This applies, for example, to inputs of waste and noise. Neither was it possible to make an integrated assessment or determination of good environmental status (Bund-Länder Messprogramm 2011d; 2011c). Determining good environmental status is a very ambitious task. It follows that Europe-wide harmonisation of the definitions of good environmental status will probably not be possible until some future date. This problem could have been prevented by laying down more specific minimum standards at European level.

482. The third report to be presented in mid 2012 concerns the determination of environmental targets. According to the MSFD, these serve to influence human activities in line with the ecosystem approach and the precautionary principle, and to prevent any deterioration in the condition of the marine environment. Measurable indicators are to be laid down to make it possible verify whether the targets are achieved (see Article 10 MSFD). The report is to take account of the indicative lists of pressures and impacts and the characteristics for laying down environmental targets (see Annex IV MSFD). The targets serve as a guide to the achievement of good environmental status. The difference between the determination of good environmental status of the marine

environment and the laying down of environmental targets is not clearly defined. The environmental objectives are given concrete shape by means of operational targets, many of which are directly coupled to a conservation measure. It is also possible to formulate interim targets and, where appropriate, specify reference points. The environmental objectives are the key to the programmes of measures.

Table 8-1

Draft of initial assessment of the German North Sea and Baltic Sea

	North Sea		Baltic Sea	
Characteristic	**Status**	**Main pressures or causes**	**Status**	**Main pressures or causes**
Biotope types	Not all habitats reach GCS	Wide variety of pressures	Not all habitats reach GCS	Wide variety of pressures
Phytoplankton	GES not reached	Nutrient and pollutant inputs, biol. disturbances and climate change	GES not reached	Especially nutrient and pollutant inputs, biological disturbances and climate change
Zooplankton	Not assessable	Nutrient and pollutant inputs, biol. disturbances and climate change	Not assessable	Nutrient inputs and climate change
Macrophytes (multicellular, relatively large aquatic plants)	GES not reached	Nutrient inputs and bottom trawling	GES not reached	Nutrient inputs, substrate removal and bottom trawling
Macrozoobenthos (relatively large bottom-dwelling animals)	GES not reached	Nutrient inputs and bottom trawling	GES not reached	Nutrient inputs, substrate removal and bottom trawling
Fish	GES not reached	Fisheries, climate change and nutrient inputs	GES not reached	Fisheries, climate change and nutrient inputs
Marine mammals	GES not reached	Fisheries, pollutant inputs and underwater noise	GES not reached	Fisheries, pollutant inputs and underwater noise
Seabirds	GES not reached	Fisheries, shipping, refuse and hunting	GES not reached	Fisheries, shipping, construction, sand and gravel extraction, refuse and hunting
Alien species and microbial pathogens	Not assessable		Not assessable	

GCS = Good conservation status (relating to biotopes)
GES = Good environmental status

Source: Bund-Länder Messprogramm 2011a; 2011b

Since the main pressures on the North Sea and Baltic Sea are known, it is at least possible to give a rough outline of objectives for these areas. Many environmental objectives relate to several criteria and indicators, which means that the number of environmental objectives to be formulated is much smaller than the number of indicators. "Performance indicators" are to be used to verify the achievement of environmental objectives, and it seems likely that many of the impact indicators used for status assessment will be used again here (KRAUSE et al. 2011a). Environmental objectives that have already been laid down for the same waters at national, Community or international level are to be taken into account (see Article 10 MSFD).

483. As in the determination of good environmental status, the two draft reports on operational environmental objectives for the German North Sea and Baltic Sea make extensive use of existing information. This applies in particular to the legal regulations mentioned above and

the decisions made under the regional conventions. In view of the great gaps in information about ecosystems and the pressures they are subject to, the environmental objectives must in future be constantly updated in line with the latest findings (Bund-Länder Messprogramm 2011f; 2011e).

The following objectives have already been proposed for the North Sea. They are merely to be seen as a guide to achieving good environmental status and need to be specified on the basis of operational targets (Bund-Länder Messprogramm 2011e):

- Seas free of significant adverse impacts arising from anthropogenic eutrophication,
- Seas free of pollution by harmful substances,
- Seas are free from adverse impacts on marine species and habitats arising from the effects of human activities,
- Seas have resources that are used sparingly and sustainably,
- Seas are free from pollution by waste,
- Seas are free of adverse impacts arising from anthropogenic inputs of energy,
- Seas have natural hydrographic conditions.

The individual objectives always relate to one or more of the eleven descriptors listed in the MSFD. Operational targets are specified for each individual objective, e.g. for bringing eutrophication to a halt:

- *Further reduce nutrient inputs via rivers:* This refers to the reduction requirements in the programmes of measures in the management plans of the Water Framework Directive. The monitoring indicators are the nutrient concentrations at the limnic-marine transition point of the rivers flowing into the North Sea.
- *Reduce nutrient inputs due to remote inputs from other marine regions:* This refers to regional cooperation on marine protection. The indicators are the imports of nitrogen and phosphorus and the spatial distribution of nitrogen and phosphorus in the marine water.
- *Further reduce nutrient from the atmosphere:* The indicators are the figures for emission or deposition of nitrogen compounds on the surface of the sea.

As part of the work of the OSPAR Commission, there are plans to draw up reduction targets for achievement of the OSPAR objective of "a healthy marine environment in which no eutrophication takes place". The draft report on the environmental objectives for the Baltic Sea refers to the HELCOM Baltic Sea Action Plan, which already lays down nutrient reduction targets (Bund-Länder Messprogramm 2011f). In this connection, Germany has undertaken to reduce its nutrient inputs into the Baltic Sea by 240 t for phosphorus and 5,620 t for nitrogen by the year 2016. There are also plans to examine whether the nutrient reduction targets laid down in the programmes of measures of the WFD are sufficient to bring about good environmental status in Germany's marine waters.

484. Another example of ambitious objectives in the draft reports is the management of living resources. The intention is to manage all fish stocks used on the basis of maximum sustainable yield (MSY). The indicators specified for this are fishing mortality (F_{MSY}) and the catch-biomass ratio. The populations of fished species are also to display a more or less natural age and size structure. The relevant indicators relate to the length distribution in the population and the mean size of the individuals on reaching sexual maturity. A further objective stated is that fishing is not to damage ecosystems, e.g. by bottom trawling and discards. In the context of implementing the fisheries objectives, the reports draw attention to the limited opportunities for action by the Member States and Germany, and attaches hopes to the forthcoming reform of the Common Fisheries Policy (Bund-Länder Messprogramm 2011f; 2011e; SRU 2011a).

485. In summary, it can be said that even the first steps in implementation of the MSFD represent a great challenge for the Member States in view of the ambitious timetable. A considerable need for coordination between the authorities involved can also be expected. In particular, a positive feature of the existing draft reports on the German marine regions is the fact that they address distinctly ambitious operation targets. The SRU takes the view that there is an urgent need to maintain the high level of these targets in the final version of the reports as well.

8.3.3 Cooperation at European level and implementation of a regional approach

486. The MSFD requires the Member States of a marine region or subregion to cooperate with each other on developing their marine protection strategies. This step is important to ensure uniform or coordinated marine strategies for a marine region with regard to assessment, monitoring, targets and measures.

A platform known as the Common Implementation Strategy (CIS) and headed by the Marine Directors has been set up to implement the MSFD (European Commission 2011b). In collaboration with the DG Environment and the DG Maritime Affairs, they coordinate the measures to be taken in the Member States to implement the MSFD. Various bodies have been created for this purpose. including a marine strategy coordination group and three working groups – on good environmental status, exchange of data, information and knowledge, and economic and social assessment (European Commission 2011a).

487. The development of national marine protection strategies is proceeding at varying speeds in the different EU states. For example, the European Commission called upon Estonia, Greece, Finland and Malta in January 2011 and France and Ireland in April 2011 to comply with the EU requirements for developing a conservation strategy

for their marine waters. Until then these countries had failed to inform the Commission about the transposition of the MSFD into national law, which was supposed to be completed by 15 July 2010 ("Environment: Estonia, Greece, Finland and Malta warned over failures to protect their seas", European Commission press release of 27 January 2011).

488. Another problem, as already mentioned, is the vague instructions in the MSFD. For example, they permit considerable latitude in interpreting what is meant by good environmental status, which makes it seem likely that there will be differences in definitions at European level. Whereas some Member States attach very ambitious targets to good environmental status, others are content to equate the current status quo with good environmental status (IRMER et al. 2010b, p. 16). At present the question of whether and how this controversy can be resolved is wide open.

489. The MSFD envisages that existing structures are to be used for better coordination and regionalisation of the implementation process. In this work the Member States are called upon to *use, where practical and appropriate, existing programmes and measures developed under the structures of international marine conventions such as the regional marine conventions* (Article 6 MSFD). This obligation, in addition to its non-binding character, not only lacks a requirement to take over the objectives and measures of the international marine protection conventions, but also fails to specify any details about how the regional cooperation is to be coordinated. However, the above mentioned CIS process is an important step in structuring. The SRU also takes the view that it would make sense to use the working groups set up under the international marine protection conventions. For example, there is already a working group (ICG-MSFD) for the OSPAR region, and it is planned that this should take over the coordination work for the MSFD in the Northeast Atlantic region.

Since the Baltic Sea was put forward at an early stage as a pilot region for the implementation of the MSFD, and since the action plan adopted under HELCOM (Baltic Sea Action Plan – BSAP) is very progressive ("Baltic Sea to become a pilot area under the EU Marine Strategy Framework Directive", HELCOM press release of 5 December 2008), it would make sense to continue on the basis of this preliminary work. The parties to the Helsinki Convention have approved this model character of the BSAP for rapid and effective implementation of the directive ("HELCOM action plan is seen as a pilot project under the EU Marine Strategy Framework Directive", HELCOM press release of 29 April 2009). The two projects HELCOM-CORESET and HELCOM-TARGREV, which serve to further develop and implement the BSAP, are also aiming to link this work to the implementation of the MSFD. HELCOM-CORESET in particular is intended to develop core indicators for biodiversity and hazardous substances that are associated with quantitative targets for assessing the marine habitat on the basis of the environmental objectives. The TARGREV project serves to establish targets for eutrophication, which in turn can be used by the Member States in drawing up targets for good environmental status. For example, HELCOM has already agreed on the following five objectives with regard to eutrophication: nutrient concentrations close to natural values, clear water, natural occurrence of algal blooms, natural distribution of flora and fauna, and oxygen concentrations consistent with natural conditions. Various indicators are to be found for these objectives, and relevant quantitative targets established (HELCOM, no year specified). Another project, which is devoted to coastal fish populations, also serves to implement both the BSAP and the MSFD. The purpose of the project is to assess the status of coastal fish communities on the basis of indicators and to draw up targets and programmes of measures for achieving good environmental status (HELCOM a, no year).

490. All in all, it has to be said that regional coordination of the Member States to implement the MSFD will not be an easy task. Partly because of this, the work performed and structures created under the regional marine protection conventions are an important and very useful basis. For this reason, use should be made of existing structures, and the objectives and measures already approved by the OSPAR Commission and HELCOM should as far as possible be taken up in the implementation of the MSFD. Especially since the signatory states to the regional conventions have already reached agreement on these objectives, there is a good case for incorporating the latter in the work on shaping the MSFD. For one thing this simplifies the implementation of the MSRL, while for another, it reinforces the binding character of the agreements made under the regional conventions.

491. To date the European Commission has made little use of the opportunity to accompany, steer and harmonise the implementation processes, but has been content with a "soft" coordination of the processes. However, at the first signs that self-managed cooperation and implementation of a regional approach are not working, the Commission should draw up appropriate instructions.

8.3.4 Embodiment of marine protection in relevant sectoral policies

492. A central aspect in the implementation of the MSFD is the question of the measures that can be taken under this directive to achieve the objective of good environmental status of marine waters. Here attention inevitably turns to the main impacts and causes already mentioned, in other words the fishing sector, nutrient inputs from agriculture, and pressures due to shipping. As already pointed out, only limited freedom of action exists at national level in the areas and sectors mentioned (see para. 473). The instruments relating to fisheries are regulated in the CFP. With regard to nutrient inputs, the CAP in particular is relevant, and also the Nitrate Directive 91/676/EEC and its national transposition in the Fertiliser Ordinance (DüV). In the estimation of the SRU,

the arrangements made in the sectoral policies are far from sufficient to achieve the objectives of the MSFD. There is therefore a need for more far-reaching measures and closer integration of these policies in marine protection. The focus here is on reforms to the CAP and the CFP, for which the SRU recently published recommendations (SRU 2009; 2011a).

493. The question remains as to how the implementation of the MSFD can help to embody marine protection in the policies mentioned. In the context of their reporting duties, the Member States have the opportunity to address, for example, the environmental problems caused by fishing or agriculture, by describing the impacts and drawing up targets. If the Member States do not have the competence to take action in a problem area themselves, they may – on their own or jointly with other Member States – inform the European Commission and other relevant organisations and request them to take action (see Article 13 paragraph 5 and Article 15 MSFD). In addition, the Member States may also propose measures at Community level. The European Commission has to respond to such initiatives within six months and take them into account when making relevant proposals to the European Parliament and the European Council (see Article 15 MSFD).

This indirect route affords an opportunity to initiate changes to the CFP and the CAP via the MSFD. It remains to be seen how far influence can also be exerted on international processes, e.g. at the IMO, to bring about environmental protection measures in the shipping sector. An important role is played by the objectives approved under the MSFD, which by virtue of their binding character should build up political pressure to take appropriate action. It is therefore particularly important to agree on ambitious objectives in the implementation of the MSFD.

8.3.5 Links to and comparison with the Water Framework Directive

494. In spatial and conceptual terms, the MSFD picks up the thread of the Water Framework Directive (WFD) (HEISKANEN et al. 2011; European Commission – GD Environment 2012). It takes up the WFD's claim to an integration-oriented approach to the various uses of waters. Both directives pursue a largely holistic approach, i.e. they consider not only the chemical pollution of waters, but also pressures due to other human uses. Both the WFD and the MSFD are based on the ecosystem approach and the concept of adaptive management. The WFD marked the start of a paradigm change in European water policy: away from sectoral assessment and towards a holistic assessment of all pressures on bodies of water. The MSFD follows this new path opened up by the WFD. A comparison of the MSFD with the WFD (IRMER et al. 2010a) makes it possible to draw a number of conclusions about how the MSFD can be optimised in the course of the implementation process and harmonised with the WFD.

495. Whereas the WFD provides for a five-stage assessment of ecological status and a two-stage assessment of chemical status, the MSFD merely requires a statement as to whether or not good environmental status is achieved. The introduction of a five-stage assessment scale for the MSFD would be desirable for two reasons: for one thing, the two directives overlap in space and time, which means that coherent presentation of the results is difficult if the assessment scales are not harmonised. For another, harmonisation of the assessment scales would have the advantage of permitting a more differentiated presentation of partial successes on the way to good environmental status (Article 8 MSRL) (IRMER et al. 2010a). This would prevent a situation where good environmental status had to be determined under both the WFD and the MSFD in areas where both directives apply – i.e. the coastline itself (WFD Navigation Task Group and Marine Strategy Navigation Group 2010).

The description of good environmental status in the WFD is based on normative definitions and can be described in general terms as a "slight" change from the natural reference conditions (absence of disturbing anthropogenic influences). These may be derived from historical data, reference measurements, models or expert opinions. In assessing the status of a water body, the WFD works on the "one-out-all-out" principle, in other words the value for the ecological status of the water body is based on the biological or physico-chemical component with the lowest score. This principle also applies to good chemical status. This principle is not applied in the MSFD, because not all descriptors have the same importance in the assessment of waters (KRAUSE et al. 2011a; discussion with Federal Environment Ministry on 30 August 2011). Moreover, the MSFD largely dispenses with normative requirements. In this respect it falls considerably short of the WFD's claim (IRMER et al. 2010a). At present, however, there seems unlikely to be any such subsequent adaptation of the normative framework to the WFD.

Coastal waters fall within the scope of both the MSFD and the WFD. However, since different parameters are to be measured under the two directives, this could result in different assessments of the same waters – depending on which directive's requirements are taken as a basis. Consistency of assessments calls for non-conflicting assessment structures in both directives – and coordination with the relevant EU nature conservation rules such as Habitats Directive and Birds Directive. Much the same applies to the programmes of measures to be implemented in the future. Here too, steps should be taken to prevent parallel work on implementing two directives. The SRU endorses the Federal Environment Agency's recommendation that the work on the CIS process for the WFD be used to assess the eleven descriptors of the MSFD, in order to ensure a consistent assessment strategy. Further steps should also be taken to make the implementation of the two directives in Germany and Europe as consistent as possible (IRMER et al. 2010a; WFD Navigation Task Group and Marine Strategy Navigation Group 2010).

The MSFD goes beyond the requirements of the WFD in that it addresses pressures such as inputs of waste, noise and atmospheric inputs. Furthermore, the MSFD provides for the detection and assessment of the impacts of human uses on biological ecosystem components of the seas, both individually and cumulatively. The content of the MSFD is thus more comprehensive than that of the WFD (IRMER et al. 2010a; MARGGRAF et al. 2011).

496. For the management of river basin districts, the WFD calls for a coherent concept and coordination across Länder and national boundaries. The necessary international cooperation is detailed in the strategy on the common implementation of the WFD (Water Directors 2001). In order to ensure the necessary coordination, it was necessary to adapt the institutional structures and authorities, especially at international level, to the tasks of common implementation and establish new coordination bodies. Although the MSFD does not include any concrete recommendation that these structures are to be used for international coordination (cf. para. 472), Germany should take an active part in the MSFD implementation process at European level with the long-term aim of developing a coherent concept for transboundary coordination. The implementation of the WFD has shown that the road to normative regulations that are not laid down in the directive itself is largely paved in an international context.

8.4 Protected areas and their connection with the Marine Strategy Framework Directive

497. According to the MSFD, the establishment of marine protected areas (MPAs) makes an important contribution to the achievement of good environmental status (Recital 6 to the MSFD). The MSFD does not require the establishment of additional MPAs, but refers in Article 13 paragraph 4 MSFD to the existing obligations (see para. 498 ff.). MPAs have favourable effects on ecosystems and populations by prohibiting or restricting harmful activities within their boundaries and by providing marine organisms with a place of refuge, e.g. for resting, feeding and reproduction (ROBERTS et al. 2005). On the other hand, it is not possible to prevent certain anthropogenic encroachments, such as inputs of hazardous substances and nutrients, from affecting marine protected areas.

Obligation to establish marine protected areas

498. At international level the CBD places its parties under an obligation to establish marine protected areas. At the 10th COP in Nagoya, Japan, in 2010 the parties set themselves the target of raising the proportion of marine protected areas worldwide from the present 1 percent to at least 10 percent (COP10-X/2). The aim is to create an effectively managed and ecologically representative network of protected areas, which is to be supplemented by supporting nature conservation measures (Target 11 of the Strategic Plan; SCBD 2010).

The CBD has also been ratified by the EU (Council of the European Communities 1993). In May 2011 the European Commission presented, under the title "Our life insurance, our natural capital: an EU biodiversity strategy to 2020", a revision of its biodiversity strategy drawn up in 1998 (European Commission 2011c). This defines six mutually complementary but independent individual goals, which are to be achieved by means of twenty measures. Marine protected areas form part of the Natura 2000 network of areas which has yet to be completed (Measure 1). The fourth goal addresses the task of conserving endangered marine ecosystems and raising them to good environmental status in accordance with MSFD (Measures 13 and 14). The European marine protected areas are mainly designated as part of the Natura 2000 network and serve to protect species and habitats of Community interest such as reefs and eel-grass meadows (see Annexes I and II to the Habitats Directive and Birds Directive).

499. The obligation to establish marine protected areas is also laid down in various regional conventions such as the OSPAR and Helsinki Conventions. The OSPAR Commission and HELCOM support the designation of an ecologically coherent and well managed network of protected areas in the Northeast Atlantic (OSPAR-MPAs) and the Baltic Sea (Baltic Sea Protected Areas – BSPAs) (HELCOM and OSPAR Commission 2003; HELCOM 2007). The Natura 2000 areas in the EEZ of the Baltic and North Sea are also shown as OSPAR or HELCOM marine protected areas. All in all, Germany so far has six areas in the Northeast Atlantic and twelve areas in the Baltic that are designated as OSPAR and HELCOM marine protected areas (von NORDHEIM et al. 2011).

500. Under its National Biodiversity Strategy, Germany has also set itself ambitious targets for marine protection (BMU 2007). These include a joint OSPAR-/HELCOM network of well managed coastal and marine protection areas that includes core zones of natural development, and its integration in international networks by 2010. In addition to the marine protected areas resulting from European directives and regional agreements, there are a large number of other protected marine areas at national level, such as national parks and nature parks.

Protected areas in the Marine Strategy Framework Directive

501. The programmes of measures provided for in Article 13 of the MSFD are to include spatial protection measures contributing to coherent and representative networks of marine protected areas (Article 13 paragraph 4 MSFD). These are to adequately cover the diversity of the constituent ecosystems, such as special areas of conservation pursuant to the Habitats Directive, special protection areas pursuant to the Birds Directive, and marine protected areas as agreed by the Community or Member States concerned in the framework of international or regional agreements to which they are parties. To this end the Member States are required, under Article 21 of the MSFD, to submit information by 2013

on the development of the network of marine protected areas. On the basis of this information, the European Commission will report to the European Parliament and the European Council by 2014 on progress with the establishment of marine protected areas. Not until the protection targets have been achieved for all MPAs in Germany's marine waters will it be possible to determine whether and to what extent the network of protected areas can contribute to achieving good environmental status in German marine waters by 2020.

Existing marine protected areas in Germany

502. On a European comparison, Germany plays a pioneering role with regard to the establishment of marine protected areas. About 77 percent of North Sea coastal waters and some 50 percent of the Baltic are designated as Natura 2000 areas; this means a total of 28 areas in the North Sea and 66 areas in the Baltic Sea. The federal Länder are responsible for these protected areas. To these must be added 10 protected areas in the German EEZ (approx. 28 percent of the North Sea and 55 percent of the Baltic) (BfN 2011). All Natura 2000 areas in the EEZ are also registered as OSPAR or HELCOM protected areas. Like the other Member States of the EU, Germany has the obligation to protect its marine Natura 2000 areas under national law as well and to lay down the maintenance measures necessary for their conservation. This must be done not later than six years after the designation of the protected areas, which took place in 2007, in other words by the end of 2013. The necessary maintenance measures are being drawn up by the Federal Office for Nature Conservation and the Federal Environment Ministry.

Conflicts due to different uses: Resource extraction

503. Uses of marine waters conflict with marine conservation (see Section 8.1.1), since zones within protected areas where no use takes place are basically the most successful when it comes to protecting marine biodiversity ("no-take zones", cf. ROBERTS et al. 2005; TOROPOVA et al. 2010; WWF Deutschland 2011). There are virtually no areas in the German North Sea where some sort of use is not in progress or planned – and this is despite the fact that about 77 percent of coastal waters and 28 percent of the EEZ are designated as protected areas (Fig. 8-1).

As an example, we look below at the conflict between marine conservation and resource extraction. A similar scrutiny can also be made in the fields of fisheries (SRU 2011a), offshore wind power (SRU 2011b, para. 132 ff.) and shipping.

504. Resource extraction in the German EEZ is subject to national regulations (sand, gravel, gas, oil). The current permit areas for sand and gravel extraction and the concession areas for hydrocarbon extraction are located in protected areas or in their immediate vicinity. For example, the only active platform for gas production in the German North Sea EEZ and its associated pipelines and compressor platforms are situated in the Natura 2000 site Dogger Bank (Deutscher Bundestag 2010).

It was not until the end of October 2011 that extensive construction work on the oil platform "Mittelplate A", located at the southern edge of the National Park Schleswig-Holstein Wadden Sea (situated in coastal waters) was belatedly approved in a plan approval decision. The sometimes problematical resource extraction in the EEZ is an example of uncoordinated sectoral policies.

Responsibility for permitting resource extraction and the laying of pipelines and cables in the German EEZ rests with the mining authorities of the Länder. Since the revision of the Federal Nature Conservation Act of 1 March 2010, the Federal Office for Nature Conservation has been the competent nature conservation authority with the status of a consulting authority (Section 58 subsection 1 Federal Nature Conservation Act). What this means is that it is asked to comment in the case of projects in which mining law prescribes public participation or the involvement of authorities where other interests are affected. However, since the decision on the authorisation or rejection of a project is taken by the application authority and the latter is not bound by the consulting authority's comments, there is no guarantee that priority will be given to nature conservation interests. Admittedly a project was rejected in the Baltic Sea EEZ because it was located in the European bird sanctuary "Pommersche Bucht" and included the greater part of the proposed Natura 2000 site "Adlergrund", which meant that one could not rule out the possibility of substantial adverse impacts on the local avifauna as important constituents of the protected area. By contrast, several projects for sand and gravel extraction in the North Sea were approved, although they are largely or completely located in Natura 2000 site (Table 8-2). The applications for the permit fields were made and granted in parallel with the designation of the Habitats Directive and Birds Directive areas, although these already possessed protected status as potential Natura 2000 protected areas. The Federal Office for Nature Conservation had repeatedly raised considerable objections in 2002 and 2003. For example the BfN, in a statement dated 8 February 2002 on the outline operating plan submitted for the "Weisse Bank" project, pointed out that the planned extraction area lay in one of the most important reef zones in the EEZ of the German North Sea and the impact assessment study submitted and the Habitats Directive compatibility study were not convincing. The arguments put forward by the BfN were largely disregarded in the plan approval decision of 31 October 2002. Even when the main operating plan was extended, only part of the protected habitats was excluded, and extraction fields were once again approved in the necessary protected zones identified by the BfN (Deutscher Bundestag 2008, p. 5).

In its statement of 28 November 2003 on the "OAM III" project, the BfN drew attention to the fact that in its opinion the project would have a considerable adverse

impact on the feeding habitats of porpoises, grey seals, seals and seabirds (maintenance and development objectives) as a result of the planned extraction and consequent destruction of sand eels habitats. The BfN considered that these interests were not adequately safeguarded with the project in its proposed form. The BfN's arguments were largely disregarded in the plan approval decision of 30 August 2004 (Deutscher Bundestag 2008, p. 5).

The outline operating plans approved in this form conflict with European nature conservation law, and would still do so even if nature conservation requirements were subsequently imposed on the main operating plans under which extraction was permitted. There is also a lack of transparency about procedures, both at national and at European level. Evidently the Federal Mining Act (BBergG) does not provide a suitable programme for resolving legal conflicts, and it should therefore be changed (see para. 134).

Table 8-2

Sand and gravel extraction in Natura 2000 areas within the Exclusive Economic Zone of the North Sea

Projects in the EEZ	Conflict with Natura 2000	Permit	Outline operating plan
"Weisse Bank" sand and gravel extraction	Entirely within the Natura 2000 site "Sylter Aussenriff"	Granted until 15.05.2051	Approved for 2 subfields of 60 km² each
"OAM III" sand and gravel extraction	Entirely within the Natura 2000 site "Sylter Aussenriff"; entirely within the bird sanctuary "Östliche Deutsche Bucht"	Granted until 30.03.2039	Approved for 3 subfields: 100 km^2 + 36 km² + 10 km² (special operating fields)
"BSK1" sand and gravel extraction	Largely within the Natura 2000 site "Sylter Aussenriff"; occurrence of 5 species protected under Annexes I and IV of the Habitats Directive	Granted until 14.07.2033	Applied for in respect off 129 km² − 16 km² (compensating field)
"Nordsee 1"	Occurrence of 6 species protected under Annexes II, V and IV of the Habitats Directive	no data	25 km² permit procedure dormant

SRU/UG 2012/Table 8-2; data source: Deutscher Bundestag 2008, p. 5

Management of protected areas as a key element towards good environmental status

505. Germany has a complete Natura 2000 network (see para. 502). This is an important step towards achieving the objectives of the MSFD, provided the protected areas are managed effectively. To this end it must be possible to lay down requirements for other sectors, in order to prevent adverse impacts and achieve the protection target. While this would be no problem for sectors regulated at national level such as resource extraction, considerable conflicts of competence could arise for uses regulated at European level such as fisheries. Rudimentary use restrictions in marine protected areas can be found in the spatial planning for the North Sea and Baltic Sea, which rules out the construction of wind farms in areas protected under the Habitats Directive and Birds Directive (see para. 507 ff.). Above and beyond this, however, the areas protected under the Habitats Directive and the Birds Directive, which are merely included in the maritime spatial plans for information purposes, should be subject to separate arrangements. One particular problem is that in the protected areas included for information purposes there is the possibility of overlapping with priority or reserved areas of other uses (as already pointed out in connection with the draft maritime spatial plans, UBA 2008b, p. 8–9). At any rate, uses that endanger achievement of the protection target in marine protected areas should not be allowed to take place. In many cases the conflict between use and conservation can also be avoided by spatial and temporal control of or restrictions on the use concerned (e.g. consideration of breeding and spawning periods, feeding or moulting areas) (MERCK 2011).

8.5 Instruments for integrating divergent interests in marine areas

506. The following section looks into the contribution that maritime spatial planning and integrated coastal zone management (ICZM) can make to comprehensive or cross-sectoral marine protection.

8.5.1 Maritime spatial planning

507. In future, the instruments of maritime spatial planning should ensure orderly regional development and successful coexistence of all interests that reconcile social and economic demands on the marine area with the conservation of its environmental functions. The revised version of the Federal Spatial Planning Act in 2004 allocated planning competence for the German EEZ in the

North Sea and Baltic Sea to the federal government, entrusting it for the first time with the task of concrete overall spatial planning for the maritime sector. The aim is to defuse potential conflicts between divergent use interests before they arise – by taking account of both economic interests and marine protection issues.

Spatial Planning in Germany's Exclusive Economic Zone

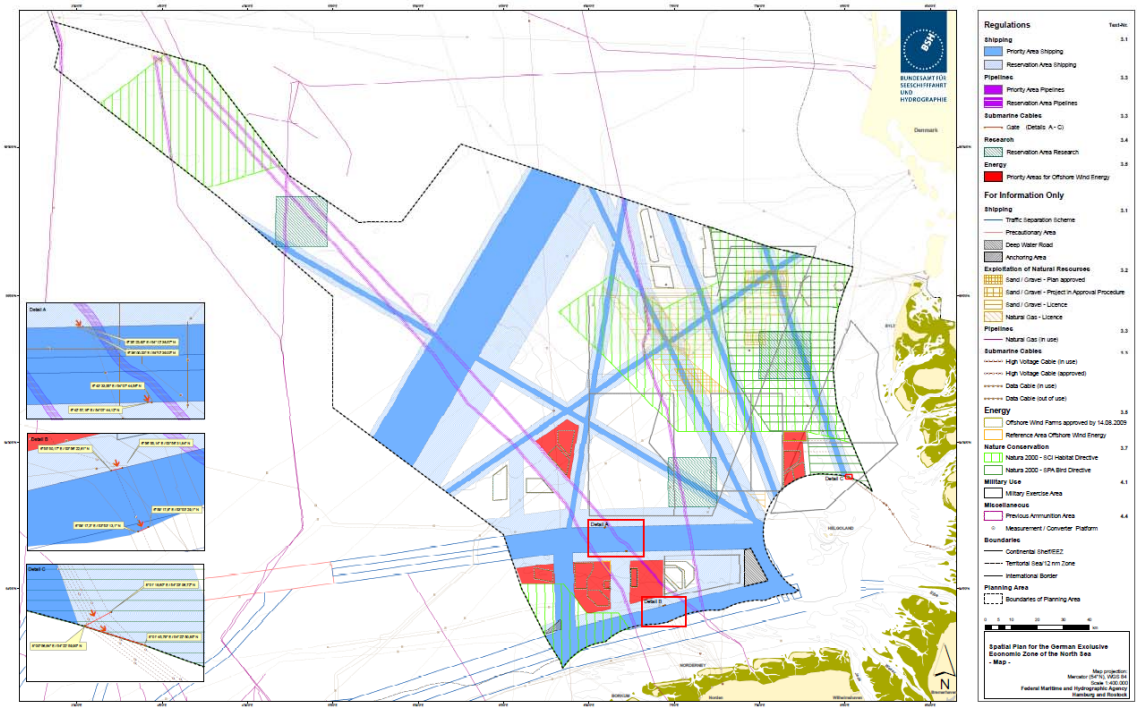
508. Germany was the first EU Member State to draw up spatial plans for the EEZ. The EEZ comprises the area between 12 and 200 nautical miles from the coastline. In this area there are a wide range of use interests, e.g. shipping, fisheries, wind energy, marine research, military uses etc., and these are likely to increase in future (see para. 447 ff.). At the same time, protection aims also exist in the form of areas protected under the Habitats Directive and the Birds Directive. For the EEZ in the North Sea and Baltic Sea, the Federal Ministry of Transport, Building and Urban Affairs has presented spatial plans laying down objectives and principles of spatial planning relating to economic and scientific use, ensuring the safety and ease of marine shipping, and protecting the marine environment (legal ordinances on spatial planning in the German Exclusive Economic Zone in the North Sea (21 September 2009) and Baltic Sea (10 December 2009)). The spatial plan for the North Sea entered into force on 26 September 2009 and for the Baltic Sea on 19 December 2009 (Fig. 8-3 and Fig. 8-4).

The following five guiding principles were drawn up for the two spatial plans:

- Securing and strengthening maritime traffic
- Strengthening economic capacity through orderly spatial development and optimisation of spatial use
- Promotion of offshore wind energy use in accordance with the Federal Government's sustainability strategy
- Long-term sustainable use of the properties and potential of the EEZ through reversible uses, economic use of space, and priority of marine uses
- Securing natural resources by avoiding disruptions to and pollution of the marine environment.

Figure 8-3

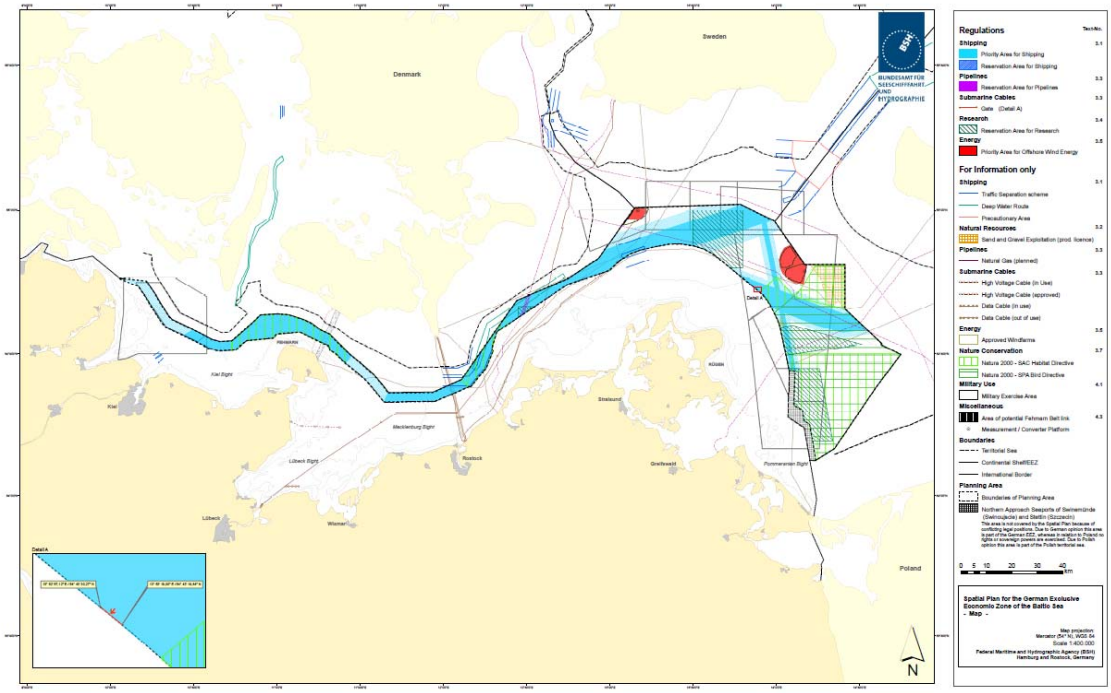
Spatial plan for the German Exclusive Economic Zone in the North Sea



Source: BSH 2011

Figure 8-4

Spatial plan for the German Exclusive Economic Zone in the Baltic Sea



Source: BSH 2011

Effect of spatial planing

509. One important instrument of spatial planning is the definition of the regional structure pursuant to Section 8 of the Federal Spatial Planning Act. In addition to objectives and principles of spatial planning, this also includes the definition of priority, reservation and suitability areas (Section 8 subsection 7 Federal Spatial Planning Act). In priority areas, one use is given priority over other uses. Other uses are excluded if they are not compatible with the priority uses. In reservation areas, special importance is attached to certain uses when weighing up interests against competing uses. Thus competing uses are not ruled out per se. This means that reservation areas lack the exclusion criterion. Suitability areas designate areas that are particularly suitable for certain uses and may rule out such uses elsewhere in the planning region.

510. The main shipping routes were shown in the spatial plans as priority and reservation areas (cf. Figs. 8-4 and 8-5). These form the basic framework of the spatial plans. Since shipping enjoys guaranteed freedom under international law (Article 58 UNCLOS, see also para. 450), this measure is merely an additional safeguard for shipping interests. The use of wind energy is excluded in the main shipping routes and their immediate vicinity. Although the spatial plans have thus made a significant contribution to resolving the conflict between marine shipping and offshore wind energy, they do not have any controlling effect on the shipping sector, which continues to enjoy clear priority over other claims to use (NOLTE 2010). As well as reservation areas for shipping, the plans also include reservation areas for pipelines and research.

Other priority areas relate to the use of wind energy. Three priority areas covering an area of 880 km^2 have been designated in the North Sea, and two priority areas covering 130 km^2 in the Baltic Sea. These include the suitability areas designated in 2005, which thereby became priority areas. Unlike suitability areas, however, priority areas do not by any means rule out the construction of an installation outside that area. Thus their concentrating or steering effect is very limited (ERBGUTH 2011). Conditions laid down for wind energy were that the hub height of wind turbines must not exceed 125 m, the systems are to be decommissioned and dismantled at the end of their operating life, and energy generation measures must take account of existing pipelines and marine cables. Outside the priority areas the steering effect is confined to excluding Natura 2000 areas from the construction of offshore wind energy installations.

511. One criticism of the German spatial plans that has been voiced in various quarters is the special importance attached to the use of offshore wind energy, which gives prominence to a specific form of marine use. This counteracts a balancing of use interests among themselves and with the interests of marine protection (ERBGUTH

2011). Orderly development of offshore wind energy use including the necessary cable connections could, as suggested by the SRU, be promoted by a state tendering system for wind energy systems (SRU 2011b, para. 468). With regard to cable connections for offshore wind farms, attention must also be drawn to the new instrument of the Offshore Grid Plan. This was introduced by the revised version of Section 17 subsection 2a of the Energy Management act in 2011 as part of the "energy package". It provides that the Federal Institute for Navigation and Hydrography (BSH), in consultation with the Federal Network Agency (BNetzA) and in coordination with the BfN and the coastal Länder, is to draw up an annual offshore grid plan for the EEZ of the Federal Republic of Germany. This will identify the offshore installations that are suitable for cluster connections. Moreover, Section 17 subsection 2a of the Energy Management Act lays down that the offshore grid plan must also include the designation of the necessary routes for the connecting cables, the locations of the converter platforms and transboundary power lines, and also information about possible interconnections which make a contribution to system reliability and are compatible with efficient grid expansion.

512. The German spatial plans describe fisheries as a traditional branch of industry that has been carried on in home waters for centuries. The plans point out that because of the EU's exclusive regulatory competence in this sector, there is no provision for zone designations that impose restrictions on fishing (SCHUBERT 2009, p. 841). They merely draw attention to the fact that special account is to be taken of the fishing sector's interests in relation to uses such as resource extraction, route planning for pipelines and marine cables, and energy uses. The fishing sector for its part is called upon to take account of any cultural heritage sites in marine waters, such as wrecks (AWZ Nordsee-ROV, Annex No. 3.6.1).

513. Spatial planning does not place any restrictions on military uses. The existing military training areas are merely included in the spatial plans for information purposes. Maritime spatial planning does not lay down any regulations with regard to leisure and tourism. The same applies to resource use, which is merely called upon to take adequate care with regard to pipelines and marine cables, to maintain a suitable distance from them in resource exploration and extraction operations, and to avoid endangering the safety and ease of shipping. When selecting locations, account is to be taken of known sites of cultural heritage. To prevent adverse impacts on the marine environment, uses are to observe the best environmental practice, as published by the OSPAR Commission and HELCOM for various activities relating to marine waters (AWZ Nordsee-ROV, Annex No. 3).

514. It has been criticised that the maritime spatial plans merely set out principles for protection of the marine environment, but do not lay down any objectives. From an environmental planning point of view, there has been criticism of the fact that the marine protected areas are merely included in the spatial plans for information purposes. Instead, they could also have been safeguarded as spatial planning areas and treated on equal terms with other claims to use and other spatial planning areas (see para. 503). While one might assume that adequate protection is afforded by the existing international and national protection categories, this is restricted among other things by the fact that some of the areas are very large and other uses are permitted within them (UBA 2008b).

Expanding the steering potential of spatial planning

515. In view of the numerous and growing claims to use that are increasingly coming into conflict with marine protection, it is to be welcomed that Germany as the first EU Member State has introduced a spatial planning for the EEZ. In the opinion of the SRU this makes particular sense where it can prevent or divert uses that have adverse impacts on the marine environment, or restrict them by imposing conditions. Important instruments in this connection are priority areas and reservation areas.

At present, however, spatial planning in the EEZ largely takes place on an *ex post* basis – it describes the existing sectoral interests, but has virtually no steering effect aimed at reducing the impacts of human activities on the ecosystem and reconciling them with the many and various claims to use. Balancing of user interests against the requirements of marine protection is not taking place on the necessary scale. There is a need for spatial planning of a comprehensive, balancing and forward-looking character with corresponding steering effects (AHLKE and WAGNER 2004). This should treat marine protection and other use interests on equal terms. In particular, priority and reservation areas should be designated on a forward-looking basis with the aim of minimising encroachments on marine habitats as far as possible.

International coordination and European initiatives

516. Many of the uses off Germany's coasts are of an international nature. To permit coordination of the use activities in the various marine regions of the Member States, regional cooperation in the field of maritime spatial planning is desirable. First initiatives in this direction are already being taken at European level.

In its Green and Blue Papers on European marine policy, the European Commission also advocates spatial planning as an important instrument with regard to use of marine waters, and calls upon the Member States to develop their own spatial plans for their marine regions (European Commission 2007a; para. 457 ff.). Following on from this, the European Commission published a roadmap for maritime spatial planning (European Commission 2008). This is intended to accelerate the development of maritime spatial plans in the Member States and stimulate discussions about a common approach. While the

European Commission explicitly acknowledges the competence of the Member States for the implementation of spatial planning, it also sees a need for specifying requirements at European level (SCHUBERT 2009). The above mentioned initiatives by the European Commission are expected to result in a proposal for a European spatial planning directive (ERBGUTH 2012, p. 86), even if the European Commission takes the view that the subsidiarity principle limits the influence that can be exerted by the EU. However, when it comes to regulations with a focus in the field of environmental protection, the EU certainly possesses a restricted spatial planning competence (unanimity required) (CALLIESS/RUFFERT 2011, Article 192 marginal note 30). Thus spatial planning requirements with regard to marine protection are conceivable under European law, even if there are certain obstacles to their implementation. To date, however, the European Commission has sought to adopt a moderating and stimulating role with the aim of contributing to the coherence of spatial planning in the Member States (ERBGUTH 2011, p. 211; SCHUBERT 2009, p. 838; European Commission 2008, p. 3; 2010b).

Especially since the EU Member States are not obliged to draw up maritime spatial plans, current developments in the Member States are still following different paths and timetables. Transboundary cooperation in the spatial planning sector is made more difficult for Germany by the fact that the systematics and enforcement of spatial policy and spatial planning differ greatly from approaches in other European countries, where these exist at all. First projects, such as BaltSeaPlan (2012), are already working on regional coordination of spatial governernace at sea. A coherent European framework for maritime spatial planning would undoubtedly be desirable. The European Commission should assume a moderating function in this process.

8.5.2 Integrated coastal zone management

517. Integrated coastal zone management (ICZM) is a concept for sustainable development of the coastal zone. It taken to mean a dialogue process that is intended to establish a balance between, on the one hand, the advantages of economic development and the use of coastal zones by humans and, on the other hand, the benefits of the protection, conservation and restoration of the coastal zones (European Commission 2007b). The focus here is on integration, coordination, communication and participation. The principles of ICZM include knowledge-based planning, a long-term and cross-sectoral perspective, the active involvement of all actors, and consideration of both the marine and terrestrial components of the coasts (European Parliament and Council of the European Union 2002).

518. In Germany the national strategy for ICZM was adopted in 2006 (BMU 2006). The initiative goes back to a recommendation made in 2002 by the European Parliament and the Council on implementing a strategy for the integrated management of coastal zones in Europe (European Parliament abd Council of the European Union 2002). However, the national ICZM strategy hardly makes it clear what the actual purpose of ICZM is. Instead it largely confines itself to a wide-ranging description of the fields of law and economic interests that relate to the seas and coasts. The strategy describes ICZM as an informal, and hence voluntary, approach which aims to support sustainable development of the coastal zone by means of good integration, coordination, communication and participation of all actors (BMU 2006, p. 4). The coastal Länder have since developed regional ICZM strategies which seek to integrate not only the objectives, but also the instruments, policy areas and administrative levels necessary to achieve these objectives.

519. ICZM can certainly make a contribution to developing local solutions for the maintenance and conservation of the coasts. Dependent on the conviction of the actors, it is a “soft” instrument which can be applied to small coastal areas (AHLKE and WAGNER 2004). However, it is not a formal planning and decision tool in its own right. The economic interests are represented by a large number of actors and sectors that have no close spatial connection with the coasts, and which cannot be effectively steered by means of dialogue processes. Thus ICZM, owing to its weak institutional and strategic framework and its spatial limitations, has no influence on important sectors and policies relating to marine waters. Moreover, the local initiatives frequently lack adequate resources and administrative structures for implementing ICZM. What is more, the human resources assigned to ICZM are not available for implementing the MSFD. In view of its binding requirement to draw up programmes of measures and its comprehensive marine protection approach, the MSFD is of much greater importance. There is thus an urgent need to ensure that the focus is on implementation of the MSFD and not on the ICZM strategy.

8.6 Summary of recommendations

520. The conservation and sustainable use of Germany’s marine waters remains a great challenge. In particular, it is difficult to ensure that all the potential parties responsible for adverse impacts, especially agriculture, fisheries, resource extraction and shipping, are integrated in marine protection. Without such integration, however, it will not be possible to achieve significant reductions in the pressure on marine waters. In addition to rigorous implementation of the MSFD, there is therefore an urgent need to continue developing the relevant sectoral policies with regard to marine protection. The basic precondition for sustainable use of marine waters is an ambitious protection approach that takes in all sectors responsible.

– For example protection of the North Sea and Baltic Sea will only be successful if the CAP and CFP are reformed to take better account of marine protection. The SRU has recently published relevant suggestions. For shipping, further steps are necessary at European and international level, especially through the creation or further raising of ambitious environmental standards

– e.g. for emissions of atmospheric pollutants – as part of the work of the IMO.

– In the opinion of the SRU, there is currently no evidence that the initiatives for a European or national marine policy are making a substantial contribution to better integration of sectoral policies relating to the seas in marine protection. Both the European and the German approach are merely confined to summarising existing activities and suggesting concepts for better pooling and provision of data.

At present activities are focused on implementing the MSFD. In view of its comprehensive and, in parts, integrating approach it is a major building block in European marine protection. It does however possess distinct weaknesses. In particular, this framework directive does not adequately succeed in addressing the sectors and policies already mentioned as being relevant to marine protection. One possible means of giving the MSFD greater influence on other policies of relevance to marine waters is to ensure that the objectives agreed in the implementation of the MSFD are incorporated in the European maritime policy. The aim should be to require the further development of sectoral policies to take unrestricted account of the objectives for the conservation and sustainable use of marine waters. To this end the CAP, which has hitherto not been integrated in marine policy, should also be included.

Moreover, the wording of the requirements laid down in the MSFD is often very vague. Furthermore, the measures and action guidelines drawn up under the international conventions on marine protection have only been incorporated very inadequately in the MSFD.

Even the first steps in the implementation of the MSFD – description of environmental status, determination of good environmental status and establishment of objectives – have a large number of conditions to meet, partly because of the tight timetable. In future the application of possible exceptions in the directive could be a problem. Nonetheless, at present it is important to seize the opportunities arising from the MSFD and use them to advance the cause of marine protection at national and European level. Marine protected areas and – under certain conditions – maritime spatial planning can be useful instruments for this purpose. In the interests of successful implementation of the MSFD and reinforcement of marine protection, the SRU recommends the German government to observe the following points:

– In order to solve pressing problems in the field of marine protection, it is necessary at European level to urge more extensive reforms to the relevant sectoral policies, especially the CFP and the CAP. With regard to shipping, there is a need to continue developing environmental standards, primarily at European and regional/international level. One way of initiating a systematic embodiment of marine protection in the relevant sectoral policies is to lay down ambitious objectives in the implementation of the MSFD and integrate them in the European maritime policy.

– When implementing the MSFD in the North Sea and Baltic Sea, the work done under the OSPAR and Helsinki Conventions is particularly important. For one thing it provides a sound scientific basis to build on, especially with regard to data, assessments and objectives. For another, there are already cooperation arrangements in place between the coastal states of the two marine regions, and these should be used for the implementation of the MSFD. Moreover, the numerous objectives and measures already agreed upon under the regional marine protection conventions should be incorporated as far as possible in the national implementation of the MSFD.

– There is an urgent need to strengthen the MSFD implementation process. To this end it is essential to provide the human resources needed for this labour-intensive process. This also applies, for example, to coordination with the implementation of the WFD. In view of the comprehensive approach of the MSFD and the vague implementation requirements, dedicated participation in the work of coordinating implementation at European level is urgently needed. In view of the fact that the position of marine protection in Germany is in any case very weak, it is totally inappropriate not to provide additional resources for the implementation of the directive. Consideration should also be given to ways of raising public awareness of the functions of the seas, especially as important areas for nature, recreation and economic activities. For example, one could investigate the possibility of setting up a Federal Marine Agency.

– Achievement of the protection targets of the marine protected areas in the EEZ is heavily dependent on the development of sufficiently binding and effective management plans. Large, contiguous no-take zones should be established within the protected areas to create representative reference areas, among other things for the implementation of the MSFD. Within the areas of the German EEZ that are protected under the Habitats Directive and the Birds Directive, fishing activities should only be carried on if they do not conflict with the protection target for the area and provided they use only environmentally sound catch methods. The effectiveness of protected areas and their objectives must be reviewed regularly on the basis of comprehensive monitoring.

– In view of the numerous and, in some cases, increasing claims to use of Germany's marine waters it is to be welcomed that Germany has already approved spatial plans for the EEZ in the North Sea and Baltic Sea. At present, however, the character of these plans is still very much that of describing and explaining the current state of affairs. It is therefore necessary to develop maritime spatial planning in the direction of a comprehensive, balancing and forward-looking instrument and to considerably improve its steering effect for future activities in marine waters. This should treat marine protection and other use interests on equal terms. The European Commission can do much to

stimulate the creation of a coherent European spatial planning policy.

8.7 Bibliography

Ahlke, B., Wagner, G. (2004): Raumordnung auf dem Meer. Informationen zur Raumentwicklung 2004 (7–8), S. I–V.

Anianova, E. (2006): The International Maritme Organization (IMO) – Tanker or Speedboat? In: Ehlers, P., Lagoni, R. (Hrsg.): International Maritime Organisations and their Contribution towards a Sustainable Marine Development. Münster: Lit. Schriften zum See- und Hafenrecht 12, S. 77–104.

BaltSeaPlan (2012): BaltSeaPlan: Planning the future of the Baltic Sea. Hamburg, Berlin: Bundesamt für Seeschifffahrt und Hydrographie, s.Pro sustainable projects GmbH. http://www.baltseaplan.eu/ (23.02.2012).

BfN (Bundesamt für Naturschutz) (2011): Habitat Mare aktiv für die marine Lebensvielfalt: Schutzgebiete – Übersicht und Kurzfakten. Bonn: BfN. http://www.bfn.de/habitatmare/de/schutzgebiete-ueber sicht.php (14.10.2011).

BMU (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit) (2008): Nationale Strategie für die nachhaltige Nutzung und den Schutz der Meere. Vom Bundeskabinett gebilligt am 1.10.2008. Berlin: BMU.

BMU (2007): Nationale Strategie zur biologischen Vielfalt, vom Bundeskabinett am 7. November 2007 beschlossen. Berlin: BMU. http://www.bmu.de/files/pdfs/ allgemein/application/pdf/gesentwurf_biovielfalt.pdf.

BMU (2006): Integriertes Küstenzonenmanagement in Deutschland. Bestandsaufnahme und Schritte zu einer nationalen IKZM-Strategie. Bonn: BMU.

BMVBS (Bundesministerium für Verkehr, Bau und Stadtentwicklung) (2011): Entwicklungsplan Meer – Strategie für eine intergrierte deutsche Meerespolitik. Berlin: BMVBS.

BSH (Bundesanstalt für Seeschifffahrt und Hydrographie) (2011): CONTIS-Informationssystem. Hamburg: BSH. http://www.bsh.de/de/Meeresnutzung/Wirtschaft/ CONTIS-Informationssystem/index.jsp (26.10.2011).

Bund/Länder-Messprogramm (2011a): Umsetzung der Meeresstrategie-Rahmenrichtlinie – RICHTLINIE 2008/56/EG zur Schaffung eines Ordnungsrahmens für Maßnahmen der Gemeinschaft im Bereich der Meeresumwelt (Meeresstrategie-Rahmenrichtlinie): Entwurf. Anfangsbewertung der deutschen Nordsee nach Artikel 8 Meeresstrategie-Rahmenrichtlinie. Hamburg: Bund/Länder-Messprogramm. http://www.meeresschutz .info/index.php/berichte.html?file=tl_files/meeresschutz/ berichte/Anfangsbewertung_Nordsee.pdf (22.02.2012).

Bund/Länder-Messprogramm (2011b): Umsetzung der Meeresstrategie-Rahmenrichtlinie – RICHTLINIE 2008/ 56/EG zur Schaffung eines Ordnungsrahmens für Maßnahmen der Gemeinschaft im Bereich der Meeresumwelt (Meeresstrategie-Rahmenrichtlinie): Entwurf. Anfangsbewertung der deutschen Ostsee nach Artikel 8 Meeresstrategie-Rahmenrichtlinie. Hamburg: Bund/Länder-Messprogramm. http://www.meeresschutz .info/index.php/berichte.html?file=tl_files/meeresschutz/ berichte/Anfangsbewertung_Ostsee.pdf (22.02.2012).

Bund/Länder-Messprogramm (2011c): Umsetzung der Meeresstrategie-Rahmenrichtlinie – RICHTLINIE 2008/56/EG zur Schaffung eines Ordnungsrahmens für Maßnahmen der Gemeinschaft im Bereich der Meeresumwelt (Meeresstrategie-Rahmenrichtlinie): Entwurf. Beschreibung eines guten Umweltzustands für die deutsche Nordsee nach Artikel 9 Meeresstrategie-Rahmenrichtlinie. Hamburg: Bund/Länder-Mess-programm. http://www.meeresschutz.info/index.php/be richte.html?file=tl_files/meeresschutz/berichte/GES_Nord see.pdf (22.02.2012).

Bund/Länder-Messprogramm (2011d): Umsetzung der Meeresstrategie-Rahmenrichtlinie – RICHTLINIE 2008/56/EG zur Schaffung eines Ordnungsrahmens für Maßnahmen der Gemeinschaft im Bereich der Meeresumwelt (Meeresstrategie-Rahmenrichtlinie): Entwurf. Beschreibung eines guten Umweltzustands für die deutsche Ostsee nach Artikel 9 Meeresstrategie-Rahmenrichtlinie. Hamburg: Bund/Länder-Messpro-gramm. http://www.meeresschutz.info/index .php/berich-te.html?ile=tl_files/meeresschutz/berichte/GES_Ostsee.pd f (22.02.2012).

Bund/Länder-Messprogramm (2011e): Umsetzung der Meeresstrategie-Rahmenrichtlinie – RICHTLINIE 2008/ 56/EG zur Schaffung eines Ordnungsrahmens für Maßnahmen der Gemeinschaft im Bereich der Meeresumwelt (Meeresstrategie-Rahmenrichtlinie): Entwurf. Festlegung von Umweltzielen für die deutsche Nordsee nach Artikel 10 Meeresstrategie-Rahmen-richtlinie. Hamburg: Bund/Länder-Messprogramm. http:// www.meeresschutz.info/index.php/berichte.html?file=tl_ files/meeresschutz/berichte/Umweltziele_Nordsee.pdf (22.02.2012).

Bund/Länder-Messprogramm (2011f): Umsetzung der Meeresstrategie-Rahmenrichtlinie – RICHTLINIE 2008/56/EG zur Schaffung eines Ordnungsrahmens für Maßnahmen der Gemeinschaft im Bereich der Meeresumwelt (Meeresstrategie-Rahmenrichtlinie): Entwurf. Festlegung von Umweltzielen für die deutsche Ostsee nach Artikel 10 Meeresstrategie-Rahmenrichtlinie. Hamburg: Bund/Länder-Messprogramm. http://www. meeresschutz.info/index.php/berichte.html?file=tl_files/ meeresschutz/berichte/Umweltziele_Ostsee.pdf (11.11.2011).

Calliess, C., Ruffert, M. (2011): EUV/AEUV. Das Verfassungsrecht der Europäischen Union mit Europäischer Grundrechtecharta. Kommentar. 4. Aufl. München: Beck.

Deutscher Bundestag (2011a): Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten Dr. Valerie Wilms, Undine Kurth (Quedlinburg), Dorothea Steiner, weiterer Abgeordneter und der Fraktion BÜNDNIS 90/ DIE GRÜNEN. Drucksache 17/4514. Umsetzung der Meeresstrategie-Rahmenrichtlinie. Berlin: Deutscher Bundestag. Bundestagsdrucksache 17/4765.

Deutscher Bundestag (2011b): Unterrichtung durch die Bundesregierung. Zweiter Bericht der Bundesregierung über die Entwicklung und Zukunftsperspektiven der maritimen Wirtschaft in Deutschland. Berlin: Deutscher Bundestag. Bundestagsdrucksache 17/5572.

Deutscher Bundestag (2010): Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten Dr. Valerie Wilms, Cornelia Behm, Hans-Josef Fell, weiterer Abgeordneter und der Fraktion BÜNDNIS 90/DIE GRÜNEN. Drucksache 17/1892. Gefahren der Ölförderung in deutschen und europäischen Meeren. Berlin: Deutscher Bundestag. Bundestagsdrucksache 17/2208.

Deutscher Bundestag (2008): Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten Undine Kurth (Quedlinburg), Rainder Steenblock, Nicole Maisch, weiterer Abgeordneter und der Fraktion BÜNDNIS 90/DIE GRÜNEN. Drucksache 16/7596. Abbau von Bodenschätzen in deutschen Meeresgewässern. Berlin: Deutscher Bundestag. Bundestagsdrucksache 16/7911.

Erbguth, W. (2012): Europarechtliche Vorgaben für eine maritime Raumordnung: Empfehlungen. Natur und Recht 34 (2), S. 85–91.

Erbguth, W. (2011): Raumordnungspläne für deutsche Ausschließliche Wirtschaftszone. Inhalte und rechtliche Beurteilung. Umwelt- und Planungsrecht 31 (6), S. 207–211.

European Commission (2011a): Informal Meeting of Water and Marine Directors of the European Union, Candidate and EFTA Countries. Budapest, 26–27 May 2011. Final Synthesis. Brüssel: Europäische Kommission. http://ec.europa.eu/environment/water/marine/pdf/minutes_26-27_may_2011.pdf (22.02.2012).

European Commission (2011b): Marine Strategy Framework Directive – Implementation of the directive. Brüssel: Europäische Kommission. http://ec.europa.eu/environment/ water/marine/implementation_en.htm (22.02.2012).

European Commission (2011c): Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen. Lebensversicherung und Naturkaptial: Eine Biodiversitätsstrategie der EU für das Jahr 2020. KOM(2011) 244 endg. Brüssel: Europäische Kommission.

European Commission (2010a): Beschluss der Kommission vom 1. September 2010 über Kriterien und methodische Standards zur Festsstellung des guten Umweltzustands von Meeresgewässern. K(2010) 5956. Brüssel: Europäische Kommission.

European Commission (2010b): Mitteilung der Kommission an das Europäische Parlament, den Rat, den europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen. Maritime Raumordnung in der EU – Aktueller Stand und Ausblick. KOM(2010) 771 endg. Brüssel: Europäische Kommission.

European Commission (2009): Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen. Strategische Ziele und Empfehlungen für die Seeverkehrspolitik der EU bis 2018. KOM(2009) 8 endg. Brüssel: Europäische Kommission.

European Commission (2008): Mitteilung der Kommission. Fahrplan für die maritime Raumordnung. Ausarbeitung gemeinsamer Grundsätze in der EU. KOM(2008) 791 endg. Brüssel: Europäische Kommission.

European Commission (2007a): Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen. Eine integrierte Meerespolitik für die Europäische Union. KOM(2007) 575 endg. Brüssel: Europäische Kommission.

European Commission (2007b): Mitteilung der Kommission. Bericht an das Europäische Parlament und den Rat. Bewertung des integrierten Küstenzonenmanagements (IKZM) in Europa. KOM (2007) 308 endg. Brüssel: Europäische Kommission.

European Commission (2006): Grünbuch. Die künftige Meerespolitik der EU: Eine europäische Vision für Ozeane und Meere. KOM(2006) 275 endg. Brüssel: Europäische Kommission.

European Commission (2005): Mitteilung der Kommission an den Rat und das europäische Parlament. Thematische Strategie für den Schutz und die Erhaltung der Meeresumwelt. KOM(2005) 504 endg. Brüssel: Europäische Kommission.

European Commission – Generaldirektion Umwelt (2012): A Marine Strategy Directive to save Europe's seas and oceans. Brüssel: Europäische Kommission. http://ec.europa.eu/environment/water/marine/directive_en.htm (24.02.2012).

European Parliament, Rat der Europäischen Union (2002): Empfehlung 2002/413/EG des Europäischen Parlaments und des Rates vom 30. Mai 2002 zur Umsetzung einer Strategie für ein integriertes Management der Küstengebiete in Europa. Brüssel: Europäisches Parlament, Rat der Europäischen Union. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002H0413:DE:HTML (23.02.2012).

Heinrich-Böll-Stiftung (2003): World Summit 2002 Johannesburg – Plan of implementation, the action plan. http://www.worldsummit2002.org/ (22.02.2012).

Heiskanen, A.-S., Bund, W. van de, Cardoso, A. C. (2011): Marine Strategy Framework Directive: Experiences from the Water Framework Directive Implementation. www.ifremer.fr/2012MarineTargets/actes/Anna_Stiina.pdf (22.02.2012).

HELCOM (Helsinki-Kommission) (2010a): Ecosystem Health of the Baltic Sea 2003–2007: HELCOM Initial Holistic Assessment. Helsinki: HELCOM. Baltic Sea Environment Proceedings 122.

HELCOM (2010b): Maritime Activities in the Baltic Sea. An integrated thematic assessment on maritime activities and response to pollution at sea in the Baltic Sea Region. Helsinki: HELCOM. Baltic Sea Environment Proceedings 123.

HELCOM (2009): Eutrophication in the Baltic Sea. An integrated thematic assessment of the effects of nutrient enrichment and eutrophication in the Baltic Sea region. Helsinki: HELCOM. Baltic Sea Environment Proceedings 115B.

HELCOM (2007): The Baltic Sea Action Plan. A new environmental strategy for the Baltic Sea region. Helsinki: HELCOM.

HELCOM (2006): Draft HELCOM Thematic Assessment Report on Maritime Transport (doc. HELCOM 27/2006, 2/1). Helsinki: HELCOM. http://meeting.helcom.fi/c/document_library/get_file?p_l_id=18971&folderId=72898&name=DLFE-29163.pdf (24.02.2012).

HELCOM (o. J. a): Continuation of the Baltic-wide assessment of coastal fish communities in support of an ecosystem-based management (HELCOM FISH-PRO) (2011-2013). Helsinki: HELCOM. http://www.helcom.fi/projects/on_going/en_GB/FISH_PRO/?u4.highlight=MSFD (22.02.2012).

HELCOM (o. J. b): Review of the ecological targets for eutrophication of the HELCOM BSAP (HELCOM TARGREV) (2010-2011). Helsinki: HELCOM. http://www.helcom.fi/projects/on_going/en_GB/targrev/ (22.02.2012).

HELCOM, OSPAR Commission (2003): First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions (JMM), Bremen: 25–26 June 2003. Statement on the Ecosystem Approach to the Managment of Human Activitites: „Towards an Ecosystem Approach to the Management of Human Activities". Bremen: HELCOM, OSPAR Commission.

Hoof, L. van, Tatenhove, J. van (2009): EU marine policy on the move: The tension between fisheries and maritime policy. Marine Policy 33 (4), S. 726–732.

ICES (International Council for the Exploration of the Sea) (o. J.): Climate change: Changing oceans. Kopenhagen: ICES.

IMO (International Maritime Organization) (2012): International Shipping Facts and Figures – Information Resources on Trade, Safety, Security, Environment. London: IMO Maritime Knowledge Centre.

Irmer, U., Werner, S., Claussen, U., Leujak, W., Arle, J. (2010a): Meeresschutz und Schutz der Binnengewässer – Gemeinsamkeiten und Unterschiede. Wasserwirtschaft 2010 (7–8), S. 33–37.

Irmer, U., Werner, S., Claussen, U., Leujak, W., Arle, J. (2010b): Verhältnis von EG-Wasserrahmenrichtlinie und EG-Meeresstrategie-Rahmenrichtlinie. Gemeinsamkeiten und Unterschiede. In: Pinnekamp, J. (Hrsg.): 43. Essener Tagung für Wasser- und Abfallwirtschaft: „Perspektiven und Risiken", 17.3.–19.3.2010 in der Messe Essen Ost. Aachen: Gesellschaft zur Förderung der Siedlungswasserwirtschaft an der RWTH Aachen. Gewässerschutz, Wasser, Abwasser 220, S. 40–57.

Kachel, M. J. (2006): Competencies of International Maritime Organisations to establish Rules and Standards. In: Ehlers, P., Lagoni, R. (Hrsg.): International Maritime Organisations and their Contribution towards a Sustainable Marine Development. Münster: Lit. Schriften zum See- und Hafenrecht 12, S. 21–52.

Knefelkamp, B., Krause, J., Narberhaus, I. (2011): Die europäische Meeresstrategie-Rahmenrichtlinie – eine Chance für den Schutz der marinen Biodiversität? Natur und Landschaft 86 (9–10), S. 424–428.

Knudsen, O. F., Hassler, B. (2011): IMO legislation and its implementation: Accident risk, vessel deficiencies and national administrative practices. Marine Policy 35 (2), S. 201–207.

Krause, J., Narberhaus, I., Knefelkamp, B., Claussen, U. (2011a): Die Vorbereitung der deutschen Meeresstrategien. Leitfaden zur Umsetzung der Meeresstrategie-Rahmenrichtlinie (MSRL-2008/56/EG) für die Anfangsbewertung, die Beschreibung des guten Umweltzustands und die Festlegung der Umweltziele in der deutschen Nord- und Ostsee. Norden: Arbeitsgemeinschaft Bund/ Länder-Messprogramm für die Meeresumwelt von Nord- und Ostsee.

Krause, J., Wollny-Goerke, K., Boller, F., Hauswirth, M., Heinicke, K., Herrmann, C., Körber, P., Narberhaus, I., Richter-Kemmermann, A. (2011b): Die deutschen Meeresnaturschutzgebiete in Nord- und Ostsee. Natur und Landschaft 86 (9–10), S. 397–409.

Lange, J., Brandt, A. (Hrsg.) (2009): Maritime Wirtschaft. Chancen und Aufgaben der Regionalentwicklung im deutschen Nordseeraum. Rehburg-Loccum: Evangelische Akademie Loccum. Loccumer Protokolle 18/08.

Marggraf, R., Sauer, U., Lauterbach, F. R., Brandt, A., Dickow, M. C., Voßen, D., Weppe, B. (2011): Gutachten zur Erstellung der ökonomischen Anfangsbewertung im Rahmen der Umsetzung der Meeresstrategie-Rahmenrichtlinie (MSRL). Göttingen, Hannover: Georg-August-Universität Göttingen, NORD/LB Regionalwirtschaft, RegioNord Consulting GmbH.

Markus, T. (2010): Die Regulierung anthropogener Lärmeinträge in die Meeresumwelt. Natur und Recht 32 (4), S. 236–244.

Markus, T., Schlacke, S. (2009): Die Meeresstrategie-Rahmenrichtlinie der Europäischen Gemeinschaft. Zeitschrift für Umweltrecht 20 (10), S. 464–472.

Merck, T. (2011): Vermeidung und Minimierung anthropogener Belastungen mariner Ökosysteme. Natur und Landschaft 86 (9–10), S. 437–441.

Nolte, N. (2010): Nutzungsansprüche und Raumordnung auf dem Meer. HANSA International Maritime Journal 147 (9), S. 79–83.

Nordheim, H. von, Packeiser, T., Durussel, C. (2011): Auf dem Weg zu einem weltweiten Netzwerk von Meeresschutzgebieten. Natur und Landschaft 86 (9–10), S. 382–387.

OSPAR Commission (2010a): The North-East Atlantic Environment Strategy. Strategy of the OSPAR Commission for the Potection of the Marine Environment of the North-East Atlantic 2010–2020. London: OSPAR Commission.

OSPAR Commission (2010b): Quality Status Report 2010. London: OSPAR Commission.

PLANCO Consulting (2007): Prognose der deutschlandweiten Verkehrsverflechtungen. Seeverkehrsprognose (LOS 3). Zusammenfassung. Essen: PLANCO Consulting.

Rat der Europäischen Gemeinschaften (1993): Beschluß des Rates vom 25. Oktober 1993 über den Abschluß des Übereinkommens über die biologische Vielfalt (93/626/EWG) Brüssel: Rat der Europäischen Gemeinschaften.

Roberts, C. M., Hawkins, J. P., Gelly, F. R. (2005): The role of marine reserves in achieving sustainable fisheries. Philosophical Transactions of the Royal Society / B 360, S. 123–132.

Salomon, M. (2009): Recent European initiatives in marine protection policy: Towards lasting protection for Europe`s seas? Environmental Science & Policy 12 (3), S. 359–366.

Salomon, M., Krohn, S. (2006): Ein kritischer Blick auf den Vorschlag der Europäischen Kommission für eine thematische Strategie zum Schutz der europäischen Meere. NordÖR 9 (10), S. 371–378.

SCBD (Secretariat of the Convention on Biological Diversity) (2010): COP 10 Decision X/29. Nagoya, 18–29 October 2010. Marine and coastal biodiversity. Montreal: SCBD. http://www.cbd.int/decision/cop/?id=12295 (20.10.2011).

Schubert, M. (2009): Rechtfragen der maritimen Raumplanung – unter besonderer Berücksichtigung der Fischerei. Natur und Recht 31 (12), S. 834–841.

SRU (Sachverständigenrat für Umweltfragen) (2011a): Fischbestände nachhaltig bewirtschaften. Zur Reform der Gemeinsamen Fischereipolitik. Berlin: SRU. Stellungnahme 16.

SRU (2011b): Wege zur 100 % erneuerbaren Stromversorgung. Sondergutachten. Berlin: Erich Schmidt.

SRU (2009): Für eine zeitgemäße Gemeinsame Agrarpolitik (GAP). Berlin: SRU. Stellungnahme 14.

SRU (2008): Umweltgutachten 2008. Umweltschutz im Zeichen des Klimawandels. Berlin: Erich Schmidt.

SRU (2006): Der Vorschlag der Europäischen Kommission für eine Meeresschutzstrategie – Rückzug aus der europäischen Verantwortung? Berlin: SRU. Kommentar zur Umweltpolitik 5.

SRU (2004): Meeresumweltschutz für Nord- und Ostsee. Sondergutachten. Baden-Baden: Nomos.

Statistisches Bundesamt (2011): Verkehrsleistung. Güterbeförderung. Wiesbaden: Statistisches Bundesamt. http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/DE/Content/Statistiken/Verkehr/Gueterbefoerderung/Tabellen/Content75/Gueterbefoerderung,templateId=renderPrint.psml (10.02.2012).

Steele, J. H., Thorpe, S. A., Turekian, K. K. (2010): Marine policy and economics : a derivative of the Encyclopedia of ocean sciences. 2nd ed. London, Burlington, San Diego: Academic Press.

Toropova, C., Meliane, I., Laffoley, D., Matthews, E., Spalding, M. (Hrsg.) (2010): Global Ocean Protection. Present Status and Future Possibilities. Brest, Gland, Washington, DC, New York, Cambridge, Arlington, Tokyo: Agence des aires marines protégées, International Union for Conservation of Nature, UNEP World Conservation Monitoring Centre, The Nature Conservancy, United Nations University, The Wildlife Conservation Society.

UBA (Umweltbundesamt) (2010): Abfälle im Meer – ein gravierendes ökologisches, ökonomisches und ästhetisches Problem. Dessau-Roßlau: UBA.

UBA (Umweltbundesamt) (2008a): Perspektiven der europäischen Meerespolitik. Dessau-Roßlau: UBA.

UBA (2008b): Raumordnung in der deutschen ausschließlichen Wirtschaftszone (AWZ) – Beteiligungsverfahren. Stellungnahme des UBA zum Entwurf des Raumordnungsplans mit Umweltbericht (Entwurf einer Rechtsverordnung über die Raumordnung in der AWZ; Stand: 13.06.2008). Dessau-Roßlau: UBA.

UNEP (United Nation Environment Programme) (2000): Decisons adopted by the conference of the parties to the convention on biological diversity at its fifth meeting. Nairobi, 15–26 May 2000. http://www.cbd.int/decisions/cop/?m=cop-05 (20.02.2012).

Vereinte Nationen (2002): Bericht des Weltgipfels für nachhaltige Entwicklung. Johannesburg (Südafrika), 26. August – 4. September 2002. (Auszugsweise Übersetzung). Johannesburg: Vereinte Nationen.

Wasserdirektoren (2001): Common Implementation Strategy for the Water Framework Directive (2000/60/EC). Strategic Document as agreed by the Water Directors under the Swedish Presidency. Brüssel: Rat der Europäischen Union. http://ec.europa.eu/.../water/water.../pdf/strategy.pdf (22.02.2012).

WFD Navigation Task Group, Marine Strategy Navigation Group (2010): Overlap between the EU Water Framework Directive and the EU Marine Strategy Directive in Coastal Waters. Brussels: WFD Navigation Task Group, Marine Strategy Navigation Group http://www.pianc.org (22.02.2012).

WWF Deutschland (2011): Schutz den Schutzgebieten. Anforderungen an ein ökosystemgerechtes Fischereimanagement in den Natura 2000-Gebieten in der Nord- und Ostsee. Berlin: WWF Deutschland.

Members

Status: 2011

Prof. Dr. Martin Faulstich
(Chair)
Full Professor of Resource and Energy Technology at Technische Universität München,
Director of Straubing Centre of Science for Renewable Resources

Prof. Dr. Heidi Foth
(Deputy Chair)
Professor of Environmental Toxicology and
Director of the Institute for Environmental Toxicology
at the Martin Luther University in Halle-Wittenberg

Prof. Dr. Christian Calliess
Professor of Public Law and European Law
at the Department of Law
at the Free University Berlin

Prof. Dr. Olav Hohmeyer
Professor of Energy and Resource Management
at the University of Flensburg

Prof. Dr. Karin Holm-Müller
Professor of Resource and Environmental Economics
at the Department of Agriculture
at the Rheinische Friedrich-Wilhelms-Universität in Bonn

Prof. Dr. Manfred Niekisch
Professor for International Nature Conservation
at the Goethe-University of Frankfurt and
Director of Frankfurt Zoo

Prof. Dr. Miranda Schreurs
Professor of Comparative Politics and
Head of the Environmental Policy Research Unit
at the Free University Berlin

German Advisory Council on the Environment

Secretariat
Luisenstraße 46
10117 Berlin

Phone: +49 (030) 26 36 96-0
E-Mail: info@umweltrat.de
Internet: www.umweltrat.de