11

Marine Protected Areas and Marine Spatial Planning, with Special Reference to the Black Sea

Eva Schachtner

Leibniz Institute of Ecological Urban and Regional Development, Dresden, Germany

Marine Spatial Planning and Marine Protected Areas: Compatible or Conflicting Concepts?

In its broadest sense, Marine Spatial Planning (MSP) is 'a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process' (UNESCO and IOC).[1]

This definition of MSP often leads to the assumption that ecological, economic and social objectives are of equal importance and should be balanced equally in the MSP process (e.g. Schäfer, 2009). This view seems to correspond to the concept of the three pillars of sustainability: economic development, social development and environmental protection.[2]

In contrast, Marine Protected Areas (MPAs) are primarily selected on the basis of ecological and/or geomorphological criteria and focus on the protection of those features. They have a specified object of protection, for example marine mammals, or they aim at tackling environmental threats from a particular source, like shipping or fisheries. As a positive side effect, protected areas can nevertheless contribute to the non-environmental objectives of MSP, for example by conserving nursery areas for fisheries production or by enhancing tourism revenues. Thus, MSP and protected area programmes are in many cases mutually beneficial (Clark, 1992). But even in multiple-purpose MPAs, a holistic, cross-sectoral approach is often not truly implemented in practice. Marine Protected Areas therefore cannot be considered as a small-scale 'predecessor' for MSP (Drankier, 2012).

In recent times, long-standing sea uses have become more intense and new forms of use have emerged. The negative effects include over-fishing, loss and destruction of habitats, pollution and climate change (Douvere, 2008). It could thus be worth considering shifting the orientation of MSP and using it as a tool to redress the balance in favour of the marine environment.

Restrictions on economic activities do, however, often seem less acceptable than stresses on the environment, since negative effects on the environment are often felt only with a time lag, whereas economic downturn immediately threatens livelihoods. Especially in countries with fast-growing maritime industries and still-developing economies, it is viewed as problematic to overly prioritize

Management of Marine Protected Areas: A Network Perspective, First Edition. Edited by Paul D. Goriup.

ecosystem conservation (Qiu and Jones, 2013). To gain public acceptance for MSP concepts in the Black Sea region, it might therefore seem necessary to provide more leeway for development than in other European Seas.

Yet, since functional ecosystems are an essential precondition for social and economic development, the balance between economic, social and environmental interests can be found only within the framework of environmental compatibility (ARL, 2000). The carrying capacity of the sea has to be respected, not only to preserve the intrinsic value of nature, but also to secure future prosperity. By destroying their environment, countries deprive themselves of development chances that, for example, genetic resources might offer in the future and whose value cannot yet be estimated. The protection of the environment should therefore not be considered a 'luxury' problem that only rich countries can afford to tackle.

It is therefore crucial to set the right course today by assigning to MSP not only a coordinating role between the different interests, but also a steering role towards ecosystem-based management.

Protection of the Sea

There are basically two concepts of area protection. The segregation approach is based on the dichotomy of 'protection area' and 'pollution area'. Thus, nature protection areas and areas for economic activities are spatially separated. However, because of the highly connected nature of the sea, MPAs are vulnerable to natural resource exploitation and other activities even if they occur far outside the protected areas. For example, pollution does not respect the boundaries of MPAs and therefore endangers habitats and species within those areas. Also, the state of the neighbouring ecosystems can influence the health and productivity of the MPA ecosystem. Protected areas should therefore not be managed in isolation, as 'islands of protection' (Salm *et al.*, 2000).

The integration approach, on the other hand, aims to overcome the aforementioned dichotomy by combining environmental protection and economic use (Mose and Weixlbaumer, 2007). Nature protection is thus instituted across 100% of the area by regulating the type and intensity of the anthropogenic use of space (Spektrum, 2001). Marine Spatial Planning can unite the advantages of both concepts by integrating MPAs into a comprehensive spatial development strategy.

Protection of Open Space

At sea, intensive use can have a similar negative effect for species and their habitats as the sealing of the soil on land (Janssen *et al.*, 2008). Moreover, due to the absence of land prices and the seemingly endless expanse, space is often too generously used (Buchholz, 2004). The viability of ecosystems, however, depends on sufficient open space and unspoiled nature (Ritter, 2005).

Protection of open space is ideally quantitative, structural and qualitative. Quantitative protection means there is an adequate amount of open space; structural protection means the conservation of sufficiently large continuous areas of open space is ensured; and qualitative protection means ecological connectivity is respected (Ritter, 2005).

To effectively implement protection of open space, MSP should not only define 'where' and 'how' a use takes place, but also decide 'if' a use is really necessary. This also means that uses undesired on land are not simply relocated in the sea. The sea should rather be reserved for uses for which it provides a particular locational advantage.

Surface recycling can help to further reduce claims on areas so far undisturbed by human activities. For instance, spatial planning can ensure that new generations of offshore wind farms or other installations are

built over decommissioned and dismantled plants (Köppel *et al.*, 2006). Also, the predefinition of minimum capacities, especially for power plants, can help to reduce space requirements (BBSR, 2011).

Moreover, uses should occupy as little space as possible, taking account of all three dimensions of the sea (seabed, water column and water surface): to use the available space efficiently, uses ought to be concentrated, and installations bundled (BfN, 2006). Marine Spatial Planning can also promote synergies and facilitate co-use. Offshore wind farms, for example, can be combined with aquaculture. The advantages of the concentration of uses, however, have to be balanced against the then locally multiplied environmental impact.

Cumulative Effects and Interactions

Environmental pressures result from the individual or various activities of one or more users, which may occur simultaneously or at different times, independently or interrelated. There are additive effects, such as the accumulation of similar effects, and synergetic effects from the combined effects of various pressures. The severity of these effects on the environment depends mainly on the quantity, type and intensity of the impacts, their spatial distribution and their sequence in time, but also on the vulnerability and adaptability of the affected ecosystems. 'Time-crowding' and 'space-crowding' constitute the biggest threats to the environment, but gradual processes also need to be considered (Siedentop, 2003).

Often, as a result of a series of small, apparently independent and environmentally compatible decisions, a far-reaching process can be set in motion without ever consciously addressing the issue (Odum, 1982). For example, through the cumulative effects of small decisions, the sea gradually becomes more and more eutrophic, or acidic, or laden with plastics, each of which can significantly alter ecosystem functions. Marine Spatial Planning offers a framework suitable for the implementation of a holistic perspective and the consideration of all possible pressures within the planning area. To identify incremental effects, indicators can be used, for example the cumulative loss of habitats, the cumulative level of noise pollution or the cumulative fragmentation of an area (Hanusch *et al.*, 2007).

Through MSP, reasonable placement alternatives can be considered in the planning process and their respective impacts on the environment compared: uses can then be sited where they cause the least environmental impacts. Fragmentation effects can thus be minimized, while migration routes and retreat areas are protected. Similarly, buffer zones can be placed around sensitive areas, for example to reduce exposure of marine mammals to harmful levels of noise emissions. Temporal coordination can further help to alleviate the impacts of uses, since adequate periods of low use or no use are crucial for the regeneration of the environment. For example, construction activities can be planned on a staggered basis to reduce their cumulative impact (Janssen *et al.*, 2008).

Unanticipated results can also occur when interaction webs are overlooked or manipulated. For example, removing top predators including marine mammals, sharks and other large fishes can generate cascade effects for the whole food chain. In the MSP process, the most important ecological features of an ecosystem and possible indirect effects can be identified (Crowder and Norse, 2008) and, consequently, these effects can as far as possible be avoided.

Prevention of and Compensation for Negative Effects

Because the marine environment is particularly sensitive and because there is a significant knowledge deficit about the functioning

of its ecosystems (see Boero, this volume), the observance of the precautionary principle is essential. Where scientific understanding is still incomplete, recourse to this principle helps to avoid possible risks. This means, for example, that if there are indications of special vulnerability of an area, its protection must be ensured by appropriate spatial planning measures, even if a definite assessment is not yet possible. Marine Spatial Planning can thus play a proactive role, and not just react to problems after they have occurred.

Furthermore, MSP can help to ensure compensation and replacement for interference in the natural environment. If stipulations in a marine spatial plan are likely to have unavoidable negative consequences for the environment, corresponding stipulations can provide for commensurate compensation. Possible measures are restrictions on other, less important uses, the requirement to dismantle out-of-date installations before new installations are constructed, or even measures onshore that contribute to the regeneration of the sea. The limits of the planned compensation possibilities then also set a limit for impacts on the environment and thereby ensure sustainable development (ARL, 2000).

Compensation, however, always implies that the pre-existing natural conditions have been seriously damaged or even destroyed. Care must thus be taken that the overriding principle of avoidance of environmental damage does not get undermined.

Flexible and Proportionate Planning

Marine spatial plans reflect the state of knowledge at the time of their adoption and therefore tend to perpetuate errors (Beaucamp, 2002). Planning should therefore be understood to be a continuous adjustment process and plans regularly reviewed and adapted. Stipulations are ideally not definite, but keep planning possibilities open by ensuring a certain spatial disposability. For example, the sea should not be used as a space for permanent fixed installations, and the dismantling of decommissioned installations should generally be required (Wende *et al.*, 2007). Similarly, all other activities should only be granted permission for a manageable period of time. Otherwise, the implementation of later decisions on the establishment of protected areas or on other protective measures that may become necessary because of increased knowledge of the marine environment will be considerably more complicated.

Conversely, to enhance acceptance of protective measures by users, activities should not be excessively restricted. Some species only need protection in one of the three dimensions of the sea (water surface, water column and sea bed). For example, some benthic communities only need protection from impacts on the seabed, like bottom-trawl fisheries. Moreover, since the need for protection of species and the vulnerability of areas can vary over time, temporal aspects can be taken into consideration as a fourth dimension of planning. Marine Spatial Planning can consequently provide for proportionate spatial management by placing only certain areas under protection and, if appropriate, only at certain times.

Creation of an Efficient Network of MPAs

Even though the sea is characterized by great permeability and therefore ecosystems are better connected than onshore, the guarantee of an undisturbed exchange of organisms and nutrients between MPAs through a protected network can considerably multiply their effectiveness (Boero, this volume). Furthermore, well-designed networks of MPAs are more resilient and better suited to mitigating the effects of dynamic natural processes, or imposed processes such as climate change, than unconnected MPAs. Networks of no-take and partially protected

MPAs are thus increasingly considered as an essential element of ecosystem-based MSP (Jones *et al*., 2016).

A network of MPAs should be designed as a synergistic system, based on cells of ecosystem functioning (Boero, this volume) where the 'whole is greater than the sum of the parts'. Networks ideally reflect the migration paths of certain species to connect their sub-habitats or scattered populations, or they connect similar habitats to reinforce the respective protection effect (Beal *et al*., this volume). The degree of protection of the connecting areas has to be at least commensurate with the function they need to fulfil. Migration corridors or stepping stones can be established to ensure connection, or MPAs can be optimally positioned in relation to each other, for example to ensure exchange through currents. The MPAs might also be established as dynamic MPAs that protect dynamic ocean features (like eddies or fronts) or the seasonal migration of protected species (Crowder and Norse, 2008).

However, by creating networks of protected areas, it is important not to lose sight of the goal of a comprehensive protection of the sea. Environmental protection must not be relegated to the spatial sidelines, such as narrow migration corridors (Leibenath, 2009).

Towards Implementation of the Ecosystem Approach

As early as 1992, at the UN Earth Summit in Rio de Janeiro, it was recognized that the traditional sectoral approach to natural resource and environmental management did not adequately address human impacts on the environment (Laffoley *et al*., 2004). In consequence, management has shifted towards a more holistic approach, 'mainstreaming' the environment into economic sectors. However, even this was soon recognized as flawed. Accordingly, at the fifth Conference of the Parties of the Convention on Biological Diversity in 2000, it was recommended that the ecosystem approach be applied, and 12 principles have been developed for its implementation[3] that also seem to be relevant for MSP. For example, Principle 7 states that the ecosystem approach should be undertaken at the appropriate spatial and temporal scales.

Within the EU, the Marine Strategy Framework Directive (MSFD, 2008/56/EC) and the Maritime Spatial Planning Directive (MSPD, 2014/89/EU) now require the application of an ecosystem approach. Furthermore, the Baltic Marine Environment Protection Commission (HELCOM) and Visions and Strategies around the Baltic Sea (VASAB) have adopted the ecosystem approach as an overarching principle for Maritime Spatial Planning[4] and agreed on a 'Guideline for the implementation of ecosystem-based approach in Maritime Spatial Planning (MSP) in the Baltic Sea area.'[5]

Ecosystems can be defined as 'subdivisions of the Earth's surface, including marine areas, and lower atmosphere within which natural processes operate and biological communities perpetuate themselves' (Ehler and Douvere, 2007). Humans, with their cultural diversity, are regarded as an integral component of ecosystems.[6] The ecosystem approach is, according to one definition, 'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way' (Convention on Biological Diversity).[7] By taking the full array of interactions among ecosystem components and human users into consideration, the ecosystem approach can help to arbitrate between the increasing diversity and intensity of human activities and the carrying capacity of the sea.

The spatial component is a key characteristic of the ecosystem approach to management, since in most cases ecosystems are fixed in space for long periods of time. And, since MSP addresses inter-sectoral conflicts

and user–environment conflicts, taking account of temporal aspects, it is an ideal tool to implement the holistic ecosystem approach.

Limits of MSP

Establishing maritime spatial plans does not yet guarantee the achievement of environmental objectives. Therefore, the establishment of marine spatial plans should not be considered as the ultimate goal. The goal should rather be to achieve real outcomes such as sustainable energy supplies, reduced conflicts among human activities, or the conservation of marine ecosystems (Ehler, 2012). Moreover, while through MSP space can be allocated, conflicts reduced and synergies maximized, the quality of uses and the concrete impacts of individual projects cannot be controlled (Schultz-Zehden *et al*., 2008). Other instruments like environmental impact assessment therefore need to be employed alongside MSP.

The Law of the Sea: A Hindrance to MSP?

There is no international convention exclusively dedicated to spatial planning at sea. Some relevant regulations, however, can be found in the United Nations Convention on the Law of the Sea (UNCLOS). Apart from Turkey, all states of the Black Sea area have signed and ratified this convention.

UNCLOS sets out different zones of the sea and defines the rights and obligations of its contracting parties in each of them. Article 2(1) of UNCLOS states that the sovereignty of a coastal state covers its land territory and internal waters. The coastal state is thus free to make laws, to regulate any use, to use any resource and, therefore, to submit its internal waters to MSP. According to Art. 2(1) of UNCLOS, the sovereignty of the coastal state comprises its territorial sea, extending up to 12 nautical miles from the baseline (Art. 3). That sovereignty derives from the sovereignty over the land territory. Consequently, the coastal state can undertake spatial planning activities in that part of the sea. Ships of all states, however, enjoy the right of innocent passage through the territorial sea (Art. 17).

Beyond its territorial sea, a coastal state may claim an exclusive economic zone (EEZ) that extends up to 200 nautical miles from the baseline (Art. 55, 57). Since the Black Sea is quite small and all the riparian states have declared EEZs (Oral, n.d.), it is completely divided between them (Black Sea Commission). Thus, there are no areas that lie beyond national jurisdiction (high seas/the Area).

UNCLOS provides coastal states with certain functional rights in their EEZ for the purpose of exploring and exploiting, conserving and managing natural resources and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds and with regard to the establishment and use of artificial islands, installations and structures (Art. 56). The exercise of these rights is subject to various conditions, such as the respect of the right of any state to lay submarine pipelines and cables, and the freedom of navigation of other states' vessels (Art. 58). Concerning the seabed and subsoil, the rights of the coastal state in the EEZ shall be exercised in accordance with Part VI of UNCLOS on the continental shelf (Art. 56(3)).

Article 56(1) of UNCLOS does not expressly assign to the coastal state a sovereign right or jurisdiction to undertake planning activities in the EEZ. This, however, does not necessarily mean that MSP there is unlawful. Under Art. 60(1) of UNCLOS, for example, the coastal state has the exclusive right to construct, to authorize and to regulate the construction, operation and use of artificial islands, installations and structures.

It is left to the coastal state to determine if and how these rights are to be executed (Proelß, 2009). Therefore, it seems justified to conclude that MSP is allowed if planning activities are directly linked to the rights expressly assigned to the coastal state by Part V of UNCLOS.

In enclosed or semi-enclosed seas like the Black Sea, contracts between all riparian states could allow MSP measures that go beyond the scope of measures allowed by UNCLOS. Of course, in this case, only the contracting states are bound by the contract and only the rights of those states can be affected by its provisions.

EU Instruments: A Fresh Impetus to MSP

Recommendation on Integrated Coastal Zone Management

The European Parliament and the Council adopted on 30 May 2002 the Recommendation 2002/413/EC on Integrated Coastal Zone Management (ICZM) that outlines the steps that the Member States should take to promote ICZM along their shorelines and defines the principles of sound coastal planning and management. Those principles include the need to base planning on in-depth knowledge, to take a long-term and cross-sectoral perspective, to involve stakeholders, and to take into account both the terrestrial and the marine component of the coastal zone. The recommendation, however, lacks binding force.

Item 5.9 of the Roadmap for Maritime Spatial Planning of the Commission (COM (2008) 791 final) concerns the relation between MSP and ICZM and says 'coastal zones are the "hinge" between maritime and terrestrial development. Drainage areas or land-based impacts from activities such as agriculture and urban growth are relevant in the context of MSP. This is why terrestrial spatial planning should be coordinated with MSP. Furthermore, according to a Commission Staff Working Paper of 2013, 'MSP and ICZM connect in their geographical coverage (transition area from land to sea) and in their overall objective (to manage human uses in their respective areas of application)' (EC, 2013b).

Consequently, the Commission has decided to develop these two tools together, an approach that is reflected in the new MSPD: Art. 6 No. 2 lit. (c) encourages Member States to promote coherence between MSP and the resulting plan or plans and other processes, such as integrated coastal management.

The Example of the Mediterranean Sea

The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) entered into force on 12 February 1978. The European Community as well as all the EU Mediterranean Member States are Contracting Parties to the Convention. Within its framework, a draft protocol on ICZM was prepared, and, after a lengthy negotiation process, adopted on 21 January 2008.

The protocol aims to minimize the impact of economic activities on the environment and to guarantee a sustainable use of resources (Art. 9), to protect coastal ecosystems, landscapes, islands and cultural heritage (Art. 10–13), and to ensure participation and raise awareness (Art. 14–15). In order to ensure that corresponding measures are adopted in a coherent way, the text requires that they are made part of a broader planning system. Article 18(1) says that 'each Party shall further strengthen or formulate a national strategy for integrated coastal zone management and coastal implementation plans and programmes'.

Since it has, in contrast to the ICZM Recommendation of the EU, binding power,

the protocol significantly advances the ICZM process. However, even if the protocol is binding, the wording of some of its provisions resembles recommendations rather than strict obligations.

Marine Strategy Framework Directive

The most recent policy driver for the protection of the marine environment is the MSFD. The objective of the MSFD is to achieve a Good Environmental Status (GES) of the EU's marine waters by 2020 by applying an ecosystem approach towards marine management and governance.

Each Member State is required to assess the current state of its marine environment, to define the desirable 'good environmental status' of its region and to establish detailed environmental targets as well as monitoring programmes.

The MSFD can be interpreted as applying the 'hard' sustainability approach, of which ecosystem conservation is the basis. The taking into account of all relevant impacts constitutes a novel, holistic approach to environmental protection at the EU level, through which many of the sectoral efforts of the past can be complemented or even replaced (ARCADIS, 2011). Together with the Water Framework Directive (WFD, 2000/60/EC), the MSFD provides for an integrated environmental management system that stretches from the basin catchment area through the coast to the open sea (Qiu and Jones, 2013).

The MSFD does not explicitly require the Member States to implement MSP, but they are required to take management measures into consideration that 'influence where and when an activity is allowed to occur' (Spatial and temporal distribution controls/Art. 13(1) in conjunction with Annex VI(3)).

Furthermore, the MSFD promotes spatial protection measures, contributing to coherent and representative networks of MPAs, adequately covering the diversity of the constituent ecosystems (Art. 13(4)). The establishment of such a coherent and representative network of MPAs requires a level of protection that goes beyond the level of protection guaranteed by Natura 2000 sites (Braun, this volume). The Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEC), which form the basis for the protection of those sites, do not reflect the modern ecosystem approach. They were only designed to protect certain species and habitats, not to create a coherent and fully representative network of MPAs across Europe (Qiu and Jones, 2013). To form an effective network, the Natura 2000 sites have to be complemented, for example by national MPAs, by protection corridors or by 'stepping stones'.

Maritime Spatial Planning Directive

From the Birds Directive to the MSFD, a clear trend of mainstreaming environmental concerns into wider planning and development programmes can be recognized in European legislation (Qiu and Jones, 2013). Right in line with that trend, the MSPD has recently been adopted, constituting a milestone in European legislation with regard to spatial planning. The EU for the first time includes not only individual spatial planning elements in environmental regulations (Schubert, 2015). In particular because of the increasing and uncoordinated use of coastal and maritime areas that leads to an inefficient and unsustainable use of marine and coastal resources, the Directive rather aims to cover all policy areas with an impact on coasts, seas and oceans (EC, 2013a).

The Directive, however, does not set new sectoral policy targets. Through maritime spatial plans, the objectives defined by national or regional sectoral policies are to be integrated and linked, and steps taken to prevent or alleviate conflicts between different sectors and to achieve the Union's

objectives in marine and coastal related sectoral policies (EC, 2013a). The operational objectives of the Directive are thus procedural in nature. It supports ongoing implementation of sea-related policies in Member States through more efficient coordination and increased transparency (EC, 2013a).

Consequently, the Directive only establishes a 'framework' for maritime spatial planning (Art. 1(1)). The EU has opted for such a 'framework-type' Directive to provide flexibility and to allow the Member States to develop their own national policies. The Directive is deliberately not aimed at assigning a new planning task to the EU or at reshaping the different national spatial planning systems (Schubert, 2015).

According to the Directive, 'when establishing and implementing maritime spatial planning, Member States shall consider economic, social and environmental aspects to support sustainable development and growth in the maritime sector, applying an ecosystem-based approach, and to promote the coexistence of relevant activities and uses' (Art. 5(1)). The definition of the objectives of the ecosystem-based approach corresponds to the definition in Art. 1(3) of the MSFD and so requires that 'the collective pressure of all activities is kept within levels compatible with the achievement of good environmental status and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while contributing to the sustainable use of marine goods and services by present and future generations' (Preamble, Recital 14).

The ecosystem-based approach is considered a basic principle of MSP within the EU and links the MSPD clearly to the MSFD. In reality, however, the two Directives seem to function more on an antagonistic than synergistic basis. By often prioritizing 'blue growth' over environmental protection towards the achievement of GES, Member States undermine the closer coupling that has been called for (Jones *et al*., 2016).

Moreover, the appropriate balance between ecological, economic and social objectives of MSP and the respect of the carrying capacity of the sea, required by the ecosystem-based approach, seems to be difficult to strike. It could be argued that, at least if the sea is affected by planning decisions to such an extent that its ecosystems cannot recover in the foreseeable future, insufficient weight has been given to the protection of the environment (Schubert, 2015). Such an interpretation ensures that the ecosystem-based approach does not conflict with the requirement to consider also economic and social interests, but just prevents manifest errors of consideration.

The Black Sea: Evaluation of Progress on MSP at a Regional Level

The Black Sea is surrounded by six countries. The countries of the west coast, Bulgaria and Romania, form part of the European Union. Turkey, located on the south coast, is an EU candidate country. The states on the north and east coasts (Ukraine, the Russian Federation and Georgia) arose following the break-up of the Soviet Union, which still influences their legal system, although both Ukraine and Georgia signed Association Agreements with the EU in 2014 which implies increasing harmonization of their legislation with the acquis communautaire.

Despite its anoxic zone below 300 m, the Black Sea is relatively rich in biological resources (Alexandrov *et al*., this volume). The sea and its coastal wetlands provide spawning grounds for various fish species and breeding and resting places for many endangered birds. Also, three species of marine mammals live in the Black Sea. Eutrophication, pollution and irresponsible fishing, however, brought the environment of the Black Sea to the edge of collapse.

The Bucharest Convention on the Protection of the Black Sea Against Pollution

The Convention on the Protection of the Black Sea Against Pollution (also referred to as the Bucharest Convention) was signed in Bucharest in April 1992, and ratified by all legislative assemblies of the six Black Sea riparian states in early 1994. Acting on the mandate of the Black Sea countries, the Commission on the Protection of the Black Sea Against Pollution (the Black Sea Commission) implements the provisions of the Convention, its four Protocols and the Black Sea Strategic Action Plan (BSC, 2007). The Commission is assisted by its Permanent Secretariat located in Istanbul, Turkey.

Efforts towards ICZM and MSP

The original Odessa Declaration of 1993 (Ministerial Declaration on the Protection of the Black Sea) calls on coastal states 'to elaborate and implement national coastal zone management policies, including legislative measures and economic instruments, in order to ensure the sustainable development in the spirit of Agenda 21' (point 15).

A Regional Activity Center on the Development of Common Methodologies for Integrated Coastal Zone Management (AC ICZM) was established in Krasnodar (Russia).

In the Sofia Declaration of 2009 on 'Strengthening the Cooperation for the Rehabilitation of the Black Sea Environment', the Ministers of Environment of the Contracting Parties to the Convention have, under point 9, agreed to 'incorporate up-to-date environmental management approaches, practices and technologies, with particular attention to integrated coastal zone management, introduction of green technologies, sustainable human development and ecosystem based management of human activities'.

The Protocols to the Convention also deal with ICZM. Particularly relevant is Art. 7 of the Black Sea Biodiversity and Landscape Conservation Protocol (2002) that says that 'the Contracting Parties shall encourage introduction of intersectoral interaction on regional and national levels through the introduction of the principles and development of legal instruments of integrated coastal zone management seeking the ways for sustainable use of natural resources and promotion of environmentally friendly human activities in the coastal zone'.

In addition, the Protocol on the Protection of the Marine Environment of the Black Sea from Land-Based Sources and Activities (2009; entry into force pending) requires the Contracting Parties, in order to achieve the purpose of the Protocol, to 'endeavour to apply the integrated management of coastal zones and watersheds' (Art. 4(2) lit. f).

Within the Bucharest Convention system, Strategic Action Plans are adopted at regular intervals. The Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea of 2009 lists, as key environmental management approaches under 3.1, Integrated Coastal Zone Management (ICZM), the Ecosystem Approach and Integrated River Basin Management (IRBM).

A binding ICZM/MSP Protocol for the Black Sea could be the logical next step to advance those concepts within the Bucharest Convention system.

The question could be raised, however, if the EU membership of two Black Sea countries and the ongoing process of approximation of three other Black Sea countries towards the EU renders such a regional cooperation superfluous. As EU Member States, Bulgaria and Romania have to respect the MSPD. Turkey is a candidate country to the EU and Ukraine and Georgia have signed Association Agreements. According to those agreements, the Parties shall promote

maritime spatial planning (Art. 411 lit. b of the Association Agreement between the EU and Ukraine signed on 27 June 2014/Art. 339 lit. b of the Association Agreement between the EU and Georgia signed on 27 June 2014).

But since the MSPD, due to a lack of EU competences for the comprehensive regulation of MSP (Schubert, 2015), only sets a general framework, it explicitly requires further cooperation among Member States and with third countries in Art. 11 and 12, inter alia within regional institutional cooperation structures such as Regional Sea Conventions. The aim is to ensure that maritime spatial plans are coherent and coordinated across the marine region concerned. Thus, even the implementation of the relevant EU Directives in the Black Sea region could not be considered a substitute for a more detailed regulation of ICZM/MSP within the Bucharest Convention system.

Steps have been taken to advance MSP for other regional seas also. For example, the members of HELCOM (Baltic Marine Environment Protection Commission – Helsinki Commission) and VASAB (Vision and Strategies around the Baltic Sea – intergovernmental multilateral cooperation of 11 countries of the Baltic Sea Region in spatial planning) have agreed on a Regional Baltic Maritime Spatial Planning Roadmap (2013–2020) to fulfil the goal of drawing up and applying maritime spatial plans throughout the Baltic Sea region by 2020 which are coherent across borders and apply the ecosystem approach.

Readiness of the Region for a Binding Instrument

Even though the importance of ICZM has been recognized by the Contracting Parties to the Bucharest Convention, their approach to the concept still seems piecemeal and unsystematic. Several pilot projects for ICZM and spatial planning have been implemented in the Black Sea area, for example in the resorts of Malaya Yalta (Ukraine) and Gelendzhik (Russia), in Akçakoca (Turkey) and in Tskhaltsminda village (Georgia) (Pegaso Project, 2014). The beneficial effects of pilot projects, however, do not often last beyond the duration of the project. To establish only such temporary management measures in localized areas results, in the best case, in an 'oasis in the desert' (Billé and Rochette, 2010). That project-orientated approach thus goes against the basic principle of sustainable development 'which requires not that "exceptions" be created, but that the "rule" (legal framework) and the routine (the way the coast is actually managed), be changed' (Billé and Rochette, 2010).

So far, the management of coastal and marine zones through legislation that is specifically dedicated to such areas is still exceptional in the Black Sea area. In addition, in many cases, there is a lack of consistency between sector-specific policies with regard to environmental protection, as well as a lack of coordination between decision-makers. Very likely, steps towards MSP and ICZM would be considerably more efficient within a strong implementation framework. A legally binding ICZM/MSP protocol for all Black Sea countries could help to fill the gaps in the existing national legal frameworks, to coordinate efforts and to thereby reconcile the development of coastal and marine zones with the protection of the environment in the whole Black Sea region (Rochette and Billé, 2012).

Since there are no national regulations on MSP in the Black Sea region yet and few regulations on ICZM, now seems to be an opportune time to advance those concepts. A binding protocol would not conflict with existing national regulations and would largely influence the content of new ones, facilitating a consistent planning concept for the whole Black Sea. Moreover, there are not many permanent structures in the Black Sea yet (e.g. there are no offshore wind farms).

Thus, planning and regulation possibilities are not severely restricted by hardly reversible decisions.

The legally binding nature of a protocol can, however, also be regarded as a disadvantage, especially if there is a need for a fast and efficient response to environmental problems. Until a protocol enters into force, there is usually a lengthy process of drafting and negotiating the text. The Protocol on the Protection of the Marine Environment of the Black Sea from Land-Based Sources and Activities of 2009, which updates the corresponding Protocol on Protection of the Black Sea Marine Environment Against Pollution from Land-Based Sources of 1992, for example, still needs to be ratified. As a consequence, there is a long regulatory vacuum. In addition, in the Black Sea there is not yet an effective 'soft law' instrument on ICZM or MSP that could bridge the time gap (Vinogradov, 2007).

Moreover, a protocol is usually less detailed than 'soft law' instruments. States are often reluctant to commit themselves to detailed legal obligations. The regulation of issues that are typically a matter of national competence (e.g. urban planning) at a regional level often meets with particular resistance (Rochette and Billé, 2012). This results in very general and vague provisions and in 'framework' type protocols that have, in the end, a similarly weak effect as 'soft law' instruments. It is thus questionable if such a protocol is worth the complicated adoption process (Vinogradov, 2007).

The problem is aggravated by the fact that, especially compared to other European Seas (the Mediterranean, the Baltic and the North Sea), cooperation in environmental matters in the Black Sea seems still to be at an early stage (Vinogradov, 2007). The activities under the Bucharest Convention already allowed a significant increase in public involvement in environmental protection and the efficient addressing of transboundary environmental issues. To achieve all the objectives of the Convention, however, progress still needs to be made, especially with regard to financing and enforcement. Notably, the Convention does not contain any instruments to ensure compliance with its provisions.

Moreover, the Black Sea Commission has yet to achieve the level of efficiency of HELCOM or the OSPAR Commission (Protection of the Environment of the North-East Atlantic). The current organizational structure of the Black Sea Commission is too complex and there is too little accountability for environmental performance. In the past, missed deadlines have often simply been replaced by new ones or activities have been postponed to the next working period (BSC, 2007). Furthermore, the Commission does not seem to be adequately staffed and funded to draft and implement an additional protocol (Vinogradov, 2007).

To conclude: a binding protocol is not always the magic bullet for establishing efficient ICZM and MSP structures (Rochette and Billé, 2012).

Quickly Realizable Options

With a 'Code of Practice' or with guidelines, the future course of action of states can be fast and efficiently determined. Even if they do not have the same force as binding instruments, such 'soft law' instruments can help to advance ICZM and MSP by establishing common standards, by helping states to improve their legal and institutional framework, and by further anchoring the ICZM and MSP concept in the region. An important characteristic of such 'soft law' instruments is their flexibility. Because of their non-binding nature, states are more easily convinced to adopt or modify them without lengthy discussions about every detail, which is particularly advantageous in the face of pressing environmental problems (Vinogradov, 2007).

As a first step, the formulation of guidelines therefore seems to be a useful option,

perhaps complemented by the establishment of an action plan that determines concrete practical measures (Vinogradov, 2007). These guidelines could also provide the basis for a later development of a binding ICZM and MSP instrument.

Evaluation of Progress at National Level

Bulgaria

Bulgaria is located in south-eastern Europe; its coastline measures 378 km and comprises the provinces of Dobrich, Varna and Burgas (EC, 2009). The Balkan Mountains reach the edge of the Black Sea at Cape Emine, dividing the coastline into a southern and a northern part. Parts of Bulgaria's northern Black Sea coast feature rocky headlands with cliffs up to 70 m high, whereas the southern coast is known for its wide sandy beaches. The two largest cities and main seaports on the Bulgarian coast are Varna in the north and Burgas in the south.

The increasing urbanization of the coast as well as industrial activities, shipping, pollution and wastewater discharge put valuable territories, protected areas, dunes and beaches in danger. Also, the vast beaches along the Bulgarian Black Sea coast and the temperate continental climate favour the tourist industry, which constitutes another risk factor for the ecosystems of the coastal zone (Palazov and Stanchev, 2006).

Bulgaria has only recently become an EU Member State and has also just started the ICZM process. To harmonize its legislation with the acquis communautaire, many laws, plans and programmes have been issued concerning environmental protection, sustainable development and spatial planning (Thetis, 2011). The main policy action undertaken in Bulgaria to protect the coastal zones was the adoption of the Black Sea Coast Spatial Planning Act, promulgated in State Gazette No. 48/2007, with the objective to create conditions for the stable and integrated development and protection of the Black Sea coastline (Art. 2). The law distinguishes two development zones (Zone A and Zone B) for which specific restrictions with regard to the density of buildings, the maximum building height as well as the minimum space for green areas have been stipulated (EC, 2009).

Bulgaria has so far developed neither a strategy nor an action plan for ICZM and there is no authority competent to implement the ICZM principles yet. Among the strategic objectives of the National Concept for Spatial Development for the period 2013–2025 (National Centre for Regional Development, Sofia, 5 November 2012) is, however, 'Integrated management and sustainable development of the Black Sea coastal municipalities, including through cross-border cooperation with neighbouring countries from the Black Sea Region, for introduction of an Integrated Maritime Policy' (Objective 5.1).

Georgia

Georgia's coastline stretches approximately 315 km along the Black Sea, across 12 administrative districts and three port cities, Batumi, Poti and Sokhumi. The coastal zone is dominated by wetland ecosystems. On the north and south end of the coast, there are also steep cliffs and mountains.

Human activities are putting increasing pressure on the ecosystems of the coastal zone (World Bank, 2007). Areas of forest and vegetation have significantly decreased, there is a progressive erosion of the coast, untreated water pollutes the sea and there are many examples of unsustainable developments, like unnecessary infrastructure projects and the illegal construction of dachas.

In October 1998, the State Consultative Commission for Integrated Coastal Zone Management was established by Presidential Decree No. 608 in order to develop the institutional framework for an integrated

planning and management of the coastal resources of Georgia. A law on ICZM has been drafted, but has never been adopted. Instead, the Law of Georgia on Spatial Planning and Urban Development was adopted in 2005 and now regulates planning at local, regional and national levels. The draft ICZM law was reworked into non-binding guidelines. The institutional and legal framework for ICZM is thus still in its initial phase (World Bank, 2007).

With regard to the protection of the Black Sea, the National Environmental Action Programme of Georgia 2012–2016 (Approved by the Resolution of the Government No. 127, Tbilisi, 24 January 2012) states that 'Existing national legislation needs to be updated in accordance with modern European practices. Introduction of Integrated Coastal Zone Management (ICZM) approaches and protection of the coastal zone from degradation also requires appropriate legislation to be in place.'

Romania

Romania is located in south-eastern Europe at the lower reaches of the Danube River. Its coast on the Black Sea stretches about 245 km from Ukraine in the north to Bulgaria in the south. The coastal region is called Dobrogea and is subdivided into two regional administrative units, Tulcea in the north and Constanta in the south. The northern part, Tulcea County, is characterized by sandy beaches, low altitudes and gentle submarine slopes. The Danube Delta dominates this area. The southern part features limestone cliffs, small sandy beaches and steep submarine slopes. It is the focal point of Romanian seaside tourism activities. The capital of Constanta County is Constanta, the second biggest city of Romania, with the country's largest port (Demmers *et al*., 2004).

As one of the more recent EU Member States, Romania is in a process of rapid economic development. The activities in the Romanian coastal and sea area include fishing, shipping, tourism, military activities and oil and gas extraction. These activities are not always compatible (Coman *et al*., 2008) and for a prosperous development of the country both now and in the future, it is essential not to neglect the protection of the valuable resources of the Black Sea (Varga *et al*., 2011).

In 2002, the Governmental Emergency Ordinance 202/2002 was issued as the legal basis for ICZM. That Ordinance was updated by the Law No. 280/2003, following the European Parliament and Council Recommendation of 30 May 2002 on Integrated Coastal Zone Management in Europe (2002/413/EC). It regulates the designation of coastal zones, restrictions of certain human activities, management measures, finance, public participation and enforcement. A National Committee of the Coastal Zone (NCCZ) was established in 2004.

Romania is thus the first Black Sea country that has a special legal and institutional framework for ICZM and already more than 70% of the Romanian coastline has protected status, including particularly the Danube Delta Biosphere Reserve (Nicolaev, 2011). However, there is still no single 'planning authority' for the sea, but a specific authority for each activity (Coman *et al*., 2008). Moreover, sectoral controls are often not able to respond quickly to new pressures (Coman *et al*., 2008) and to pay due regard to the cumulative impacts of the various sea uses.

Russia

The Krasnodar Region is the southernmost region of Russia and borders the Black Sea and the Sea of Azov. Geographically, the area is split by the Kuban River into two different parts. The western extremity of the Caucasus range lies in the southern third of the region, within the Crimean sub-Mediterranean forest ecoregion.

The Krasnodar Region is one of the most economically developed regions in Russia, with an important port in Novorossiysk. Being the warmest region of the country, the Black Sea coast of Krasnodar has also become the most popular tourist destination of Russia, focused on the resort city of Sochi.

Between 1993 and 1994, a number of Presidential Decrees relevant to ICZM were adopted. Following these, a federal target programme called 'Integrated Coastal Zone Management for the Black and Azov Seas Taking into Account the Task of Rational Use of Natural Resources in the Black Sea and Adjacent Territory' was prepared and approved. However, in 1997, the programme was suspended again (Vlasyuk, 2005).

In the Russian Federation legislation, the coastal zone is not yet regarded as an integral, natural 'land-sea' complex. Instead, there are various sectoral regulations for the protection and management of coastal and marine resources and various government bodies are responsible for their implementation. This situation is not beneficial for the implementation of an integrated management approach,[8] which is listed in the Maritime Doctrine of Russian Federation 2020 (27 July 2001) as one of the principles of the future national maritime policy (an 'integrated approach to maritime activities').

Turkey

Turkey has 1701 km of coastline bordering the Black Sea. The Black Sea region is divided into an eastern and a western part that show very different characteristics. Along the eastern part, mountain ranges run parallel to the coast and severely limit the width of the coastal area, sometimes to a few metres, which renders the area unsuitable for many coastal uses (Ozhan, 2005). On the western Black Sea, there are alluvial plains (e.g. Kizilirmak and Yesilirmak). The coastal area along these alluvial and deltaic shores widens significantly from a handful of kilometres to a few tens of kilometres, comprising agricultural land of very high productivity (Ozhan, 2005).

Shipping, fishing, urbanization, and the conservation of natural and cultural heritage are the traditional sectors that have featured in the coastal zone. Recently, new sectors such as tourism and mariculture have become increasingly important (Ozhan, 2005).

Even though there have been several efforts since the late 1980s to apply a more integrated approach to the management of coastal zones and to transfer more responsibilities to local administrations, the management of coastal development in Turkey is still centralized and highly sectoral (Ozhan, 2005).

The main aims of the Coastal Law No. 3621 of 1990, amended in 1992 (Ozhan, 2005), are to protect the coasts, to utilize the coastal resources only for public benefit, and to ensure free access of the public to the coast. On the first 50 m of the shore strip, most constructions are forbidden. However, the Coastal Law is not a coastal management law that comprehensively regulates all activities (Unsal, 2013) and establishes a special institutional structure. It is also clearly focused on activities on the shore, not in the sea (Kaya, 2010).

The consequences of this lack of a holistic legal framework for ICZM are overlapping competences of various organizations (more than 20 institutions are responsible for the sea and coastal areas) and gaps in the management of the coast. Therefore, efforts to advance ICZM policies do not go beyond project level (EC, 2011).

Ukraine

The Black Sea coastline of Ukraine (about 1829 km, including the Crimean Peninsula) includes the northern and north-western shores of the Black Sea and the Sea of Azov. The cities of Odessa and Mariupol are located on the Ukrainian coast. The coast of the Black Sea is intersected by rivers, the largest of which are the Danube River, the Dniester River and the Dnieper River.

The land here is relatively flat and there are many sandy beaches.

A major environmental problem in Ukraine is the inefficient treatment of industrial and municipal wastewater, which is causing eutrophication and bacterial and chemical pollution of the country's main rivers and subsequently of the Black Sea (UNECE, 2007). Tourism and industrial activities along the coast also cause stress to the environment.

The development of an ICZM policy in Ukraine started with the Ministerial Declaration on the Protection of the Black Sea in Odessa in 1993, which confirmed the commitment to ICZM and sustainable development of coastal areas and the marine environment under national jurisdiction (Onderstal, 2000). It was afterwards decided to implement national coastal zone policies, including legislative measures and economic instruments. However, even though concepts and guidelines on ICZM have been developed, and a law 'on the coastal zone' (Radchenko, 2012) has been drafted, concrete regulations have not yet been adopted.

Conclusion

An additional protocol would be a great challenge for the Black Sea Commission and the Black Sea states. Therefore, the 'Feasibility Study for the Black Sea ICZM Instrument' of 2007 (Vinogradov, 2007) favours a two-step approach. As a first step, it recommends a combination of 'soft law' instruments. Depending on the success of those instruments, it recommends the adoption of a binding protocol as a second step.

However, in light of the international and especially European progress on ICZM and the wider concept of MSP, 'soft law' can only be an option for a short transitional period. The problems resulting from the different stages of progress in this area of the six Black Sea countries have to be taken into account. The measures that EU Member States are required to take to protect the marine environment by the MSFD and the MSPD might largely run aground if not all Black Sea riparian states, especially including Russia, pull together and regulate uses in their common basin in a binding fashion. A protocol could be adapted to the specific regional situation. It should, however, at least anchor the ecosystem approach as a basic principle of MSP.

This conclusion is also supported by the participants of the 3rd Black Sea and Upgrade Black Sea Scene Joint Scientific Conference BS-OUTLOOK (Odessa, Ukraine, 1–4 November 2011). During Session 4, they agreed on the 'necessity to initiate consultations in support of the development of [an] ICZM legal instrument (protocol) for the Black Sea region'. Furthermore, they agreed to 'introduce and develop in the Black Sea area the new field of maritime spatial planning in a coherent manner and in close integration with ICZM'. One of the overall conclusions of the conference was that 'spatial planning in the Black Sea is mandatory (as part of ecosystem-based management) for a correct management of its resources'.

Notes

1 UNESCO/IOC, Marine Spatial Planning Initiative, http://www.unesco-ioc-marinesp.be/marine_spatial_planning_msp
2 Johannesburg Declaration on Sustainable Development (point 5), World Summit on Sustainable Development, A/CONF. 199/20, Chapter 1, Resolution 1, Johannesburg, September 2002.
3 Convention on Biological Diversity, Ecosystem Approach/Principles, https://www.cbd. int/ecosystem/principles.shtml

4 Baltic Sea Broad-Scale Maritime Spatial Planning (MSP) Principles, adopted by HELCOM HOD 34-2010 at the 54th Meeting of VASAB CSPD/BSR, Principle 2.
5 HELCOM/VASAB, 'Guideline for the implementation of ecosystem-based approach in Maritime Spatial Planning (MSP) in the Baltic Sea area', October 2015, http://www.helcom.fi/Documents/HELCOM%20at%20work/Groups/MSP/Guideline%20for%20the%20implementation%20of%20ecosystem-based%20approach%20in%20MSP%20in%20the%20Baltic%20Sea%20area.pdf
6 Convention on Biological Diversity, The Ecosystem Approach, http://www.cbd.int/ecosystem/
7 Convention on Biological Diversity, The Ecosystem Approach, http://www.cbd.int/ecosystem/
8 'Legal principles of coastal zone management in the Russian Federation', UNESCO, Sustainable Development in Coastal Regions and Small Islands, http://www.unesco. org/csi/act/russia/legalpro7.htm

References

Akademie für Raumforschung und Landesplanung (ARL) (2000) *Nachhaltigkeitsprinzip in der Regionalplanung: Handreichung zur Operationalisierung*. Forschungs- und Sitzungsberichte der ARL 212. Hannover.

ARCADIS (2011) *Comparative Analysis of the OURCOAST Cases: Report on ICZM in Europe*. European Commission, Brussels. http://ec.europa.eu/ourcoast/download.cfm?fileID=1709

Beaucamp, G. (2002) *Das Konzept der zukunftsfähigen Entwicklung im Recht.* Mohr Siebeck, Tübingen.

Billé, R. and Rochette, J. (2010) *Feasibility Assessment of an ICZM Protocol to the Nairobi Convention*. Report for Indian Ocean Commission and the Nairobi Convention Secretariat. 101 pp.

Buchholz, H. (2004) Raumnutzungs- und Raumplanungsstrategien in den deutschen Meereszonen. *Konzeptionelles Entwicklungsziel Nr. 1, Informationen zur Raumentwicklung*, **7/8**, 485–489.

Bundesamt für Naturschutz (BfN) (2006) *Naturschutzfachlicher Planungsbeitrag zur Aufstellung von Zielen und Grundsätzen der Raumordnung für die deutsche Ausschließliche Wirtschaftszone der Nord- und Ostsee*. BfN, Bonn. 38 pp.

Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR) (2011) *Beitrag der Raumordnung zur Steigerung des Anteils erneuerbarer Energien: Rechtliche Möglichkeiten der Raumordnung im Bereich 'Repowering', Forschungsprojekt, 2011*. http://www.bbsr.bund.de/BBSR/DE/FP/MORO/Forschungsfelder/2011/Repowering/01_Start.html?nn=432564

Clark, J.R. (1992) *Integrated Management of Coastal Zones, Section 2.11: Creating Protected Areas*. Food and Agriculture Organization of the United Nations, Rome. http://www.fao.org/docrep/003/T0708E/T0708E02.htm

Coman, C., Alexandrov, L., Dumitru, V. and Lucius, I. (2008) *PlanCoast Project in Romania: Extending Coastal Spatial Planning to the Marine Zone*. http://www.nodc.org.ua/ukrncora/index2.php?option=com_docmanandtask=doc_viewandgid=77andItemid=35

Commission on the Protection of the Black Sea Against Pollution (BSC) (2007) *Black Sea Transboundary Diagnostic Analysis and Strategic Action Plan (TDA)*. Istanbul. 269 pp. http://www.blacksea-commission.org/_tda2008.asp

Crowder, L. and Norse, E. (2008) Essential ecological insights for marine

ecosystem-based management and marine spatial planning. *Marine Policy*, **32**, 772–778.

Demmers, I., Keupink, E., Popa, B. and Timmer, R. (2004) *Outline Strategy for the Integrated Management of the Romanian Coastal Zone*. Draft Report, Royal Haskoning, Netherlands. http://ec.europa.eu/environment/iczm/evaluation/iczmdownloads/romania2004.pdf

Douvere, F. (2008) The importance of marine spatial planning in advancing ecosystem-based sea use management. *Marine Policy*, **32**, 762–771.

Drankier, P. (2012) Embedding maritime spatial planning in national legal frameworks. *Journal of Environmental Policy and Planning*, **14**, 7–27.

Ehler, C.N. (2012) Perspective: 13 myths of marine spatial planning. *Marine Ecosystems and Management*, **5** (5), 1–3.

Ehler, C. and Douvere, F. (2007) *Visions for a Sea Change*. Report of the First International Workshop on Marine Spatial Planning, Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides 46, ICAM Dossier 3. UNESCO, Paris.

European Commission (EC) (2009) *Country Overview and Assessment of Climate Change Adaptation: Bulgaria*. http://ec.europa.eu/maritimeaffairs/documentation/studies/documents/bulgaria_climate_change_en.pdf

European Commission (EC) (2011) *Exploring the Potential of Maritime Spatial Planning in the Mediterranean: Country Report – Turkey*. http://ec.europa.eu/maritimeaffairs/documentation/studies/documents/turkey_01_en.pdf

European Commission (EC) (2013a) *Proposal for a Directive of the European Parliament and of the Council establishing a Framework for Maritime Spatial Planning and Integrated Coastal Management*. COM(2013) 133 final, Explanatory Memorandum.

European Commission (EC) (2013b) *Commission Staff Working Paper/Executive Summary of the Impact Assessment of the Proposal for a Directive of the European Parliament and of the Council establishing a Framework for Maritime Spatial Planning and Integrated Coastal Management*. SWD(2013) 64 final. http://ec.europa.eu/maritimeaffairs/policy/maritime_spatial_planning/documents/swd_2013_64_en.pdf

Hanusch, M., Eberle, D., Jacoby, C. *et al.* (2007) *Umweltprüfung in der Regionalplanung*. E-Paper der ARL Nr. 1, Hannover.

Janssen, G., Sordyl, H., Albrecht, J. *et al.* (2008) *Anforderungen des Umweltschutzes an die Raumordnung in der deutschen Ausschließlichen Wirtschaftszone (AWZ): einschließlich des Nutzungsanspruches Windenergienutzung*. Forschungsprojekt im Auftrag des Umweltbundesamtes FuE-Vorhaben Förderkennzeichen 205 16 101.

Jones, P.J.S., Lieberknecht, L.M. and Qiu, W. (2016) Marine spatial planning in reality: introduction to case studies and discussion of findings. *Marine Policy*, **71**, 256–264.

Kaya, L.G. (2010) Application of collaborative approaches to the integrative environmental planning of Mediterranean coastal zone: case of Turkey. *Journal of Bartin University*, **12** (18), 21–32.

Köppel, J., Wende, W. and Herberg, A. (2006) *Naturschutzfachliche und naturschutzrechtliche Anforderungen im Gefolge der Ausdehnung des Raumordnungsregimes auf die deutsche Ausschließliche Wirtschaftszone*. Technische Universität Berlin.

Laffoley, D., Maltby, E., Vincent, M.A. *et al.* (2004) *The Ecosystem Approach: Coherent Actions for Marine and Coastal Environments*. A Report to the UK Government. English Nature, Peterborough. 65 pp.

Leibenath, M. (2009) Biotopverbund – eine komplexe Koordinationsaufgabe? Chancen,

Risiken und Nebenwirkungen des Metaphernpaares 'Fragmentierung – Biotopverbund'. Kurzfassung des Vortrages/ Wissenschaftliche Plenarsitzung der Akademie für Raumforschung und Landesplanung zum Thema 'Wenn zwei sich streiten… Bessere Planung durch Koordination'.

Mose, I. and Weixlbaumer, N. (2007) A new paradigm for protected areas in Europe?, in *Protected Areas and Regional Development: Towards a New Model for the 21st Century* (ed. Ingo Mose). Ashgate Studies in Environmental Policy and Practice, Aldershot, UK.

Nicolaev, S. (2011) *Integrated Coastal Zone Management in Europe: The Way Forward*. OurCoast Conference Riga. http://www.ourcoastconferenceriga.eu/presentations/session2/simion_nicolaev.pdf

Odum, W.E. (1982) Environmental degradation and the tyranny of small decisions. *BioScience*, **32** (9), 728–729.

Onderstal, M. (2000) *Coastal Guide: Coastal Management in Ukraine*. EUCC International Secretariat. http://www.coastalguide.org/icm/blacksea/index.html

Oral, N. (n.d.) *Summary of EEZ Zones in the Black Sea*. Commission on the Protection of the Black Sea Against Pollution. http://www.blacksea-commission.org/_socio-economy-eez.asp

Ozhan, E. (2005) *Coastal Area Management*. UNEP/MAP, Priority Actions Programme Regional Activity Centre. http://www.medcoast.org.tr/publications/cam%20in%20turkey.pdf

Palazov, A. and Stanchev, H. (2006) *Human Population Pressure, Natural and Ecological Hazards along the Bulgarian Black Sea Coast*. SENS'2006, Varna. http://www.space.bas.bg/astro/ses2006/Cd/E23.pdf

Pegaso Project (2014) The Black Sea Basin and ICZM, in *Evaluation Report on CASEs Multi-sector, Multi-administrative and Multi-scale Work, Integrated Approach Method in CASEs*. EU FP7 – ENV.2009.2.2.1.4. http://www.pegasoproject.eu/links-9.html

Proelß, A. (2009) Völkerrechtliche Grenzen eines maritimen Infrastrukturrechts. *EurUP Zeitschrift für Europäisches Umwelt- und Planungsrecht*, **7** (1), 9.

Qiu, W. and Jones, P.J.S. (2013) The emerging policy landscape for marine spatial planning in Europe. *Marine Policy*, **39**, 182–190.

Radchenko, V. (2012) *Marine Spatial Planning: Challenges and Opportunities in Ukraine*. The East Asian Seas Congress. http://eascongress.pemsea.org/sites/default/files/document-files/presentation-msp-radchenko.pdf

Ritter, E.-H. (2005) Freiraum/Freiraumschutz, in *Handwörterbuch der Raumordnung*. Akademie für Raumforschung und Landesplanung, Hannover.

Rochette, J. and Billé, R. (2012) ICZM Protocols to Regional Seas Conventions: What? Why? How? *Marine Policy*, **36**, 977–984.

Salm, R.V., Clark, J. and Siirila, E.E. (2000) *Marine and Coastal Protected Areas: A Guide for Planners and Managers*. IUCN, Washington, DC.

Schäfer, N. (2009) Maritime spatial planning: about the sustainable management of the use of our seas and oceans, in *Understanding and Strengthening European Union–Canada Relations in Law of the Sea and Ocean Governance*. The Northern Institute for Environmental and Minority Law, Rovaniemi, Finland.

Schubert, M. (2015) Meeresraumordnung und Europarecht: Die Richtlinie (2014/89/EU zur Schaffung eines Rahmens für die maritime Raumplanung), in *Jahrbuch des Umwelt-und Technikrechts 2015*. Erich Schmidt Verlag, Berlin.

Schultz-Zehden, A., Gee, K. and Scibior, K. (2008) *Handbook on Integrated Maritime Spatial Planning*. PlanCoast Project

(2006–2008), EU INTERREG IIIB CADSES. 100 pp. http://www.plancoast.eu/files/handbook_web.pdf

Siedentop, S. (2003) Prüfung kumulativer Umweltwirkungen in der Plan-UVP, in *Umweltprüfung für Regionalpläne*. Akademie für Raumforschung und Landesplanung, Hannover.

Spektrum (2001) *Lexikon der Geographie*. Spektrum Akademischer Verlag, Heidelberg. http://www.spektrum.de/lexikon/geographie/integrativer-naturschutz/3815

Thetis (2011) *Analysis of Member States Progress Reports on Integrated Coastal Zone Management (ICZM)*. Final Report to DG Environment, European Commission. http://ec.europa.eu/environment/iczm/pdf/Final%20Report_progress.pdf

UN Economic Commission for Europe (UNECE) (2007) *Ukraine, Second Review*. Committee on Environmental Policy, Environmental Performance Reviews Series No. 24. New York and Geneva.

Unsal, F. (2013) *Overview of Turkish Coastline Policy and Implementation: Mare Nostrum Project*. http://www.marenostrumproject.eu/PDFs/MareNostrum_KickoffMeeting_Turkish_Coastline_Policy.pdf

Varga, A.L., Coman, C. and Stanica, A. (2011) Romania: ICZM planning in an initial stage, in *Climate of Coastal Cooperation, 2011*. http://www.coastalcooperation.net/part-I/I-3-3.pdf

Vinogradov, S. (2007) *A Feasibility Study for the ICZM Instrument to the 1992 Bucharest Convention*. UNDP-GEF Black Sea Ecosystem Recovery Project, Phase II.

Vlasyuk, K. (2005) *Inventory of Policies and Regulatory Acts and Practices of Its Implementation: Development of Proposals in Sphere of Water Protection, Water Management and Integrated Coastal Zone Management*. UNDP-GEF Black Sea Ecosystem Recovery Project, Phase II, Istanbul.

Wende, W., Herberg, A., Köppel, J. *et al*. (2007) Meeresnaturschutz und Raumordnung in der deutschen Ausschließlichen Wirtschaftszone. *Naturschutz und Landschaftsplanung*, **39** (3), 79–85.

World Bank (2007) *Implementation, Completion and Results Report on a Credit to Georgia for an Integrated Coastal Management Project*. Report#: ICR443.