SRU Der Rat von Sachverständigen für Umweltfragen

# Marine Environment Protection in the North and Baltic Seas

## Summary Report

February 2004

# German Advisory Council on the Environment (SRU)



This special report is the result of the combined and tireless efforts of Secretariat staff and Council members. The scientific staff in place at the time this report was compiled were:

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## Preface

With its pioneering Special Report on the Environmental Problems of the North Sea, published 1980, the German Advisory Council on the Environment took to task the issue of marine environment protection. While some reductions in pollution levels have been achieved in the North and Baltic seas over the past 25 years, a number of problems remain largely unsolved and others have exacerbated the situation. The seas thus remain at considerable risk. Increasing pressures of use on the North and Baltic seas call for far-reaching amendments in key policy areas.

- The German government should continue to pursue the positive approaches taken to reform the EU's Common Agricultural Policy. If subsidy of intensive agriculture continues, the demanding target set by the Parties to the OSPAR Agreement on Protection and Conservation of the North East Atlantic (OSPAR Convention), to reduce anthropogenic eutrophication to 'close to zero' by 2010, will certainly be missed.

- The international regime's generation target of zero emissions of hazardous substances by 2020 must be integrated into the regulatory model currently under discussion for EU chemicals policy. The reallocation of decisionmaking powers at European level from the Council of Environment Ministers to the Competition Council gives rise to fears that after the compromises that have already been made, the target will now be missed entirely.
- While the EU's Common Fisheries Policy has been given an acceptable legislative framework in environmental policy terms, systematic enforcement is still lacking. With over-fishing of most target fish species and what are sometimes extremely harmful catch methods, intensive fishing poses a risk to ecosystems in the North and Baltic seas. The German Advisory Council on the Environment recommends that the German government push for Europe-wide compliance with legal requirements, including stringent setting of catch quotas according to the scientific recommendations made by the ICES.
- The Council welcomes the EU initiative on ship safety also advocated by German government, and particularly the accelerated phaseout of single-hull tankers. With what will soon amount to around 20% of world tonnage under EU Member State flags, the EU is most certainly in a position to play a pioneer role in the inappropriately hesitant International Maritime Organisation (IMO). The German government must call for and promote appropriate EU policy.

– Alongside the ubiquitous pressures that pollutants, fisheries and shipping place on the North and Baltic seas come rapidly increasing local encroachments from marine mining, dumping of dredged materials, pipelines, cable channels, mariculture, tourism and the planned expansion of offshore wind farms. In the face of such encroachments, planning regulations and licensing requirements must be further developed to ensure that the seas are protected despite the increasing pressures of use. The German Advisory Council on the Environment welcomes in particular the initiative of the Federal Environment Ministry to report protected areas to the European Commission under the Habitats Directive and the Birds Directive. For the benefit of those representing interests in the use of such areas, the Council wishes to point out that at present, selection of protected areas takes place on nature protection criteria alone. Conflicts of interest are only aired in the European Commission's Natura 2000 decisionmaking process.

From numerous discussions on the subject, the Council has the impression that there is much common ground between the German government's political strategies for marine environment protection and the recommendations for action contained in this report. The German Advisory Council on the Environment trusts that this comprehensive special report will assist the German government in further developing and structuring a national marine environment programme and a strategy to protect and conserve the marine environment as planned by the European Commission.

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# 1 Marine Environment of North and Baltic Seas still at Risk

**1.*** The North and Baltic seas have long been subjected to significant pollution from the industrialised countries of Northern Europe. Despite the remarkable reductions achieved so far, the situation remains problematical. Recent reports compiled by marine protection organisations and scientific research institutes impressively illustrate the various ways in which marine ecosystems are both endangered and harmed by Europe's fishing industry, nutrient and pollution inputs, shipping, and diverse local encroachments such as raw materials extraction, tourism, coastal protection and, more recently, the use of wind energy. These reports include:

- Quality Status Reports published by the OSPAR Commission for the Protection of the Marine Environment of the North East Atlantic.
- The reports of the Baltic Marine Environment Protection Commission (Helsinki Commission).
- The Progress Reports of the International Conference on Protection of the North Sea.
- The Status Reports of the International Council for the Exploration of the Sea (ICES).

In the two decades since the German Advisory Council on the Environment published its 1980 Special Report on the Environmental Problems of the North Sea, significant improvements have been achieved in some of the more serious issues. The greatest reductions can be accredited to land-based activities involving pollution control, greatly improved wastewater treatment, a range of substance and discharge bans, and measures to combat oil discharges from shipping.

Although significant reductions in pollution and nutrient inputs have been achieved in some areas, there is still a long way to go before sounding the environmental 'all clear'. Both the North and the Baltic seas remain under considerable – in some areas increasing – pressure of use. For example, no sufficient improvements have been achieved as regards the impact of fishing and nutrient inputs from agriculture. Further growth is forecast for other industrial sectors that have either direct or indirect impacts on marine resources (examples include tourism, mariculture and shipping). If we are to achieve sustainable, environmentally sound management of the North and Baltic seas over time, then there is still need for greater efforts and, in some cases, for more fundamental structural changes – particularly in dealing with intensive fishing and agriculture. The following is a summary of the German Advisory Council on the Environment's position on the action needed and of the key policy recommendations contained in its report.

# 2 Paths to Sustainable Fishing

## Existing Pressures and Risks

**2.*** Over-fishing of many commercial target stocks means that intensive fishing with its current surplus capacity has an increasing impact on marine ecosystems. This has lead to threatening stock reductions (both locally and globally) in many intensively fished species. Economically significant fish stocks in the North and Baltic seas are beyond 'safe biological limits', putting stock-replenishing reproduction within these populations at risk. Many target fish stocks continue to be managed in a non-sustainable way. A well-known example of greatly decimated stocks is the cod, whose North Sea stocks have for many years been fished well in excess of the safe biological limit. Recovery of stocks is thus dependent in the longer term on the complete closure of the cod fisheries. Some sensitive species – like the European eel and the shark species found in the North Sea – have not only suffered considerable decimation among natural stocks, but their habitats have also been affected to such an extent that their occurrence in the North Sea is now at risk (the eel is also at risk in the Baltic Sea).

**3.*** Intensive fishing does not only endanger target species. Many non-commercial, non-utility organisms end as by-catch in fishing nets. These usually die and are thrown overboard as discards. The use of bottom nets harms benthic communities: a pattern can be observed in areas where bottom nets are used in that significant reductions in sensitive benthic species go hand in hand with an increase in the number of opportunists.

## Action Needed and Recommendations

**4.*** Environmentally sound fishing that is sustainable over time can only be achieved if the necessary measures are taken in order to:

- Manage commercial target fish stocks well above safe biological limits or to restore that level where required.
- Significantly reduce by-catches and discards.
- Better protect valuable benthic populations from harmful fishing practices.

**5.*** In implementing these targets, the EU carries a key responsibility given its extensive powers as regards the fishing industry and the great extent to which the Common Fisheries Policy (CFP) shapes the fishing sector. But despite better insight on the part of the EU Commission, the EU has not succeeded in aligning Europe's fishing industry with basic sustainability requirements. The German Advisory Council on the Environment thus welcomes the fact that in the EU Council of Fisheries Ministers, the

German government has called for sustainable management of resources. The Council recommends that the German government remains expressly committed to ensuring that the Community fulfils the basic requirements for sustainable fisheries. This change in approach must be guided by the following maxims:

- *Stringent approach to resources management*: conservation of stocks must at least take clear priority over short-term economic considerations. The conservation or recovery of stocks at a productive, sustainable biomass level is of utmost importance for all targets laid down in the Basic Regulation for the CFP. This also applies to socio-political objectives aiming to secure an acceptable standard of living for people employed in the fisheries sector. Any over-shooting of long-term sustainable yields will by default lead to disproportionately high yield losses and subsequently to a reduction in living standards. There is no sensible reason for – and the CFP contains no legal basis on which to place – short-term economic considerations aimed at keeping this vastly over-sized sector on its feet from one month to the next.
- *Efficient catch quotas in line with scientific recommendations made by the ICES*: instead of negotiating annual total allowable catches (TACs), multi-annual catch limits should be fixed under the management and recovery plans for the stocks involved. The ICES' best available scientific prognosis on fish stock capacities must serve as the sole criterion. The EU Commission's proposal of June 2003 for a Regulation establishing measures for the recovery of cod stocks could effect significant advancements by basing minimum stock levels on fixed total allowable catch (TAC) limits and by proposing TAC-based restrictions on fishing-effort. This is dependent on the EU Council of Fisheries Ministers both agreeing to and enforcing a management system of this nature.
- *Protection of indirectly affected marine ecosystems*: the CFP must also take full account of the species conservation requirements under Article 6 EC and Article 174 EC, which also recognise indirectly affected marine ecosystems as being worthy of protection. The objectives of the new Basic Regulation, which have been expanded to include protection of marine ecosystems as a whole, must be put into practice without delay. The FAO Code of Conduct for Responsible Fisheries ought to play a decisive role in practical implementation of the precautionary principle.
- *Restricting by-catch intensive industrial fishing*: as a path to sustainable fisheries, the German Advisory Council on the Environment in its 2002 Environmental Report recommended restricting fishing for industrial use in particular as the benefits of this type of fishing are, to some extent, questionable (SRU 2002, Paragraph No. 749). This remains valid where tight-meshed nets used in industrial landings result in especially harmful by-catches. Experts see the large cod by-catch involved in

Norway pout fishing as an area for particular concern. To restrict fishing of this type, specific catch bans and protected areas must be set out in the integrated management plans.

- *Codes of practice to reduce by-catches and discards:* by-catches should be reduced (where practicable) by prescribing the use of larger-mesh nets, deterrent systems and escape windows, and by developing guidelines that require fishermen to avoid by-catch intensive areas. The protected area network must be designated with particular regard to reducing by-catches. A general ban on discards should be implemented with effective sanctions.
- *Comprehensive, integrated, long-term management and recovery plans*: the instruments for a long-term planning approach to fisheries are welcomed in principle and must now be put into practice without further delay. Long-term management planning must not however be allowed to stop at fixing TACs for specific species. Instead, management plans must properly coordinate quotas (in terms of species, numbers, and spatial applicability) with the protected areas strategies and catch method regulations. Such plans should also connect with other claims to use of the seas: in essence, they need to be integrated into a future marine management plan.
- *Protected area network*: for the North and Baltic seas, a holistic protected area concept must be developed to set out in an adequate way specific long-term or temporary restrictions on fisheries while taking account of the level of regional importance attached to stock conservation, other marine ecosystems and other demands on the sea.
- *Monitoring and enforcement*: the more stringent provisions set out in the new Basic Regulation will only help reduce the occurrence of infringements if their implementation is effective in practice. Given that control by Member States is often lacking and that the competent authorities in Member States – especially in regions dependent on the fishing industry – have a tendency to 'make allowances', monitoring should be performed, or at least overseen, to a greater extent by the more centralised and more European organisations of the EU Commission. The new Basic Regulation takes the right approach on this issue but its proposed common inspection system remains toothless without staff and funding. It is not only for this reason that the council welcomes the EU Commission's initiative towards a new Community Fisheries Control Agency to achieve centralised, independent organisation of monitoring backed by funding from the Member States. The council also attaches great importance to tighter sanctions under harmonised criminal law across the Member States.
- *Research and development*: significantly more funding must be invested into researching the impact of fishing and into developing environmentally sound

technologies and practices. As the 'culprits', the fisheries should, first and foremost, be forced to support research and development projects. This applies both to financing and – more particularly – to cooperation needed in onsite investigations, say in documenting and monitoring of by-catch. The internationally applicable precautionary principle in itself places an obligation on the fisheries sector.

- *Withdrawing subsidies*: the construction of new fishing vessels should no longer be promoted by the Community or the Member States. And subsidies that even indirectly contribute to maintaining overcapacities must be withdrawn. Funds should be used solely for the purposes of socio-economic activities directed at shrinking the sector and, where appropriate, to support those fisheries and producer cooperatives who already meet sustainable resources management requirements.
- *EU Commission's regulatory powers*: the Council sees as positive that both the EU Commission and the Member States (within their 12-mile zones) will be authorised to implement emergency measures if stock conservation or the marine ecosystem is seriously at risk from fishing activities and immediate action is needed. In most cases, the foreseen period of either six or three months for measures implemented by the EU Commission or the Member States would probably be too short to allow lasting prevention of a serious threat to a resource or stocks. The EU Commission should, therefore, be granted significantly broader powers of enforcement.

**6.*** As regards national responsibilities the German Advisory Council on the Environment recommends the following:

- Set out stringent management rules and designate specific protected areas for the 12-mile zone to exclude beam trawling in sensitive areas and also to safeguard spawning areas and breeding grounds from potentially harmful fishing activities. The Council nevertheless recognises the wide-ranging and welcome measures already implemented by the responsible *Länder* (states), especially in the Wadden Sea mudflats.
- Report to the EU Commission and designate under the EC Habitat and Bird directives suitable protected areas in the Exclusive Economic Zone (EEZ), indicating the importance of the areas for reproduction of fish stocks.
- Integrate a protected and closed area plan into a future coastal waters and EEZ plan to achieve differentiated, area-specific spatial regulation of fisheries that is coordinated with the many other demands involved.
- Develop action plans and guidelines for environmentally sound, acceptable regional fishing practices and integrate fishermen into the process.
- Significantly increase controls to ensure compliance with requirements for compatible fishing activities in German waters.

**7.*** To make TACs and stock management more efficient, consideration must be given to making TACs more flexible as regards fishermen's rights of access to fish stocks. By introducing a flexible quota management system to strengthen individual rights of access to fish stocks, EU Member States and their Common Fisheries Policy could make a significant contribution to conserving fish stocks, to reducing overcapacities and to enhancing the profitability of the fishing industry. Europe-wide harmonisation of quota management system implementation and flexible transfer of individual catch rights within the EU could considerably enhance efficiency in national fisheries management. As regards a system comprising tradable catch quotas, the German Advisory Council on the Environment believes that for coastal areas preference should be given to group-based management founded on spatial access rights.

# 3 Protecting the North and Baltic Seas From Hazardous Substances and Radionuclides

## Existing Pressures and Risks

**8.*** The oceans are pollution sinks. Almost all anthropogenic pollutants eventually find their way into the sea. Some of these pose an environmental risk due either to high input levels, persistence and accumulation, or even direct toxic impact. Risks of this type are posed in particular by heavy metals, some persistent organic compounds and oil inputs. Endocrine disruptors and polar pollutants also give cause for increasing concern.

The days of huge *heavy metal* inputs are over. Since the mid 1980s, most North and Baltic Sea states have managed to significantly reduce inputs of many substances, and thereby achieved a proven reduction in the concentrations of those substances in the water. Because heavy metals are non-biodegradable and are not extracted from the biogeochemical cycle, they can be found in sediment and biota (sometimes in high concentrations), especially in heavily polluted areas of the German Bight and other large river estuaries. In some areas, cadmium, mercury and lead are still found in concentrations that can have a negative impact on biota.

The risks posed by *organic pollutants* have only been researched for a limited number of substances or substance groups, making risk assessment difficult. Nevertheless, some of these substances – like polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), lindane, dioxins, nonylphenol and tributyl tin (TBT) – have been identified as particularly harmful. Their approval and use has been regulated, bringing

about significant reductions in their inputs. In some areas, however, concentrations of these substances in the marine ecosystem still reach or even exceed toxicological impact thresholds. At particular risk are river input areas and coastal zones near industrial settlements, in which the concentrations of many pollutants exceed background values or even eco-toxicological assessment criteria. This is why, for example, fish-eating seabirds and marine mammals in the Baltic Sea are still contaminated with high levels of PCBs, dioxins and DDT. The fact that high concentrations are sometimes measured for substances whose use has been restricted for many years or is even banned (PCBs, DDT, Lindane) emphasises the particular risk from persistent substances and justifies the use of stringent prevention standards.

*Oils and their components* can damage marine ecosystems and their organisms in a variety of ways. Apart from external oiling, petroleum-derived substances and their oxidation products have a range of toxic effects. The main sources are rivers, coastal wastewater, drilling platforms, discharges from shipping and marine accidents.

## Action Needed and Recommendations

**9.*** Protection of the North and Baltic seas from inputs of hazardous substances calls for a broader approach to environmental and, particularly, chemicals policy that takes in marine environment protection requirements. Installation-specific emission restrictions are not enough. On the one hand, diffuse inputs are not covered, while on the other, technical clean-up measures do not cover the entire substance spectrum. Alongside strict emission thresholds, total bans and restrictions on the use of substances that cannot be sufficiently contained at source provide key instruments for effective marine environment protection. Against this backdrop, the German Advisory Council on the Environment makes the following recommendations:

– The International Conference on the Protection of the North Sea's so called ‘one generation’ target (ongoing reduction of inputs of harmful substances to achieve their complete cessation in 2020, the goal being to reduce concentrations of those substances in marine ecosystems to 'close to zero' or 'near background values for naturally occurring substances') should be anchored in all relevant EC law and consequently in national legislation. The goal therefore should be to achieve by no later than 2010 the cessation of discharges, emissions and losses of hazardous substances in the marine environment. Therefore it is particularly essential to further develop and implement the Water Framework Directive and all hazardous-substance-specific EU policy to implement both the substance and timing of the one generation target. This is one aim the German government should pursue in

developing a European marine protection strategy as well as during negotiations on the new EU chemicals policy (REACH – Registration, Evaluation and Authorisation of Chemicals) and in the current review of the Plant Protection Products Directive.

- The German Advisory Council on the Environment sees a need to harmonise the evaluation systems used in European water protection and chemicals policy with the OSPAR and HELCOM evaluation systems, especially for PBT substance properties. The evaluation systems currently in place at Community level do not give sufficient consideration to protecting the marine environment. In this regard, there is also a need – both under the OSPAR and Helsinki agreements – to actually implement as planned Community-wide monitoring of hazardous substances for their biological impacts.
- The designation of priority substances and the subsequent selection of priority hazardous substances under the Water Framework Directive must reflect marine environment protection requirements. Priority hazardous substances should at least take in those substances listed by OSPAR and the Helsinki Commission as requiring priority treatment. The current EU list is deficient, particularly in terms of marine environment protection. This is all the more puzzling because the Water Framework Directive makes explicit reference, among others, to the OSPAR and Helsinki agreements.
- Of utmost importance in this regard is that, at Community level, Member States agree emission threshold values as quickly as possible – at least for the 33 substances already identified as priority – and, at national level, emission threshold values for other pollutants listed in the Annex to the Water Framework Directive. The German government should commit itself to ensuring that implementation of the Water Framework Directive does not suffer a similar fate to that of the Water Pollution Directive (76/474/EEC), in which hexachlorobenzenes are the only persistent organic pollutants for which the EU has so far laid down emission limits.
- The German Advisory Council on the Environment believes that granting emission permits under the Water Framework Directive should also take into account the emissions impact on the marine environment. Moreover, significant consideration should be given to the oceans' special sink function and associated concentration trends not only as regards the 12-mile zone covered by the Water Framework Directive, but also beyond that zone.
- In accordance with the EU Commission's proposal, the provisions on long-range transboundary air pollution with regard to persistent organic pollutants set out in the Stockholm Agreement and in the UN/ECE Protocol as regards production, distribution and use of specific persistent organic pollutants should be implemented without delay in binding Community and national legislation.

- Additionally, all substances that are not listed in either international POP agreements but which have PBT and vPvB properties, as well as endocrine disrupters, should be subject both to REACH authorisation procedures and to the licensing procedures for plant protection products and biocides. The German Advisory Council on the Environment recommends that the German government take an appropriate stance in further REACH negotiations and in the review of the Plant Protection Product Directive, pushing for continued efforts towards the integration of PBT and vPvB substances into REACH authorisation procedures as proposed in the EU Commission's draft regulation.
- The German Advisory Council on the Environment also believes that licensing of plant protection products, biocides and chemicals containing persistent, bioaccumulating and toxic or very persistent and very bioaccumulating properties should only occur in exceptional cases where there is significant public interest and non-availability of suitable alternatives can be proven. This applies irrespective of whether substances are produced for intercommunity trade or for extra-community export.
- Substitution of hazardous substances should be anchored in EU chemicals policy and implemented and enforced in a determined way. The availability of less-hazardous alternative substances should thus be established as independent grounds on which to deny authorisation of a substance under the REACH system and under plant protection product law.
- Greater attention should be paid to the potential input, especially of PCBs and DDT, from contaminated soil resulting from rehabilitation activities and to polar pollutants and pharmaceuticals.
- The scope afforded to individual Member States under the Common Agricultural Policy should be used to promote extensive crop growing practices that use lower levels of plant protection products.
- Further efforts are needed if we are to achieve the one generation target with heavy metal concentrations. There is potential for realistic reductions in cadmium and mercury. The phase-out of cadmium-containing batteries should be anchored in law and environmentally sound disposal of used nickel-cadmium batteries implemented. In the case of mercury pollution, the German Advisory Council on the Environment calls for the discontinuation of chlorine-alkaline electrolysis. Mercury-free membrane processes could be used instead.
- Radioactive discharges into the marine environment must be stopped altogether. Given that the dumping of radioactive waste in the oceans is no longer permitted, the German Advisory Council on the Environment believes it sensible to ban

discharges of radioactive wastewater from nuclear reprocessing plants. 'Controlled' discharge is by no means synonymous with lower impacts on the marine environment.

# 4 Reducing Nutrient Inputs in the North and Baltic Seas

## Existing Pressures and Risks

**10.*** Eutrophication caused by high inputs of nutrients, particularly phosphates and nitrogen, remains one of the most serious threats to marine ecosystems. An excess of nutrients leads to an unnatural accumulation of algae or phytoplankton in the water. The most visible effects of increased algae build-up are cloudy waters and greater numbers of algae blooms which can sometimes be toxic. Other negative ecological impacts are caused by the short-lived algae dying off and sinking to the sea bed, where their decomposition involves oxygen-depleting processes. The resulting oxygen deficiency and high concentrations of hydrogen sulphide cause wide-spread death of animals, plants and other organisms that live on the sea bed, and ultimately lead to far-reaching changes in the aquatic communities affected. In the North Sea, these impacts are largely to be observed in the flatter coastal regions and especially in the Wadden Sea mudflats. The Baltic Sea area is affected in its entirety by the outcomes of eutrophication.

Despite considerable efforts in the prevention of phosphate inputs, eutrophication remains a huge problem. This is largely due to continued high inputs of nitrogen. The reductions in phosphate and nitrogen inputs by 50% each by 1995, agreed under the OSPAR and Helsinki agreements and by the International Conference on the Protection of the North Sea in the late 1980s, have only been achieved to any great extent for phosphate inputs – and that largely as a result of extremely cost-intensive modernisation of industrial and municipal wastewater treatment systems and the removal of phosphates from household laundry detergents. In contrast, the nitrogen reduction target remains largely unachieved; this is due for the most part to high nitrogen inputs from the use of fertilisers in agriculture. The latter thus pose a key challenge in marine environment protection policy. Rapid measures to reduce inputs are particularly important because it can be expected that concentrations will take some considerable time to react to reductions in nutrient sources. A great proportion of today's inputs do not stem directly from anthropogenic sources, but rather from 'stores' that have built up on the sea bed and in groundwater. Nor should we ignore the atmospheric nitrogen stores that contribute about one third of nitrogen inputs in the

Baltic Sea and more than one fifth in the North Sea, the key source being agriculture followed by transport.

## Activities and Action Needed

**11.*** The German Advisory Council on the Environment welcomes the demanding objectives laid down by regional marine protection organisations, particularly the target set for reducing nutrient inputs and, moreover, the ideal target set by the OSPAR Commission and the 5th International Conference on the Protection of the North Sea to achieve a marine environment devoid of anthropogenic eutrophication by 2010. At the same time, the Council must point out that the reductions in agricultural fertilising that are so vital to achieving this ideal are simply not happening. If agriculture is to be adapted towards (marine) water protection, then there is another vital issue – one which goes beyond the agricultural compromise agreed in June 2003 on reform of the Common Agricultural Policy (CAP) and involves the following:

- The targets contained in Article 33 (1) EC which focus on increased production should be replaced by more environment-focused wording.
- The marine environment protection targets should actually be integrated into agricultural policy structure (see Article 6 EC).
- Payment of agricultural subsidies should be decoupled from production quantities and without any significant exemptions.
- Reallocation of funding from the first to the second pillar of the CAP ('modulation') should be effected to a significantly greater extent than is intended.

The German government must take action to enable appropriate further reform of the CAP. But it should also fully exploit existing national scope for action provided under the CAP, make agricultural funding available for environmental protection activities and, more specifically, structure the national agro-environment programme to take a more determined approach to environment and nature protection objectives as required by EC Regulation 1267/1999.

**12.*** Significant reductions in nutrient pollution could also be achieved if the Nitrate Directive was finally applied in practice (as is actually required) to coastal and marine waters. Under existing law, eutrophied coastal and ocean areas, or those at risk of eutrophication, must be identified and treated as areas at risk. The action plans to rehabilitate or conserve these areas must thus contain appropriate measures. For example, nitrogen thresholds that are significantly lower than 170 kg N (arable land) and 210 kg N (grassland) per hectare and year must be complied with if the respective local conditions and those in the North and Baltic seas so demand.

**13.*** The special protection requirements for both seas must be integrated into the action plans which will be developed in the implementation of the Water Framework Directive. The competent authorities can and must determine the action needed in river basins, including agricultural activities as appropriate.

**14.*** Given that monitoring of agriculture can be difficult, the German Advisory Council on the Environment calls for the next action plans, and later the activities programmes, to focus on fewer but controllable provisions that also make for effective water protection. The Council identifies the following 'enforcement-friendly' and effective instruments:

- Area-specific restrictions on animal numbers.
- Perennial vegetation cover, with intercropping and winter cover.
- Comprehensive records on the areas available for use of farm manure.
- At least for farms with large animal stocks, the systematic implementation of storage systems for farm manure storage during the winter, based on retrospective orders imposed under Articles 17 (1) and 5 (1) 3 of the Federal Imission Control Act (BImSchG) to enable correct waste management.
- A broad ban on ploughing grassland.

**15.*** Farmers will only cooperate better in environmental protection activities if the activities are sufficiently well funded. Consultation, training and cooperation play a key role. There is also a need for Community-wide harmonisation of nutrient budgeting models to obtain clarity as to the situation on individual farms.

**16.*** In small municipalities, wastewater is often heavily polluted with phosphates and nitrogen. In the interests of prevention, improved nutrient-reducing wastewater treatment under the Urban Wastewater Treatment Directive should thus become the norm. The option of designating so-called less-sensitive areas should be abandoned. The German government should call for the directive to be amended accordingly. At national level, the German Advisory Council on the Environment attaches great importance to nation-wide compliance at large wastewater treatment plants with the concentration values for nitrogen of 13 mg/l now stipulated in the German wastewater ordinance.

**17.*** There is a great need for regulation of emissions from shipping. Standards at sea should no longer be allowed to blatantly lag behind those on land. Under the NEC Directive, land-based $NO_x$ emissions are to be cut Community-wide to 6,519 thousand Mg per year by 2010 (compared with 13,389 thousand Mg in 1990). In contrast, it is expected that by 2010 shipping-related inputs will rise by between 4,015 thousand Mg

(1.5% growth) and 4,649 thousand Mg (3% growth) compared with 2,808 thousand Mg in 1990.

# 5 Combating Pressures and Risks from Shipping

## Existing Pressures and Risks

**18.*** Commercial sea traffic has increased considerably along the major North Sea and Baltic shipping lanes. Shipping poses a range of significant environmental pressures and risks:

- Illegal discharges of heavy oil residues and tank-wash water are the main sources of concentrated oily residues on the surface of the water in the North and Baltic seas. There is evidence of a reduction in such discharges since the introduction of severe restrictions on the disposal of oil-containing residues from fuel processing. Pollution levels measured along the main shipping routes, however, still show considerable quantities of illegally discharged oil.
- The sinking of the Prestige has focused attention on the grave consequences of oil tanker accidents, which cause serious localised damage to the marine environment and – as with the Prestige – to entire coastal regions and ocean-dependent industries. The risk of shipping accidents in the North and Baltic seas is considerable and is likely to increase rather than decrease with the growing number of structures being built in the oceans, especially with the erection of offshore wind farms.
- Atmospheric emissions from shipping are also considerable and are largely due to the use of heavy, highly sulphurous bunker oils and heavy oils. $SO_2$ emissions from shipping match almost one third of all land-based emissions in the EU. The same applies to $NO_x$ emissions.
- Finally, shipping is seen as the key causal factor in the introduction of non-native species. In an ecosystem that is already under pressure from other environmental factors, exotic species transported by ballast water can further upset the natural balance and cause undesired homogenisation of habitats.

## Action Needed and Recommendations

**19.*** The German Advisory Council on the Environment believes that a lot more must be done to place shipping on a sound ecological footing. Given the pollution and risks that remain, shipping is nowhere near the level of environmental compatibility that could reasonably be achieved using modern technologies and practices. As in land-based environmental protection, the precautionary and polluter-pays principles should be systematically applied to shipping to minimise the risks to the North and Baltic seas. Accordingly, the freedom of the oceans must be subordinated. This assumes significant tightening and refinement of prevailing environmental protection and safety requirements combined with far better enforcement of existing provisions. The German Advisory Council on the Environment sees the following as particularly important:

### EU's Special Strategic Responsibility

**20.*** With the Law of the Sea Treaty and the International Maritime Organisation (IMO), the international community has agreed to allow shipping largely free access to the oceans and in consequence has considerably limited individual states' abilities to enact restrictions. This means that the call for more stringent environmental and safety measures must be directed above all at the IMO and its international law regime, the IMO being the competent international body. The IMO, however, shows little willingness to implement more stringent rules. At best, long and drawn-out decisionmaking processes result in a tightening of existing provisions. Although EU legislation – especially that enacted in response to the sinking of the Erika and the Prestige – has clearly influenced the further development of the relevant international law, uncertainty remains as regards the extent to which the EU can enact regional protection measures without IMO approval. Only recently have the IMO and the EU begun to clarify the division of responsibilities between their organisations. In any event, the EU – along with those nations who take their responsibilities seriously – should become active within the IMO. EU regional protection standards could provide considerable stimulus at international level: over 10% of world tonnage can be apportioned to the fifteen EU member states and a further 10% to the ten EU accession states – particularly Malta with 5% and Cyprus with 4% (EU Commission, 2002b, p.13). EU-coordinated lobbying in the IMO by these 25 countries could spur further action at international level. The German Advisory Council on the Environment thus welcomes the EU Commission's intention to have the EU join the IMO and recommends that the German government actively supports this undertaking.

The EU could and should play a more significant role through better enforcement of applicable international law and EU environment protection and safety provisions. There are still considerable qualitative and quantitative deficiencies in supervision of

shipping by Member States (as either flag or port states). This is impressively illustrated by the infringement proceedings concerning the directive on port state controls initiated immediately the deadlines expired. An EU controlling body with both coordinating and monitoring powers and appropriate staff and equipment would thus be an important step towards improved and consistent enforcement.

## Shipping Safety

**21.*** Measures towards improved shipping safety must achieve the following:

- *Constructional requirements*: The phasing out agreed at EU level of single hull tankers – according to ship category between 2005 and 2010 – and the ban on the transportation of heavy oil in such tankers must now be put into practice. The German Advisory Council on the Environment believes that a European port entry ban for all single hull tankers from 2010 is compatible with international law provisions. However, banning single hull tankers will not guarantee total safety. The risk of shipping accidents caused by engine damage should therefore, regardless of construction type, be minimised by the installation of back-up engines that can keep ships manoeuvrable. Additionally, double hull tankers must be subject to regular quality assurance controls. And finally, EU and international law should prohibit use of the space between both hulls as additional capacity for transporting oils, other hazardous substances or liquids.
- *Adequate training of ships' crews*: greater attention must be given to the training of ships' crews. Immediate action should be taken to ensure that in future, 'older' crew members – those trained prior to 2002 – fulfil requirements under the 1995 International Convention on Standards of Trading, Certification and Watchkeeping (STCW) or the corresponding EU Directive 2001/25/EC.
- *Adequate port state controls*: it must be ensured that all Member States make available an adequate number of inspectors at all ports and berthing places and fulfil the 25% minimum control rate. Individual ports must not be allowed to become 'accommodating' ports. Pressure must be applied first and foremost, though not solely, to the accession states Cyprus and Malta.
- *Modern monitoring and information systems*: new monitoring and information systems will enhance sea traffic safety. The German government should nevertheless continue to push for the introduction of mandatory piloting services (at least in certain sea areas like the Baltic Sea entrances and the Kadet Trench), for additional protection measures in the designation of the Wadden Sea as a Particularly Sensitive Sea Area (PSSA), and for recognition of the Baltic Sea as a PSSA.

– *Consolidation of national enforcement responsibilities*: the differing responsibilities of the German Federal and *Länder* (state) governments within and beyond the 12-mile zone, various agencies' authorities, the use of *Länder*-specific organisations to enforce federal requirements, and so on, mean that shipping-related responsibilities are performed in a non-uniform and haphazard manner. The German Advisory Council on the Environment sees an urgent need to consolidate these multifaceted decisionmaking responsibilities, not least for reasons of efficiency. The Joint Accident Task Force is a welcome initial step in this direction. Additionally, Germany's sovereign maritime forces (vessels belonging either to the Federal Ministry for Transport, Building and Housing or the Coast Guard or Customs and Excise or Fisheries Inspectorate) would be better consolidated into a German Coast Guard as an agency of a Federal ministry.

## Reducing Operational (Illegal) Discharges

**22.*** The German Advisory Council on the Environment calls for greater attention to be paid to pollution from discharges of operational and loading residues and tipping of ships' waste into the oceans. Abuse of the North and Baltic seas as waste dumps is no longer acceptable; likewise the fact that nowhere near the same monitoring standards are applied at sea as on land. While the annexes to the 1973/1978 International Convention for the Protection from Pollution from Ships (MARPOL) lay down relatively strict provisions as a basis for protecting the marine environment, frequent illegal discharges are still a cause for concern. Illegal discharges are caused by the lack of waste reception facilities in ports, non-uniform application of MARPOL rules and inadequate monitoring and pursuit of infringements. Although in need of enhancement, the EU's efforts on port reception facilities, port state controls and sea traffic monitoring are key steps towards combating this intolerable situation.

## Reducing Air Pollution from Shipping

**23.*** In the case of shipping-related air pollution, the current lack of international, and the inadequate EU, exhaust regulations for sea traffic essentially results in highly environmentally harmful bunker oil being used as shipping fuel in place of marine diesel oil. The German Advisory Council on the Environment thus sees a need for binding restrictions on the sulphur content in shipping fuel, at least for EU waters and ports in the interim. There is an equally urgent need for similar binding restrictions on $NO_x$ emissions. Wherever possible, compliance with more stringent emission standards should be backed by financial incentives: for example, more attractive berthing fees and lower control fees.

### Liability Law Incentives to Comply with Environment and Safety Provisions

**24.*** In principle, criminal law sanctions and financial liability can provide a tremendous incentive to comply with existing environment protection and safety provisions and also to implement precautionary measures. A prerequisite for this, however, is that liability provisions are made stringent enough at international level and are reliably enforced. This does not appear to be the case at present; in particular, it is evident that inadequate civil liability provisions do not prevent the use of outdated ships and safety systems. Along with a tightening of compensation obligations in the form of liability limits under civil law, the German Advisory Council on the Environment sees an urgent need for stricter sanctions under criminal law that apply to anyone who pollutes the seas either wilfully or through gross negligence or is an accessory to such acts. Thus, the threat of sanctions should not only affect the ship's captain and the ship's owner, but also the responsible individual within the classification society or the company that owns the cargo. It is therefore regrettable that a directive to this effect proposed by the EU Commission has not received Council of Ministers' support as regards sanctions under criminal law.

## 6 Protecting Regional Habitats and Species

**25.*** It is some time since the North and Baltic seas were natural areas untouched by construction. They remain and are increasingly influenced by activities like marine mining, the dumping of dredged materials, pipelines, cable channels and planned offshore wind farms. Alongside and in conjunction with the ubiquitous pressures posed by shipping, fisheries and substance inputs, these regional impacts can, to a significant and increasing extent, contribute to the endangerment, degradation and destruction of marine communities and their habitats. The number and size of relatively untouched and undisturbed habitats that could serve both as breeding and recovery areas is dwindling rapidly.

Against this backdrop, there is an urgent need for more effective measures than those already implemented: firstly, to protect ecologically valuable areas from disturbance (especially breeding, resting and recovery areas) and, secondly, to achieve a minimum of protection from excessive encroachments.

**26.*** To ensure region-specific protection of particularly valuable and/or sensitive habitats and species, the German Advisory Council on the Environment recommends that the German government implement as soon as possible the integrated protected area network aimed for under the Habitats Directive and the Bird Directive and also

under the HELCOM System of Coastal and Marine Baltic Seas Protection Areas (BSPA) and the OSPAR Marine Protected Area Programme:

- In the short-term, place under effective protection all sea areas which – according to available knowledge and under the Federal Agency for Nature Conservation's (BfN) nature protection assessments – are deemed important to the marine environment and migratory birds.
- Intensify research on marine ecosystems in the North and Baltic seas and use the results to identify additional protection needs and, where applicable, new protected areas.
- Push for stringent and transparent linkage, harmonisation and simplification of the various protection programmes, protected area categories and criteria, includig the integration of species-specific protection provisions from the prevailing species protection agreements.
- In close cooperation with OSPAR and the Helsinki Commission, lay down in either primary or secondary legislation a uniform framework for marine protection areas. This framework should contain uniform criteria providing for the exclusion of incompatible uses, the approval of acceptable uses, area management and monitoring.
- As part of a joint Federal and *Länder* (state) national marine protection strategy, develop a national protected area plan for the North and Baltic seas.
- Implement marine spatial planning alongside land-based spatial planning to ensure that diverse uses are formally and bindingly coordinated – both in terms of the uses themselves and of marine environment protection requirements – particularly to avoid locating industry in valuable or sensitive habitats.

**27.*** To ensure adequate and broad minimum protection, the German Advisory Council on the Environment sees a need for uniform and harmonised marine licensing law, especially concerning sea-based construction projects.

- Give the competent authorities the discretionary power to grant planning permission analogous to their discretionary power to grant exploitation licenses under water management law.
- Ensurewithin the licensing process by means of specific administrative standards for marine environment impact assessments and sea-based application of impact provisions a responsible management of marine habitats.
- Identify the specific marine compensation potentialities so that the compensation requirements under nature protection law can be applied to encroachments on the marine environment.

**28.*** Different types of use entail different environmental risks and hence different levels of regulation and monitoring. In many cases, there are no binding regulations or specific requirements to ensure minimisation of impacts and risks using the best available technologies. In many cases, implementation of existing decisions and recommendations made by OSPAR and the Helsinki Commission is still pending. The German Advisory Council on the Environment thus sees the following action as a priority for specific types of uses:

*Offshore facilities*: in general, the 'raw materials security' provision (Section 48 (1), 2nd sentence, Federal Mining Act (BBergG)) should be abolished to allow designation of protected areas to prohibit mining activities where conservation and protection objectives so demand. As regards the environmental risks of rapidly spreading wind farms, the provisions on areas of suitability in Section 3a of Germany's Marine Facilities Ordinance (Seeanlagenverordnung) should be amended so that wind farms may only be erected in suitable areas. In light of the results expected from current environmental impact research, the licensing of offshore facilities under the Marine Facilities Ordinance should be made discretionary to allow the Federal Maritime and Hydrographic Agency (BSH) to take a planning-focused and phased approach to wind farm licensing.

*Cables and pipelines*: Alongside thorough environmental impact and alternative assessments, priority should be given to the bundling of cables or pipes wherever possible. There is thus an urgent requirement for comprehensive planning of requirements and networks in the North and Baltic seas. Where applicable, this must include infrastructures like marine transformer stations which must be made compatible with other uses under a compulsory marine management plan.

*Sediment extraction*: the obligation to conduct an environmental impact assessment should be broadened to include extraction projects involving less than 10 ha or 3,000 Mg per day, and sediment extraction in all nature protection areas should be prohibited.

*Relocation and dumping of dredged materials*: compliance provisions for dumping and relocating dredged materials, including special assessment criteria for environmental impact assessment, maximum allowable pollutant content, applicable technical processes, and monitoring, should be placed on a uniform federal, or preferably EU, legislative level in line with the Disposal Guidelines for Dredged Material in Coastal Waters (Handlungsanweisungen Baggergut Küste) and the Disposal Guidelines for Dredged Material in Inland Waters (Handlungsanweisungen Baggergut Binnengewässer).

*Mariculture*: as soon as possible, HELCOM recommendation 20/1 of 23 March 1999 on environmentally sound mariculture should be fully implemented into European and national law, taking account of applicable provisions contained in the FAO Code of Conduct for Responsible Fisheries. This should include an environmental impact assessment and should link location selection to spatial planning suitability criteria. It should limit discharges of phosphates and nitrates and the use of pharmaceuticals, prescribe measures against the release of breeding fish and set out rules for the regular monitoring of breeding farms.

*Tourism*: environmentally sound planning and management of tourism activities pose a great challenge. This is shaped by local and regional conditions and must largely be met by the respective districts and municipalities. Regional specificities aside, establishing protected areas and full enforcement of protected area provisions play a key role. Assessment and evaluation of local and regional tourism using meaningful, uniform criteria is important and should be further developed. The concept of environmental impact assessment under the Viabono eco-label along with proactive marketing of environmentally sound tourism services is an approach that is both right and worthy of promotion.

# 7 Strategies for Effective Marine Environment Protection Policy

## Strategic and Institutional Principles

**29.*** A look at the various fields of activity in marine environment protection reveals numerous sector-specific problems, deficits in action already taken and opportunities available for further action. There are also fundamental cross-sectoral goal-setting issues, obstacles to success and management deficiencies. Much of this is due to the fact that there is still no plausible strategic, institutional and instrumental basis for integrated marine environment protection policy. There are neither clear, coordinated quality assurance goals, nor is there a cross-sectoral, coordinated plan of action. Both at EU and at national level, marine environment protection is instead largely dealt with on an incremental basis and, where at all possible, lumped in with existing sectoral policies (fisheries, agriculture, chemicals, water protection policy and so on). A significant contributor to the segmentation of marine protection policy is the distribution of decisionmaking responsibilities and initiatives among global and regional international bodies, the EU, national governments and their regional entities. Given the cross-border, multi-sectoral nature of the problem, the involvement of all these

stakeholders is vital. Initiatives must thus be transparent, both in their coordination and in the division of responsibilities. Much remains to be done in this regard.

**30.*** Another overarching management issue involves the deficiencies often apparent in implementation of the relatively 'soft' target and action decisions made by the regional protection organisations INC, OSPAR and HELCOM. This is no doubt partly a result of the more political, appelatory nature of those decisions. Supplemental policy instruments would thus appear called for to aid better implementation. Any efforts made in this direction must, however, be sensitive to the fact that the soft nature of INC, OSPAR and HELCOM decisions is a significant factor in compromise building between the large number of responsible states, and that more specific obligations, greater degrees of bindingness and a stricter sanctioning regime might well make individual states less willing to sign up to international agreements in the first place. For this reason, when it comes to the North and Baltic seas, the German Advisory Council on the Environment recommends a continuation of the division of responsibilities between international cooperations and the EU in such a way that the Community, with its special legislative and enforcement powers, should drive implementation of INC, OSPAR and HELCOM decisions.

## Rapid Development of Integrated Quality Assurance Goals

**31.*** The level of prevention and protection aimed for in the marine environment is of fundamental importance. The 'ecosystem approach' internationally established by the Biodiversity Convention rightly focuses on finding a balance between differentiated quality targets, taking account, among other things, of regional protection needs and conflicting claims to use of the sea. Given the great socio-economic importance of the North and Baltic seas, eliminating all anthropogenic impacts cannot be the principle aim of any realistic prevention model. Based on the principle of proportionality, balanced environmental quality targets must be agreed, reconciling anthropogenic demands as far as possible with ecosystem conservation and regeneration.

**32.*** In terms of proportionality it appears principally acceptable to take into account economic and social stakes within the ecosystem approach and to link the derivation of quality objectives under this approach to the broad postulate of sustainability. However, the German Advisory Council on the Environment sees a grave risk that special emphasis of an integrated approach and particular consideration of economic and social claims could – not least in the context of the general sustainability debate – water down the ecosystem approach's ecological strategy and weaken the thrust of the precautionary model in environmental policy.

**33.*** What remains uncontested is the ecosystem approach's requirement to expand protection and prevention targets and measures to take in differing ecosystem

functions and, as far as possible, to take account of interactions and remote influences. This is a sound and sensible prerequisite for problem-driven and effective environmental protection which, in many cases, can not yet be satisfactorily met in terms of the marine environment because of gaps in knowledge and available data. It cannot be denied that further research in this area should place greater weight on marine ecosystems and anthropogenic impacts. The German Advisory Council on the Environment nevertheless sees a danger, especially in policymaking, that the promising postulate of full ecosystem protection could be abused by being made 'subject to further research' to allow questioning and postponement of preventive measures that could well be based on available knowledge.

**34.*** The marine environment protection policies drawn up by INC, OSPAR and the Helsinki Convention follow the Biodiversity Convention by focusing on the underlying principles that pollutant emissions should not be allowed to exceed the ecosystem's capacity to absorb them and that emissions of hazardous substances must be minimised with the aim of achieving zero emissions. This is in line with the one generation target of zero emissions of hazardous substances by 2020. The phosphate and nitrate target aimed at cessation of anthropogenic eutrophication by 2010 is stricter than the capacity principle and is unrealistic, as are the emission reductions it involves. The German Advisory Council on the Environment recommends softening the target and tightening measures to achieve it.

**35.*** While setting basic targets for pollution and hence emission reductions is indispensable in designing successful policy, they cannot have the desired controlling effect unless global targets and an associated timeframe are agreed for both sector-specific and consolidated activities. The German Advisory Council on the Environment thus greatly welcomes the Bergen Declaration of the Firth North Sea Conference and its important contribution in setting out the ecological quality elements and the ecological quality objectives that we should aim for.

## Solving Conflicts of Responsibility that Weaken Effectiveness

**36.*** Clarification and redistribution of responsibilities within key problematic areas of marine environment protection must be pushed for if we are to solve responsibility conflicts that weaken effectiveness. This applies to:

- The relationship between regional legal initiatives (by OSPAR, HELCOM and EU) and the International Maritime Organisation (IMO) as regards the possibility of obligating shipping at regional level to greater protection, emission and safety standards.

- The relationship between the EU and international regimes under the OSPAR and Helsinki agreements whereby the responsibilities of OSPAR and the Helsinki Commission should be upheld and their initiator and pioneer roles in marine environment protection supported, while the EU should put to greater use its legislative authority and enforcement powers to ensure more effective implementation of international protection objectives.
- The relationship between the EU and its Member States concerning the lack of uniform monitoring and of an enforcement agency with broad sovereign powers for fisheries and shipping. A European inspectorate that uses international control teams to coordinate and manage enforcement could significantly reduce implementation and enforcement problems.
- The inappropriate division of federal and *Länder* administrative responsibilities at the edge of the 12-mile zone, where greater federal powers are needed. To achieve uniform and efficient enforcement on either side of the 12-mile zone, responsibility for marine environment protection, shipping safety and fisheries, and also for coastal sea waters, should be transferred in its entirety to a federal agency or at least to an agency commissioned at federal level. As with the example of the need for uniform marine spatial planning law, there is also much to be said for giving the federal government comprehensive legislative powers over the marine issues outlined above as part of its sovereign authority over the coastal sea waters and exclusive economic zone in its jurisdiction.

## Creating an Integrated Management Regime

**37.*** The German Advisory Council on the Environment sees an integrated strategy and action plan together with spatial coordination as vital to marine environment protection, which is essentially a multilateral, cross-sectoral responsibility. It appears that national programmes of this kind do not yet exist. The EU should thus require national management plans to ensure that such plans are uniform and can be integrated both horizontally and vertically. With reference to the Water Framework Directive, the EU should place its Member States under obligation to:

- Develop and regularly update national management plans for coastal sea waters and the exclusive economic zone.
- Use the management plans to achieve and provide evidence of the implementation of international and EU law requirements.
- Issue supplemental action plans if enforcement deficits occur.
- Establish a marine spatial plan in line with their national management plans.

All overarching management problems outlined above illustrate the need for a strategic, transparent and planned approach. The German Advisory Council on the Environment believes that a Europe-wide obligation for Member States to draw up marine management plans would not only promote integrated, transparent and effective marine environment protection, but would also make a significant contribution to Europe-wide coordination at and between the various stakeholder levels and to enhancing implementation of European protection goals. National action plans are the only means of assessing whether and to what extent individual states are willing to fulfil their international and Community obligations to protect the marine environment.

The ecosystem approach's holistic management requirements can only be met with an overarching, transparent action plan, long-term objectives and activities that are coordinated over space and time.

Other than with long-term goal-setting and transparent activity planning, it is impossible to provide the most efficient, sustainable level of marine environment protection while taking account both of ecosystem functional relationships and of economic and social demands. This type of holistic, long-term optimisation strategy requires long-term goal-setting and coordinated planning of consolidated measures.

Coordinated coastal area management, as largely initiated and coordinated by the EU Commission, takes the right approach for marine protection planning of this type. While it cannot replace marine protection planning due to its restriction to coastal sea waters and lack of a spatial planning structure, it constitutes a key marine management component.

Irrespective of future European requirements, the German Advisory Council on the Environment appeals to the German government, and especially to Germany's coastal *Länder*, to develop marine protection plans without delay and to review and update them with regular public consultation.

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