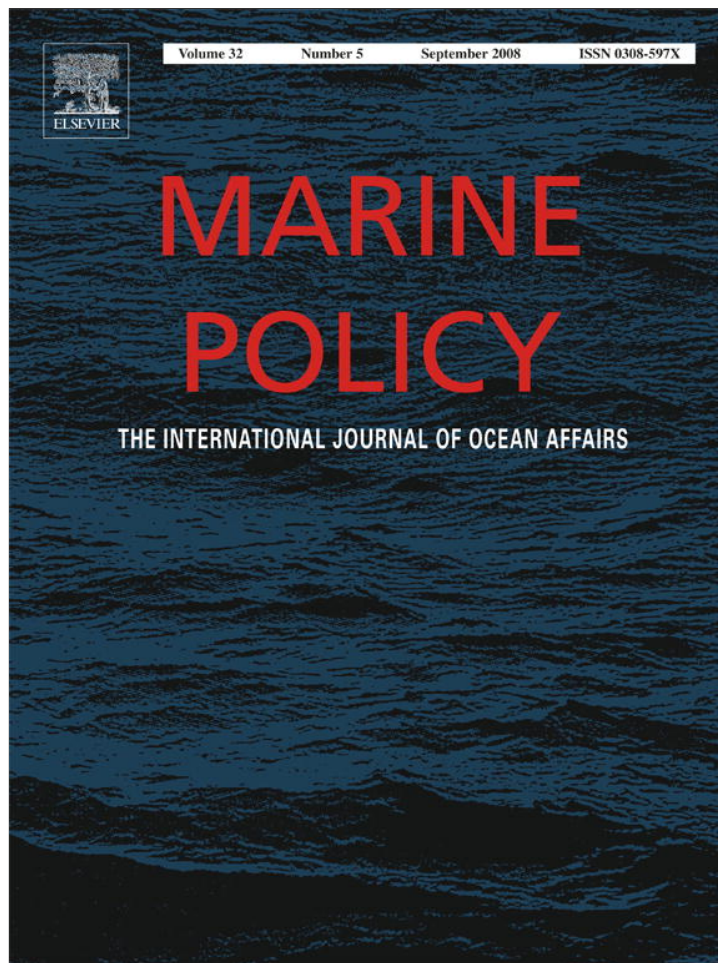


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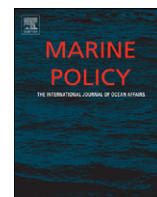
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The international legal framework for marine spatial planning

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ABSTRACT

Increasing demand for ocean resources, both living and non-living, have already lead to loss of biodiversity, habitat depletion and irreversible damage to the marine environment. Furthermore, introduction of new kinds of sea uses, spatial extension of ongoing sea uses and the need to better protect and conserve the marine biological diversity will result in increasing conflicts among the various users, as well as between the users and the environment. Marine spatial planning as a process to allocate space for specific uses can help to avoid user conflicts, to improve the management of marine spatial claims, and to sustain an ecosystem-based management of ocean and seas. This article explores the rights and duties towards exploitation and protection of the marine environment under the jurisdiction of coastal states as reflected in two important global conventions, the United Nations Convention on the Law of the Sea and the Convention on Biological Diversity. Both Conventions provide the main legal framework for marine spatial planning that have to be taken into account in planning at the regional and national level.

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1. Introduction

Expansion of sea uses under national jurisdiction can result in new user conflicts that can add to already existing conflicts. Furthermore, activities continue to expand beyond national jurisdiction of coastal states due to newly discovered natural resources and the technical capabilities to exploit them [1,2]. The need for additional space for exploitation and use of the sea changes in two directions. “Fixed” activities, such as wind and wave energy, cables and pipelines, coastal defence, port infrastructures, aquaculture, land extension, and potentially in the future, carbon sequestration and storage, are gaining importance in comparison to “mobile” activities. The mobile uses, such as fisheries, shipping, air transport, military use, water recreation, sand and gravel extraction and dredging activities do increase their spatial occupation by supplying services to some fixed activities and further intensify their activities in the zones they already occupy. Future requirements for space at sea will put additional pressure on current uses and natural systems that are already stressed. New activities, expansion of existing activities, as well as nature conservation requirements, will inevitably lead to an increased conflict potential. Besides, the duty to protect biological diversity of oceans and seas by *inter alia* establishing marine protected areas (MPAs) often conflicts with the interest of

existing marine uses. Marine spatial planning (MSP) can be used as an appropriate process and instrument to avoid user conflicts, to manage marine activities more sustainably and to implement improved area-based protection and conservation of marine living resources. Although species protection is equally important, the focus of this paper is on place-based management (see also Crowder and Norse in this issue). Some coastal states already have started the process of spatial planning of areas under their jurisdiction as a matter of conflict resolution, as a tool to protect certain species or habitats, or as a way to introduce a long-term vision to regulate activities under their jurisdiction [3], in short striving to integrate economic exploitation and social benefits with the duty to protect the marine environment and to guarantee biological diversity for current and future generations. One of the best examples of MSP initiatives in Europe is the Marine Bill White Paper “A Sea Change” (2007) of the UK government and the process leading to it [4]. In the UK White Paper chapter 4 is fully dedicated to planning in the marine area with the aim to “create a strategic marine planning system that will clarify our marine objectives and priorities for the future, and direct decision-makers and users towards more efficient, sustainable use and protection of our marine resources”. The focus of this article is on the legal boundaries of a marine ecosystem-based management through spatial planning. This is mainly done by reflecting on the provisions of two global conventions, the United Nations Convention on the Law of the Sea (UNCLOS), the Convention on Biological Diversity (CBD) and recent related policy development. Although both conventions have different objectives, in terms of

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MSP they are mutual supportive and have to be taken into account to implement MSP.

2. Marine spatial planning

Management of marine areas is mainly characterized by sectoral planning or zoning focussing on a particular use for exploitation of living and non-living resources and for safety reasons, e.g., fisheries, oil and gas, wind farms, and shipping, or inspired by the necessity to protect and conserve certain species or habitats, e.g., MPAs. There is no generally accepted definition of what is meant by MSP. MSP can be defined as “a process of analyzing and allocating parts of the three-dimensional marine spaces to specific uses, to achieve ecological, economic and social objectives that are usually specified through the political process; the MSP process usually results in a comprehensive plan or vision for a marine region” [5]. MSP is a complicated, but necessary process, to establish a more rational organization of using marine space and the user interactions in order to protect the biological diversity of the marine environment, while taking into account social and economic objectives. A product of MSP can be a strategic plan that looks forward and is proactive to regulate, manage and protect the marine environment by allocating space to resolve actual and potential multiple conflicting uses and to facilitate sustainable management of the seas. The plan should provide a firm basis for rational and consistent decisions on permit applications and to allow users of the sea to make future decision with greater knowledge and confidence. The plans will have to be flexible to allow for adaptation as a consequence of new scientific insights regarding effects of certain activities or major changes in the natural systems of seas and Earth (biological diversity and climate change effects) and needs to be developed in consultation with stakeholders. Stakeholder participation provides societal acceptance of governmental regulations and improves implementation of MSP, but can also provide scientifically useful data that is not available through scientific monitoring and research (see also Gilliland and Laffoley, and Douvere and Ehler in this issue).

MSP is considered one of the tools to achieve ecosystem-based, sea-use management and can be performed on the basis of national legislation or a strong national policy [5]. MSP needs an appropriate planning scale. So far, it has started at the national level, confined within national boundaries of jurisdiction and only taking into account local habitats and sub-ecosystems. Preferable, these national experiences should lead to MSP on a regional and international scale. This leads to the following questions: what is the appropriate international or regional scale and what are the opportunities and obstacles?

3. Setting the boundaries for a marine ecosystem-based management through MSP

Marine ecosystem approaches [6,7]¹ have since long been advocated in biological sciences and fisheries. The concept of “large marine ecosystems” or LMEs was introduced in the 1980s, to delimitate ecosystems for management purposes [8–11]. Out of the 64 LME defined worldwide,² 13 are pertinent to the European

environment [12]. Since 1995, the International Waters Programme of the Global Environment Facility (GEF) has provided funding to support selected country-driven projects introducing ecosystem-based assessment and management practices for LMEs [13,14].³ These LME projects support the objectives of Chapter 17 of Agenda 21 adopted at United Nations Conference on Environment and Development (UNCED) in 1992.⁴ However, UNCED rejected the idea of including references to LMEs in Agenda 21[7]. The boundaries of most LMEs extend beyond the national boundaries of a single coastal state and require co-operation among more than two coastal states bordering the LME [15]. Since national boundaries do not conform to ecosystem boundaries, the boundary question is often seen as a constraint for effective management.⁵ Some examples of successful management of LMEs are found in cases where the LME is fully situated under the jurisdiction of a single coastal state (e.g., Northeast Australian Shelf/Great Barrier Reef LME in Australia). Today, coastal states already make use of various forms of coastal and ocean management in areas under their jurisdiction [16,17], while in some cases leading to integrated MSP initiatives [3,18,19]. Nature conservation and protection as part of MSP is generally done at scales smaller than regions within politically, not ecologically, defined units [20].

European states and other states bordering a regional sea have besides taking national initiatives, preferred to co-operate in first instance on the basis of regional conventions. The European Union in its Thematic Strategy for the Marine Environment, relies on marine regions for an ecosystem-based approach,⁶ most of them delimited on the basis of European regional seas, such as the Baltic Sea, the North Sea, Mediterranean Sea, Black Sea and identified subareas (e.g., Iberian coastal sea, Celtic-Biscay Shelf) in the North East Atlantic Ocean.⁷ For those European regional seas there already exist legal co-operation frameworks among the

³ Up to 2005, 121 developing countries are engaged in the preparation and implementation of GEF-LME projects and a total of 10 projects including 70 countries have been approved by the GEF Council:

⁴ Chapter 17 “sets forth rights and obligations of States and provides the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources. This requires new approaches to marine and coastal area management and development, at the national, sub-regional, regional and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit, ...”. There is no reference to marine spatial planning, but to a policy planning body: “17.6. Each coastal State should consider establishing, or where necessary strengthening, appropriate coordinating mechanisms (such as a high-level policy planning body) for integrated management and sustainable development of coastal and marine areas and their resources, at both the local and national levels. ... Such national coordinating mechanisms could provide, *inter alia*, for: (a) preparation and implementation of land and water use and siting policies; (b) implementation of integrated coastal and marine management and sustainable development plans and programmes at appropriate levels; (c) preparation of coastal profiles identifying critical areas, including eroded zones, physical processes, development patterns, user conflicts and specific priorities for management; etc.”

⁵ Juda refers *inter alia* to the Turbot dispute between Canada and Spain: Juda (1999, p. 94). Kimball refers to regional and marine conventions and programs that are primarily based on geographic configurations, while regional fishery agreements focus on target species: Kimball (2001, p. 46). Wang refers also to the lack of a scientific basis, the problematic management due to the scale and conflicts with existing regimes, such as regional fisheries commissions as a reason why some scholars consider LMEs inappropriate for ecosystem management: Wang (2004, pp. 56–58).

⁶ This process included the production of a guidance document on the application of the ecosystem-based approach to the marine environment and a study on the identification of European Marine Regions on the basis of hydrological, oceanographic and bio-geographic features to guide implementation of the Strategy. An ecosystem-based approach is an approach whereby human activities affecting the marine environment will be managed in an integrated manner promoting conservation and sustainable use in an equitable way of oceans and seas.

⁷ Commission of the European Communities. Communication from the Commission to the Council and the European Parliament. Thematic Strategy on

¹ Various names are used, such as ecosystem approach, bio-regional planning, ecosystem management, eco-system based approach, ecosystem management approach, ecosystem-based approach to ocean management ... all referring to a comprehensive, science-based approach to conservation and management of environmental resources: CBD, Decision IV/1(1998).

² See for information of each of the 64 LMEs: <http://www.edc.uri.edu/lme/intro.htm>.

states bordering those seas in the form of regional conventions that established regional commissions.⁸ From a legal perspective, the main component of the Marine Strategy is a proposal for a Marine Strategy Directive (COM(2005)505) to achieve good environmental status of the marine environment by 2021 at latest. This proposed directive confirms the European marine regions as management units for implementation.⁹ Member states will be required to develop marine strategies for the Baltic Sea, the North East Atlantic Ocean and the Mediterranean Sea, and for their sub-regions.¹⁰ Concerning third countries bordering EU oceans and seas, the Maritime Strategy foresees co-operation, but leaving the planning and execution of measures to the regional level, taking into account the diversity of conditions, problems and needs of marine regions that require tailor-made solutions.

4. MSP and the Law of the Sea

MSP by coastal states, either national or regional, has to be consistent with their rights and obligations at sea. It is commonly accepted that the 1982 Law of the Sea Convention (UNCLOS) provides the legal basis for sea exploitation, the right to allocate activities and the duty to protect the marine environment.¹¹ UNCLOS remains silent about MSP as a management process. Although references to management can be found in articles concerning living resources of the EEZ¹² and the high seas,¹³ the exploitation of non-living resources on the deep seabed (Area),¹⁴ financial management skills of the member of the Economic

Planning Commission, the statute of the Enterprise,¹⁵ the promotion of development of marine scientific and technological capacity with regard to the management of marine resources, functioning of marine scientific and technological centres,¹⁶ and finally disputes.¹⁷ None of those forms of management refer to MSP. However, this does not prevent coastal states from taking MSP initiatives in their maritime areas. Furthermore, article 123 UNCLOS can be used as a legal basis for joint MSP initiatives by states bordering enclosed or semi-enclosed seas. Those states should cooperate and coordinate: (a) the management, conservation, exploration and exploitation of the living resources of the sea; (b) the implementation of their rights and duties with respect to the protection and preservation of the marine environment; and (c) their scientific research policies. This cooperation can be done directly or through an appropriate regional organization. Although article 123 is not a hard obligation ("should"), it is already the reflection of state practice in various parts of the world, even before the adoption of UNCLOS.¹⁸ MSP on the basis of regional co-operation is still embryonic, focussing on sea use identification, potential user conflicts, gathering scientific information on environmental effects of sea uses and in the best case developing guidelines to implement MSP.¹⁹

4.1. Zoning and jurisdiction according to the Law of the Sea

There are seven maritime areas in which coastal states can exercise jurisdiction (promulgation of legislation and enforcement of legislation)²⁰ regarding MSP: internal waters, archipelagic waters, territorial seas (TSs), contiguous zones, continental shelves (CSs), exclusive economic zones (EEZs) and fishery zones.²¹ Jurisdiction is different from area to area. In terms of MSP, the contiguous zone does not contribute in solving user-user conflicts or environmental protection, due to the nature of the rights of coastal states within a contiguous zone.²² On the high seas no state can unilaterally claim sovereignty (art. 89) or sovereign rights, and as a consequence cannot claim jurisdiction for MSP.²³ In some parts of oceans and seas, national or

(footnote continued)

the protection and Conservation of the Marine Environment. COM(2005)504. Brussels, 24.10.2005.

⁸ The Black Sea Commission (www.blacksea-commission.org), the Helsinki Commission (www.helcom.fi), the OSPAR Commission (www.ospar.org), the North Sea Commission (www.northsea.org), UNEP Mediterranean Action Plan (www.unepmap.org).

⁹ Commission of the European Communities. Proposal for a Directive of the European Parliament and of the Council establishing a Framework for Community Action in the Field of Marine Environmental Policy (Marine Strategy Directive). Brussels, 24 October 2005. COM(2005) 505 final. Political agreement by the Council (Environment) on 18 December 2006. Text Council 16976/06 of 20 December 2006.

¹⁰ These marine regions are further subdivided into marine sub-regions. In the North-East Atlantic: (i) in the Greater North Sea, including the Kattegat, the English Channel, the marine waters covered by the sovereignty or jurisdiction of Belgium, Denmark, France, Germany, the Netherlands, Sweden and the United Kingdom; (ii) in the Celtic Seas, the marine waters covered by the sovereignty or jurisdiction of Ireland and the United Kingdom; (iii) in the Bay of Biscay and the Iberian Coast, the marine waters covered by the sovereignty or jurisdiction of France, Portugal and Spain; (iv) in the Atlantic Ocean, the marine waters covered by the sovereignty or jurisdiction of Portugal surrounding the Azores and Madeira, and of Spain, surrounding the Canary Islands. In the Mediterranean: (i) in the Western Mediterranean Sea, the marine waters covered by the sovereignty or jurisdiction of Spain, France and Italy; (ii) in the Adriatic Sea, the marine waters covered by the sovereignty or jurisdiction of Italy and Slovenia; (iii) in the Ionian Sea, the marine waters covered by the sovereignty or jurisdiction of Greece, Italy and Malta; (iv) in the Aegean-Levantine Sea, the marine waters covered by the sovereignty or jurisdiction of Greece and Cyprus (art. 3).

¹¹ The United Nations Convention on the Law of the Sea was opened for signature on 10 December 1982 in Montego Bay, Jamaica. UN, The Law of the Sea: United Nations Convention on the Law of the Sea (UN Pub. Sales No. E.83.V5). The entry into force of the 1982 Convention has been delayed due to difficulties with the Convention's seabed mining provisions (Part XI) for the industrialized countries. To overcome these difficulties the Secretary-General of the UN convened a series of informal consultations that culminated in the adoption of the Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, on 28 July 1994. Text in International Legal Materials 1994; 33: 1309–1327. This Agreement is in force as from 28 July 1996. The 1982 Convention entered into force on 16 November 1994.

¹² Articles 61(2), 62(5), 65, 66(4), 67(1)(3) UNCLOS.

¹³ Articles 118 and 120 UNCLOS.

¹⁴ Article 150 (b) UNCLOS on rational management of the resources.

¹⁵ Articles 162 (2)(f)(ii) and 162 (2)(y) on powers and function of Assembly and Council; Article 164 UNCLOS and Annex IV.

¹⁶ Articles 266 (2) and 277 (a)(b) UNCLOS.

¹⁷ Article 297 (3)(a)(b) UNCLOS.

¹⁸ 1974 Helsinki Convention for the Baltic Sea, 1972 Oslo Convention on dumping and 1974 Paris Convention on land-based pollution in the North-East Atlantic, 1976 Barcelona Convention for the Protection of the Marine Environment and Coastal region of the Mediterranean Sea, 1978 Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution, 1981 Lima Convention for the Protection of the Marine Environment of the South Pacific and 1981 Abidjan Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of West and Central African region.

¹⁹ The OSPAR Working Group on Spatial Planning is currently designing a set of guidelines to implement MSP in the North Atlantic Region. Report of the joint meeting of the OSPAR NSRAC Working Group on Spatial Planning and the OSPAR Working Group on Marine Protected Areas, Species and Habitats (MASH), Bristol, United Kingdom, 5 October 2005 (unpublished report).

²⁰ Jurisdiction comprises jurisdiction to prescribe, jurisdiction to adjudicate and jurisdiction to enforce. *Annuaire de l'Institut de Droit International* 1994; 65/II: 133. In short, this means the promulgation of legislation and enforcement of legislation:

²¹ Every maritime zone is measured from the baseline. The baseline can be a normal baseline (the low-water line along the coast as marked on large-scale charts officially recognised by coastal states) or in exceptional cases a straight baseline (where the coastline is deeply indented or a fringe of islands lies in the immediate vicinity of the coast).

²² In the contiguous zone, adjacent to the territorial sea and extending no further than 24 nautical miles from the baselines, a coastal state may exercise the control necessary to prevent and punish infringements of its customs, fiscal, immigration, or sanitary laws and regulations within its territory or territorial sea.

²³ On the high seas there is freedom of navigation, over-flight, laying of cables and pipelines, constructing artificial islands or other installations, fishing and scientific research, although the last four freedoms are conditional (art. 87).

transboundary MSP is hampered by unresolved delimitations of TSs and EEZs among states. These technical issues have a negative influence on the ability of states to formulate their claims and develop MSP along disputed borders or in disputed zones. For example, in the Mediterranean Sea, territorial disputes still prevent the establishment of EEZs.²⁴ The majority of the Mediterranean Sea area is still high seas.

4.1.1. Internal waters

MSP jurisdiction is complete in internal waters on the landward side of the baseline, in which coastal states have full jurisdiction based on sovereignty (art. 8). These waters include single state bays, estuaries, coastal harbours, and waters enclosed by straight baselines. There is one exception: a right of innocent passage where straight baselines resulted in the enclosure of internal waters that were previously not considered as such (mostly former TS), regardless the fact that the enclosed area had actually not been used for international navigation [22].

4.1.2. Territorial sea

In the TS, up to a limit not exceeding 12 nautical miles from the baseline, coastal states have full jurisdiction for zoning and MSP, based upon sovereignty [23–26].²⁵ They can designate concession zones for the exploitation of non-living resources, dumping zones for dredged material, zones for wind farms and other energy-generating projects, zones for aquaculture projects, designate MPAs, establish safety or protection zones around ship wrecks and offshore installations. Coastal states can construct artificial islands, expand harbours, built jetties, and subdivide fishery zones, etc. The only limitation upon this competence is the right of innocent²⁶ passage²⁷ through the TS for ships of all states (art. 17). All ships whether in innocent passage or not, must however comply with the laws of the coastal state. Coastal legislation may not hamper innocent passage and cannot regulate the design, construction, manning, or equipment of foreign vessels unless they conform to 'generally accepted international rules or standards' (GAIRS), i.e., those accepted within the International Maritime Organization (IMO)(art. 21 (2)).²⁸ Nevertheless, coastal

states have legislative power regarding innocent passage that is useful for MSP. They can adopt laws and regulations in respect of all or any of the following topics: safety of navigation and regulation of maritime traffic; protection of navigational aids and facilities, as well as other facilities and installations (e.g., wind farms); the protection of cables and pipelines; the conservation of living resources; and the preservation of the environment of the coastal state. These laws and regulations must conform to the provisions of UNCLOS and other rules of international law (art. 21(1)). Coastal states that ratified IMO conventions can request foreign ships in innocent passage to comply with those conventions, even if the flag state is not a party to that convention.²⁹ The coastal state may require foreign ships in innocent passage to use sea lanes and traffic separation schemes it designated or prescribed as necessary for the safety of navigation. The coastal state has a duty to indicate clearly the sea lanes and traffic separation schemes and make them public on charts. In particular, tankers, nuclear-powered ships, and ships carrying nuclear or other inherently dangerous or noxious substances or materials, may be required to confine their passage to such sea lanes. In designating sea lanes and traffic separation schemes coastal states shall take into account: "(a) the recommendations of the competent international organization; (b) any channels customarily used for international navigation; (c) the special characteristics of particular ships and channels; and (d) the density of traffic" (art. 22). The organization referred to is the IMO. An explicit cross reference to UNCLOS as source of obligations for states party to the International Convention for the Safety of Life at Sea (SOLAS 1974, as amended) can be found in the 1995 amendments to Chapter V/8(j) of SOLAS, indicating respectively that all adopted ships' routing systems and ship reporting systems "shall be consistent with international law, including the relevant provisions of the 1982 United Nations Convention on the Law of the Sea".³⁰ The IMO approval of ship routing measures is a long established practice, principally to contribute to safety of life, safety and efficiency of navigation but since the mid-1990s also to protect the marine environment and to make ship routing systems compulsory.³¹ In this respect SOLAS is "greened" by UNCLOS since routing measures can also be taken for environmental protection purposes, albeit mostly in combination with safety of navigation arguments. Since 2000, the routing of ships is governed by SOLAS Chapter V/10 and the amended Resolution

(footnote continued)

with different applications: IMO .LEG/MISC.5 of 31 January 2007. Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization. London, pp. 3–5.

²⁹ IMO. LEG/MISC.5 of 31 January 2007. Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization. London, p. 13.

³⁰ SOLAS Chapter V, Regulation 8 (V/8) became V/10 by amendment in 2000.

³¹ IMO Resolution A.572(14) "General Provisions on Ships' Routing" was adopted by the IMO Assembly in 1985. On 16 May 1995 the General Provisions were amended by Resolution MSC.46(65), inserting i.a. paragraphs 3.6 and 3.7, which deal with routing systems for the protection of environmentally sensitive areas. Paragraph 3.6 establishes the criteria to be taken into account when considering the adoption of a routing system for the protection of the marine environment. Paragraph 3.7 sets limits for the adoption of routing systems. In accordance with this paragraph IMO should not adopt a system that would impose unnecessary constraints on shipping, or establish an area to be avoided that would impede the passage of ships through an international strait. Resolution MSC.46(65) also amended Chapter V/8(a) SOLAS 1974/78. According to paragraph (a), ships' routing systems should also be established bearing in mind the need to protect the marine environment. See also amendments to the "General Provisions on Ships' Routing" by Res. MSC. 65/25/Add. 1 on 6 June 1995. In November 1997, the IMO Assembly adopted resolution A.858(20) by which it delegated to MSC the function of adopting traffic separation schemes, and routing measures other than traffic separation schemes, including the designation and substitution of archipelagic sea lanes.

²⁴ It was agreed at the 2003 Mediterranean Fisheries Conference (Venice) that better marine governance requires effective jurisdiction of coastal states over their waters, while calling for a co-ordinated approach in the submission of claims. In 2002, the Commission in a Communication proposed a Community Action Plan for the conservation and sustainable exploitation of fisheries resources in the Mediterranean Sea under the Common Fisheries Policy. One of the measures proposed is a concerted approach in declaring fisheries protection zones (FPZs). The establishment of FPZs, of up to 200 miles from baselines, is regarded by the Commission as an important contribution to improving fisheries management. COM (2002) 535 final of 9 October 2002.

²⁵ Scholars have since long argued that sovereignty in the TS is equal to sovereignty on land.

²⁶ Passage is innocent so long as it is not prejudicial to the peace, good order, or security of the coastal state. The meaning of innocent passage is further elaborated in article 19 UNCLOS.

²⁷ Passage has to be continuous and expeditious, except in cases of *force majeure* or distress (art. 18).

²⁸ Although in art. 21(2) "generally accepted rules or standards" mentioned, while in art. 211 and art. 226 these are called "generally accepted rules and standards", the difference seems irrelevant: Vukas B. Generally Accepted International Rules and Standards. In Soons AHA, editor. Implementation of the Law of the Sea Convention Through International Institutions. Honolulu: Law of the Sea Institute, 1990, pp. 405–421. See on GAIRS and applicable international rules and standards (AIRS) as rules of reference: International Law Association. Committee on Coastal State Jurisdiction over Marine Pollution, Final Report. In: Report of the 69th Conference, London, 2000, pp. 443–484; see on GAIRS the First Report of this ILA Committee (1996) in Franckx E, editor. Vessel-source Pollution and Coastal State Jurisdiction. The Work of the ILA Committee on Coastal State Jurisdiction Relating to Marine Pollution (1991–2000). The Hague: Kluwer Law International, 2001, pp. 11–31. There are various forms of references to rules and standards developed by the IMO that establish an obligation on UNCLOS parties

A.572(14) on “General Provisions on Ship’s Routeing”. Article 22(3) UNCLOS does not require that routeing measures designated by coastal states in the TS according to the General Provisions need to be approved by the IMO, nor does SOLAS V/10³² and the General Provisions.³³ It is however recommended to do so for two reasons. Approval by the IMO implies that all flag states are informed of the new routeing measures and the new measures will be published in the Ships Routeing Edition of the IMO.³⁴ Secondly, routeing measures for ships adopted by the IMO are without any doubt mandatory and can be enforced.³⁵

4.1.3. Straits used for international navigation and archipelagic sea lanes

The regime of straits used for international navigation does not affect the sovereignty or jurisdiction of bordering states regarding their waters, seabed and subsoil (art. 34) and all ships enjoy the right of transit passage that may not be impeded, except if there is an alternative route through the high seas or through an EEZ with similar navigational and hydrographical characteristics (art. 38). Concerning sea lanes and traffic separation schemes in straits used for international navigation between one part of the high seas or an EEZ and another part of the high seas or an EEZ (art. 37) in which there is a right of transit passage,³⁶ the wording of article 41 (4) is slightly different from article 22 (3). Article 41 (4) obliges states (“shall refer”) to submit proposals for designating or substituting sea lanes or prescribing or substituting traffic separation schemes to the IMO with a view to their adoption. The IMO can adopt only such sea lanes and traffic separation schemes as may be agreed with the states bordering the strait, after which the states may designate, prescribe or substitute them. States bordering straits are not allowed to unilaterally prescribe sea lanes and traffic separation schemes, but even if prescribed jointly with the other states bordering that strait, there is still a legal obligation for adoption by the IMO. States bordering straits cannot hamper transit passage and shall give appropriate publicity to any danger to navigation they are aware of (art. 44). The same procedure applies to archipelagic sea lanes and traffic separation schemes in archipelagic waters (art. 53 (9)).³⁷ In

contrast, for straits used for international navigation between a part of the high seas or an EEZ and the TS of a foreign state in which the right of innocent passage applies (art. 45(1)(b)), the same procedure regarding sea lanes and traffic separation schemes as in article 22(3) on the TS is applicable.

4.1.4. Continental shelf

Beyond the TS, each coastal state is entitled to a CS, which is the natural prolongation of the land territory.³⁸ Coastal states can exercise sovereign rights over their CS for the purpose of exploring and exploiting the mineral and other non-living resources of the sea-bed and subsoil; this also includes living organisms belonging to sedentary species.³⁹ No one may undertake these activities without express consent of the coastal state (art. 77). The coastal state has the exclusive right to authorize and regulate drilling on the CS (art. 81) and the right to exploit the subsoil by means of tunnelling (art. 85). Although all states are entitled to lay submarine cables and pipelines on the CS, the coastal state can establish conditions for the laying of these cables and pipelines entering its territory or TS or used in connection with exploitation of the CS, operations of artificial islands, installations, and structures under its jurisdiction. In other cases the delineation of the course for the laying of cables and pipelines needs the consent of the coastal state. The coastal state may not impede the laying or maintenance of such cables or pipelines. Nevertheless the coastal state can take reasonable measures for the exploitation of its CS and to prevent, reduce and control pollution from pipelines (art. 79).

4.1.5. Exclusive economic zone

UNCLOS introduced the EEZ extending no further than 200 nautical miles from the baselines (art. 57). In contrast to the CS, an EEZ must be explicitly proclaimed or installed by the coastal state and includes, besides the seabed and its subsoil, the waters superadjacent to the seabed [27–29]. An EEZ changes the status of the water above the CS that was previously considered as high seas,⁴⁰ but also expands the sovereign rights of the coastal state. In the EEZ a coastal state has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil. These sovereign rights apply to other activities for economic exploitation and exploration, such as the production of energy from water, currents and winds. By using the words “such as” there is no limitation to other economic exploitation activities: for example carbon capture and storage (CCS) in sub-seabed geological formations. However, dumping of waste and CCS is regulated through

³² SOLAS V/10. 4 is rather ambiguous: “Ships’ routeing systems should be submitted for approval to the Organization for adoption. However, a Government or Governments implementing ships’ routeing systems not intended to be submitted to the Organization for adoption or which have not been adopted by the Organization are encouraged to take into account, wherever possible, the guidelines and criteria developed by the Organization”.

³³ The General Provisions emphasize in § 3.14 that: “Governments establishing routeing systems, no part of which lie beyond their territorial seas or in straits used for international navigation, are requested to design them in accordance with the IMO guidelines and criteria for such systems and submit them to the IMO for adoption”, while §§ 3.15 and 3.16 apply to cases where “for whatever reason” a government decides not to submit to IMO a routeing system. In such cases governments should, in promulgating the routeing system to mariners, ensure that there are clear indications on charts and in nautical publications as to what rules apply

³⁴ IMO. Ships Routeing—8th edition. London, 2003 (Sales No. IB927E).

³⁵ SOLAS V/10.1 “... Ships’ routeing systems are recommended for use, and may be made mandatory for, all ships, certain categories of ships or ships carrying certain cargoes, when adopted and implemented in accordance with the guidelines and criteria developed by the Organization”.

³⁶ Transit passage means the freedom of navigation and overflight solely for the purpose of continuous and expeditious transit of the strait. However, the requirement of continuous and expeditious transit does not preclude passage through the strait for the purpose of entering, leaving or returning from a state bordering the strait, subject to the conditions of entry to that state (art. 38).

³⁷ Art. 53(9): “In designating or substituting sea lanes or prescribing or substituting traffic separation schemes, an Archipelagic State shall refer proposals to the competent international organization with a view to their adoption. The organization may adopt only such sea lanes and traffic separation schemes as may be agreed with the Archipelagic State, after which the Archipelagic State may designate, prescribe or substitute them”.

³⁸ This right does not depend on occupation or any express proclamation: coastal states have a CS or not (art. 77(3)). The continental shelf comprises the seabed and the subsoil of the submarine areas up to the outer edge of the continental margin or to a distance of 200 nautical miles from the baseline, where the outer edge of the continental margin does not extend that far. In case the margin extends beyond this distance and depending on certain conditions, the outer limit can be 350 nautical miles measured from the baseline. In this case the coastal state has to submit information on the outer limits to the Commission on the Limits of the CS. This Commission shall make recommendations to the coastal state on this outer limit, on the basis of which the coastal state can finalize the outer limit (art. 76).

³⁹ These are organisms at the harvestable stage that are either immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil (art. 77(4)).

⁴⁰ “The exclusive economic zone is subject to a ‘specific régime’. The régime is specific in the sense that the legal régime of the exclusive economic zone is different from both the territorial sea and the high seas. It is a zone which partakes of some of the characteristics of both régimes but belongs to neither”: United Nations, The Law of the Sea. National Legislation on the Exclusive Economic Zone, the Economic Zone and the Exclusive Fishery Zone, U.N., New York, 1986, iv.

dumping conventions prohibiting some forms of dumping.⁴¹ A coastal state also has jurisdiction with regard to the establishment and use of artificial islands, installations and structures, to scientific research, to the protection and preservation of the marine environment, with due regard to the rights and duties of other states (art. 56). The latter rights refer to the freedoms of navigation, over-flight, and the laying of submarine cables and pipelines. UNCLOS reaffirms the exclusive MSP rights of coastal states regarding the regulation of the construction, operation and use of artificial islands, installations and structures for the economic exploration and exploitation of the EEZ, including energy production, and exclusive jurisdiction over those islands, installations and structures (art. 60(1)(2)). Article 60 further addresses the implications of these activities for the freedom and safety of navigation and regulates the duties of the coastal state in this regard. Due notice must be given of the construction of offshore facilities and permanent means for giving warning of their presence must be maintained (art. 60(3)). "The coastal state may, where necessary, establish reasonable safety zones around such artificial islands, installations and structures in which it may take appropriate measures to ensure the safety both of navigation and of the artificial islands, installations and structures" (art. 60(4)). The breadth of these safety zones shall be determined by the coastal state taking into account 'applicable international standards'. In principle this breadth shall not exceed 500 m, except as authorized by 'generally accepted international standards' or as recommended by the IMO (art. 60(5)). According to the Legal Committee of IMO, any such safety zone exceeding 500 metres must be submitted to IMO for adoption.⁴² Ships must respect those safety zones and comply with 'generally accepted international standards' regarding navigation in the vicinity of artificial islands, offshore installations and structures, as well as safety zones (art. 60(6)). However, offshore installations and safety zones around them may not be established where interference may be caused to the use of recognized sea lanes essential to international navigation (art. 60(7)). In accordance with article 80 of the LOSC, the provisions of article 60 apply *mutatis mutandis* to artificial islands, installation and structures on the CS. Article 211(1) of UNCLOS prescribes that states, acting through the competent international organization (IMO) or a general diplomatic conference, shall wherever appropriate promote the adoption of routeing systems designed to minimize the threat of accidents which might cause pollution of the marine environment, including the coastline and related interests of coastal states. The General Provisions on Ships' Routeing (Resolution A.572(14)) contain provisions for the adoption of routeing measures beyond the TS. A government proposing a new routeing system or an amendment to an adopted routeing system "any part of which lies beyond its territorial sea should consult IMO so that such system may be adopted or amended by IMO for international use" (paragraph 3.8). This provision furthermore recommends that the interested government should provide all relevant information including, as appropriate, the following additional information: (a) the reasons for excluding certain ships of classes of ship from using a routeing system or any part thereof; and (b) any alternative routeing measures, if necessary, for ships or certain classes of ship which may be excluded from using a

routeing system or parts thereof. The General Provisions further establish that such a system, when adopted "shall not be amended or suspended before consultation with and agreement by IMO, unless local conditions and the urgency of the case require that earlier action be taken." In case rules and standards referred to in article 211(1) UNCLOS are inadequate to meet special circumstances and coastal states have reasonable grounds that an area in their EEZ needs "special mandatory measures" to prevent pollution, they can start the procedure of article 211(6) UNCLOS. The area need not only be clearly defined, the adoption of special measures must be required for recognized technical reasons in relation to the oceanographic and ecological conditions, as well as the utilization or the protection of the resources and the particular character of the traffic of the area concerned. To start the adoption procedure, the coastal state should conduct appropriate consultations through the IMO with other states concerned, by submitting to the IMO scientific and technical evidence and information on necessary reception facilities in support of special mandatory measures. Within 12 months of receiving the communication, the IMO shall determine whether the conditions in the proposed area justify the adoption of special mandatory measures. Following a decision by IMO, the coastal state may adopt laws and regulations implementing such international rules and standards or navigational practices as are made applicable for special areas. These laws shall not become applicable to foreign vessels until 15 months after the submission of the communication to the IMO. The coastal state has the duty to publish the limits of the particular defined area where the special mandatory measures are to be enforced. In case the coastal state intends to adopt additional laws and regulations for that same area, the procedure for these new measures will start again and the same time frame is applied. These laws and regulations cannot require foreign vessels to observe design, construction, manning or equipment standards other than generally accepted international rules and standards.

4.2. Ships' routeing measures and MSP

4.2.1. Routeing measures

There are 10 ships' routeing measures that are important for MSP: these are traffic separation schemes (TSS),⁴³ traffic lanes, separation zones, roundabouts, inshore traffic zones, recommended routes, deep-water routes, precautionary areas and areas to be avoided.⁴⁴ In addition to improving the safety of navigation,

⁴³ The legal basis for traffic separation schemes is to be found in Rule 10 of the Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREG 1972).

⁴⁴ A 'traffic separation' scheme is a routeing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes; 'traffic lanes' are areas within defined limits in which one-way traffic is established. Natural obstacles, including those forming separation zones, may constitute a boundary; a 'separation zone or line' is a zone or line separating traffic lanes in which ships are proceeding in opposite or nearly opposite directions; or separating a traffic lane from the adjacent sea area; or separating traffic lanes designated for particular classes of ship proceeding in the same direction; a 'roundabout' is a separation point or circular separation zone and a circular traffic lane within defined limits; an 'inshore traffic zone' is a designated area between the landward boundary of a traffic separation scheme and the adjacent coast; a 'recommended route' is a route of undefined width, for the convenience of ships in transit, which is often marked by centreline buoys; a 'deep-water route' is a route within defined limits which has been accurately surveyed for clearance of sea bottom and submerged articles; a 'precautionary area' is an area within defined limits where ships must navigate with particular caution and within which the direction of flow of traffic may be recommended; an 'area to be avoided' is an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships, or by certain classes of ships. In 2001 'no anchoring areas' were added to the General Provisions (Resolution A.572(14), as amended). A 'no anchoring area' is a

⁴¹ At universal level dumping is regulated by the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention). The Protocol entered into force on 24 March 2006. The Parties to the Protocol amended the Protocol to allow storage of carbon dioxide under the seabed from 10 February 2007 on.

⁴² IMO, LEG/MISC.5 of 31 January 2007: Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization, London, p. 25.

'areas to be avoided' are interesting from an environmental perspective. Up to December 2002, 34 'areas to be avoided' were approved by the IMO, of which a majority aims to protect a certain habitat or a sensitive area (e.g., breeding grounds for sea-bird populations, a marine sanctuary, coral reefs) against the risks of pollution due to stranding by certain categories of ships carrying chemicals, oil or other hazardous substances, or to protect oil and gas pipelines against the risk of damage.⁴⁵ Routing measures can also be taken to prevent or reduce collisions between ships and whales (ship strikes). In 2002, the IMO approved a proposal from Canada to change the shipping lanes in the Bay of Fundy to protect the North Atlantic right whale from ship strikes. In March 2006 the United States proposed IMO approval of the reconfiguration of the Boston TSS with the aim to reduce ship strikes to right whales and all baleen whales.⁴⁶

4.2.2. Routing measures and installations

The implications of the establishment of structures and installations in connection with routing systems and TSS is considered in Resolution A.572(14) on general provisions on ships' routing. The Resolution recommends that governments ensure, as far as practicable, that oil rigs, platforms and other similar structures are not established within routing systems adopted by IMO or near their terminations. If the establishment of these installations cannot be avoided, the TSS should be amended temporarily in accordance with guidelines given in the same resolution. In the case of the establishment of permanent installations within a TSS, permanent amendments to the scheme should, if deemed necessary, be submitted to IMO for adoption. IMO Resolution A.671(16) on safety zones and safety of navigation around offshore installations and structures recommends governments to study the pattern of shipping traffic at an early stage in order to assess potential interference with marine traffic passing close to or through resource exploration areas. Coastal states are responsible for the dissemination of information concerning the location of offshore installations or structures and the breadth of safety zones around them. This dissemination should take the form of Notices to Mariners, radio warnings, lights and sound signals, etc. Permanent installations, structures or safety zones should be shown on all appropriate navigational charts. Resolution A.671(16) provides international standards for vessels navigating in the vicinity of offshore installations or structures. An Annex to the Resolution contains specific guidelines for coastal and flag states. The Resolution also calls on coastal states to take action against those responsible for infringement of the regulations on safety zones or, at least, to notify flag states, giving detailed evidence of the infringement by their vessels.

4.2.3. Particularly sensitive areas

Revised Guidelines for the Identification and Designation of Particularly Sensitive Areas (PSSAs) are contained in IMO Resolu-

tion A.927(22)⁴⁷ and A.982(24).⁴⁸ The Guidelines define a PSSA as an area, which needs special protection through action by IMO because of its significance for recognized ecological, socio-economic or scientific reasons and which may be vulnerable to damage by international shipping activities (paragraph 1.2). Identification and designation requires three integral components: the particular attributes of the proposed area, the vulnerability of such an area to damage by international shipping, and the availability of associated protected measures within the competence of IMO to prevent, reduce or eliminate risks from shipping activities (paragraph 1.5). Associated protective measures that may be adopted to protect a PSSA, are the following actions: (a) the designation of Special Areas under MARPOL Annexes I, II or V,⁴⁹ or a SO_x-emission control area under MARPOL VI, or application of special discharge restrictions to vessels operating in a PSSA; (b) adoption of ships' routing and reporting systems near or in the area, including the possibility of declaring part or the whole of a PSSA as an area to be avoided by ships; and (c) development and adoption of other measures aimed at protecting specific sea areas against environmental damage from ships, provided that they have an identified legal basis. Those actions have to be approved or adopted by IMO (paragraph 6.1).⁵⁰ The adoption of routing measures for PSSA should take into account the IMO General Provisions on Ships' Routing (resolution A.572(14)), as amended. Other possible measures are compulsory pilotage schemes or vessel traffic management systems.⁵¹ The Guidelines indicate that a proposed PSSA may include a buffer zone within its boundaries, being an area contiguous to the core area for which specific protection from shipping is sought, that would be justified only once it is demonstrated how it would contribute to the adequate protection of the core area. The criteria relate to PSSAs within and beyond the limits of the TS (paragraph 4.3), so it seems that a PSSA can be identified on the high seas. A recent example can be given of a PSSA in the high seas beyond the TS. The Western European Waters PSSA is a large area within the 200 nautical mile sea limits of Portugal, Spain, France, UK and Ireland in the North Atlantic Ocean, the whole strait of Dover, the Belgian EEZ and the adjacent UK waters, as well as the waters around the Shetland Islands, covering the high seas beyond the TSs of UK and Ireland since UK and Ireland had not yet explicitly declared an EEZ. The Division of the Ocean Affairs and the Law of the Sea of the UN (DOALOS) was of the opinion that the WE PSSA was not contrary to article 211(6) of UNCLOS, since the area lies within the 200 nautical mile limits of the states concerned and the area meets the vulnerability criteria. DOALOS was further of the opinion that although art. 211(6) refers to "a particular, clearly defined area of their respective EEZs" and that this phrase in principle does not include the entire EEZs, there is no maximum restriction on size.⁵² Other states were concerned about the size of the proposed area and the precedence this could set for other large areas seeking PSSA identification.

(footnote continued)

routing measure comprising an area with defined limits where anchoring is hazardous or could result in unacceptable damage to the marine environment. Anchoring in no anchoring zones should be avoided by all ships or certain classes of ships, except in case of immediate danger to the ship or the person on board: SN/Circ. 215 of 19 January 2001.

⁴⁵ IMO, Ships Routing—8th edition, London, 2003 (Sales No. IB927E). Rules 1(d) and 10 of COLREG define, respectively, the competence of IMO to adopt TSS and the main technical regulations to be followed in this regard. These regulations effectively institute restrictions on navigation in order to ensure safety.

⁴⁶ 58th Annual Meeting of the International Whaling Commission. Ship Strikes Working Group. First Progress Report to the Conservation Committee (May 2006). IWC58

⁴⁷ IMO Assembly, Resolution A.927(22) adopted on 29 November 2001. Guidelines for the designation of special areas under MARPOL 73/78 and guidelines for the identification and designation of particularly sensitive sea areas. A 22/Res.927, 15 January 2002.

⁴⁸ Resolution A.982(24) revokes annex 2 of resolution A.927(22). IMO Assembly, Resolution A.982(24) adopted on 1 December 2005. Revised guidelines for the identification and designation of particularly sensitive sea areas. A 24/Res.982, 6 February 2006. PSSA Proposal Review Form approved by MEPC 55/23, 10 October 2006.

⁴⁹ Procedures and criteria for the designation of Special Areas are contained in Annex 1 of Resolution A.927(22).

⁵⁰ For example the Ships' Routing Associated Protective Measures (APMs) for the Galapagos Archipelago PSSA (Res.976(24)) and the Baltic Sea Area PSSA (Res.977(24)).

⁵¹ See for a list of APMs: MEPC 57/7/1, 26 November 2007.

⁵² IMO, LEG 87/17, Annex 7, 2.

Sponsoring states referred to the approved Great Barrier Reef PSSA with a similar size, as setting precedence. Finally the area has been adopted as a PSSA, but the proposed restrictions on shipping (prohibition of carrying heavy grade oil in single hull tankers of more than 600 dwt and from 2008 to be extended to single hull tankers between 600 and 5000 dwt) were not acceptable for other states within the IMO. So far, 12 sea areas have been declared a PSSA by IMO, namely the Great Barrier Reef off Australia (1990), the Sabana-Camagey archipelago off Cuba (1997), Malpelo Island off Columbia, (2002), the sea around the Florida Keys off the United States (2002), the Wadden Sea (Denmark, Germany and The Netherlands—2002), the Marine area of the Paracas National Reserve (Peru—2003), the West European Waters (Belgium, France, Ireland, Portugal, Spain and UK, 2004), the extension of the Great Barrier Reef with Torres Strait region (2005), the Galapagos Archipelago in Ecuador (2005), the Canary Islands (Spain—2005), the Baltic Sea area (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden—2005) and Papahānaumokuākea Marine National Monument (US—2008). Most proposed PSSA were already under some form of particular nature protection. Although this protection is not a necessary requirement for the recognition of a PSSA, consideration will be given to the potential of the area to be listed on the World Heritage List, declared a Biosphere Reserve, or included on a list of areas of international, regional, or national importance, or if the area is already the subject of such international, regional, or national conservation action or agreements (paragraph 6.2).

4.3. Fisheries and MSP

UNCLOS provides an international framework for the conservation and management of marine living resources. In their TS and EEZ coastal states are empowered to establish fishery zones and determine zones in which fisheries activities are prohibited or restricted. Fisheries jurisdiction in the TS is based on the sovereignty of the coastal state. Fishing activities without the approval of the coastal state are “considered to be prejudicial to the peace, good order or security of the coastal state”, with the effect that the foreign fishing vessel loses its right to innocent passage (art. 19). Sailing in the TS without fishing is considered as innocent passage. In the EEZ, the coastal state determines the allowable catch of the living resources and has the duty to maintain and restore the living resources through proper conservation and management measures, taking into consideration a multi-species approach and ensure that the living resources are not endangered by over-exploitation (art. 61). Fisheries in the EEZ by third parties are very much dependent on agreements and arrangements that give those states access to the surplus of the allowable catch. Nationals of third states fishing in the EEZ of the coastal state have to comply with the laws and regulations of the coastal state (licensing of fishermen, fishing vessel and equipment, determination of species that may be caught through quotas or catch per vessel over a period of time, seasonal and area limitations or prohibitions, number of vessels and gear specifications, ... (art. 62). A major problem is enforcement of the coastal states regulations. Although the coastal state is empowered to take enforcement measures (boarding, inspection, arrest and judicial proceedings) (art. 73), in practice enforcement is difficult. The jurisdiction of the coastal state is only limited by the obligation to agree with states fishing stocks straddling in the EEZ and in the area adjacent to or beyond it (high seas) upon measures to ensure conservation of these stocks in the high seas, and to coordinate measures to ensure conservation of these stocks within the EEZs of two or more coastal states (art. 63). There are

several duties for states to cooperate in conserving certain species (highly migratory species and marine mammals) (art. 64, 65). Besides the duty to conserve marine living resources in the TS and EEZ, the same duty applies on the high seas. However on the high seas a coastal state cannot unilaterally regulate fishing activities. To enhance cooperation and enforcement in the conservation and management of straddling fish stocks and highly migratory stocks, states concluded the 1995 agreement for the implementation of the provisions of UNCLOS.⁵³ The Fish Stock Agreement (FSA) introduces, *inter alia*, the precautionary approach in the exploitation, conservation and management of those fish stocks and promotes the establishment of sub-regional and regional fisheries management organizations and arrangements [6]. UNCLOS and FSA are supplemented by the non-binding 1995 FAO Code of Conduct for Responsible Fisheries.⁵⁴ The Code applies to all fisheries within and beyond national jurisdiction. To promote compliance with international conservation and management measures on the high seas a FAO Agreement was concluded in 1993.⁵⁵ The 1995 FSA and 1993 FAO compliance agreement, as well as the FAO Code, are important improvements to UNCLOS in terms of managing fisheries on the high seas. These agreements interpret, amplify and develop the existing provisions of UNCLOS. From a MSP perspective those fisheries agreements do not immediately contribute to MSP since they are dominantly focussing on fish species. Although the Code of Conduct does mention closed areas or zones as a management tool for fisheries (7.6.9 Code of Conduct), the Code and the agreements themselves cannot divert from UNCLOS provisions regarding place-based jurisdiction of states at sea.⁵⁶

4.3.1. Fisheries in the European community

In the late seventies the fishery zones of the member states of the European community (EC) were extended to 200 nautical miles, as requested by the Council of the EC. Fisheries in the TS and EEZ are entirely within the competence of the EC and conservation and exploitation is governed by the Council.⁵⁷ Regulation (EC) No 2371/2002 introducing the European Common Fisheries Policy (CFP)⁵⁸ advocates the application of the precautionary approach, sustainable exploitation and a progressive implementation of an ecosystem-based approach to fisheries management in order to minimise the impact of fisheries on marine eco-systems and to provide sustainable economic and social conditions (art. 2). This regulation aims to balance environmental concerns with the economic and social well-being of the European fisheries community. Regional Advisory Bodies (RACs) advise the European Commission to contribute to these

⁵³ Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks. A/CONF.164/37, 8 September 1995.

⁵⁴ FAO. Code of Conduct for responsible Fisheries. Rome, FAO, 1996, 41 p.

⁵⁵ FAO. Agreement to promote compliance with international conservation and management measures by fishing vessels on the high seas. Rome, FAO, 1995.

⁵⁶ Art. 4 FSA: “Nothing in this Agreement shall prejudice the rights, jurisdiction and duties of States under the Convention. This Agreement shall be interpreted and applied in the context of and in a manner consistent with the Convention.”

⁵⁷ The Council determines on a yearly basis the total allowable catch (TAC) for certain species and sets technical standards for fishing nets (mesh size) and the minimum size or weight of fish landed. Each TAC is divided up among the Member states in the form of quotas. Since 1995 the European Community introduced a new management instrument called “the fishing effort regime”, which establishes a link between captures (fish) and fishing capacity (boats). Management of fishing effort is undertaken by the fishery sector, and is generally guided by the parameters of the fishing gear used and species fished.

⁵⁸ The basis for the Common Fisheries Policy is art. 37 EC Treaty and a Community system for fisheries, based on Council Regulation (EC) No. 2371/2002 of 20 December 2002, O.J. L358/59, 31 December 2002.

objectives and to manage fisheries in certain sea areas (art. 31). Council Decision 2004/585/EC established RAC's under the CFP for five regional seas (Baltic, Mediterranean, North Sea, North-Western waters, South-Western waters) and two types of fisheries (pelagic stocks and high seas/long distance fleet). Except for the Mediterranean Sea, all other RACs have been gradually established.⁵⁹ The exclusive EC competence on fisheries leaves almost no room for member states to unilaterally introduce zones where fishing activities are prohibited or restricted. Council Regulation (EC) No 2371/2002 foresees that the Council shall establish Community measures governing access to waters and resources (art. 4.1), by *inter alia* adopting technical measures such as “zones and/or periods in which fishing activities are prohibited or restricted including for the protection of spawning and nursery areas” (art. 4.2(g)(ii)). Art. 17.2 of the same Council Regulation (EC) authorises member states from 1 January 2003 to 31 December 2012 to restrict fishing to fishing vessels that traditionally fish in the TS (12 nm), from ports on the adjacent coast. However, this right is without prejudice to the arrangements for Community fishing vessels flying the flag of other member states under existing neighbourhood relations and the arrangements contained in Annex I. Annex I fixes for member states the geographical zones (e.g., 3–12, 4–12 or 6–12 nautical miles) within the TS of other member states where fishing activities are pursued (unlimited, unlimited during a certain period) and the species identified (e.g., demersal, all species, herring, lobster, etc., depending on the particular zone). Beyond the TS, fisheries are free for Community vessels taking into account the other technical measures taken by the Council, such as zones in which catches of a certain species (e.g., cod) is temporarily closed. In the “Shetland box” (that is not restricted to coastal waters only), for example, there is access for a limited number of vessels with a length of not less than 26 m, flying the flag of four member states.⁶⁰ Under article 19 of the Council Regulation, member states are allowed to take non-discriminatory measures for the conservation and management of fisheries resources and to minimise the effect of fishing on the conservation of marine ecosystems within their TZ, as far as the Community has not adopted measures addressing conservation and management in the area concerned and the measures are not less stringent than existing Community legislation. In case the measure affects vessels of other member states, the measures can only be adopted after consultation of the Commission, the member states affected and the Regional Advisory Council concerned.

4.4. Duty to protect the marine environment and MSP

All states have the obligation to protect and preserve the marine environment (art. 192). While exercising their sovereign right to exploit their natural resources pursuant to their own environmental policies, they have the duty to protect and preserve the marine environment (art. 193). These two fundamental principles of international law, the duty to protect the (marine)

environment and the right of states to exploit their natural resources, the latter as a corollary right of permanent sovereignty and the right to development of states, balance global interests with national interests. The roots of article 193 go back to Principle 21 of the Stockholm Declaration and the position of developing states. Reference to the ‘environmental policies’ of individual states introduces a ‘double standard’, one stricter environmental standard for developed states, the other less strict for developing states [30]. Furthermore “States have to take all measures to ensure that activities under their jurisdiction and control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention” (art. 194(2)). In UNCLOS a relationship is established between activities and the duty to prevent pollution,⁶¹ while in Principle 21 of the Stockholm Declaration (1972), in principle 2 of the Rio Declaration and in art. 3 of the Convention on Biological Diversity (1992) this duty is not limited to prevention of pollution. It is a more general duty not to cause damage to the environment of other states or areas beyond the limits of national jurisdiction. In its Advisory Opinion the International Court of Justice reaffirms that: “... the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn. The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment”.⁶² States have to ensure that activities taking place under their jurisdiction, *ratione loci* (internal waters, TS, EEZ) or under their control, *ratione materiae* (ships flying their flag) do not cause damage to other states or areas beyond national jurisdiction. In UNCLOS this customary law duty is narrowed down to “damage by pollution”. According to UNCLOS, states shall take all measures to prevent, reduce and control pollution from any source (art. 194 (1)), while UNCLOS further focuses on the duty to adopt laws, regulations and other measures to prevent, reduce and control pollution from land-based sources (art. 207), pollution from sea-bed activities under national jurisdiction (art. 208), pollution from activities in the Area (art. 209), pollution by dumping (article 210), pollution from vessels (art. 211) and pollution from the atmosphere (art. 212). Land-based pollution is regulated at the level of regional seas by regional conventions; dumping, shipping and atmospheric pollution is regulated by conventions at global and regional seas level [31]. In order to assess potential substantial pollution or significant and harmful changes to the marine environment of activities under their jurisdiction or control, states are expected (“shall, as far as practicable”) to make use of environmental impact assessments (EIAs) (art. 206). EIAs are necessary tools in MSP. Important from a MSP perspective is the duty for states to take measures that are necessary to protect and preserve rare and fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other form of marine life (art. 194(5)).

⁵⁹ See Council Decision of 19 July 2004 establishing Regional Advisory Councils under the Common Fisheries Policy. OJ L 256/17 of 3 August 2004. Commission Decision 2004/774/EC of 9 November 2004 making the North Sea RAC operational; Commission Decision 2005/606/EC of 5 August 2005 making the Pelagic stocks RAC operational; Commission Decision 2005/668/EC of 22 September 2005 making the North-Western waters RAC operational; Commission Decision 2006/191/EC of 1 March 2006 making the Baltic Sea RAC operational; Commission Decision 2007/206/EC of 29 March 2007 making the high seas/long distance RAC operational; Commission Decision 2007/222/EC of 4 April 2007 making the South-Western RAC operational: see http://ec.europa.eu/fisheries/legislation/other/governance_en.htm [accessed on 17 June 2007].

⁶⁰ France 52 vessels, UK 62 vessels, Germany 12 vessels and Belgium 2 vessels: Annex II, Council Regulation (EC) No. 2371/2002.

⁶¹ Pollution of the marine environment means “the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use sea water and reduction of amenities” (art 1(4), UNCLOS).

⁶² Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion. I.C.J. Reports, 1996, pp. 241–242, par. 29.

This article is the only article in UNCLOS that refers explicitly to the protection of ecosystems. More concrete obligations in this respect are dealt with in other conventions, such as the Convention of Biological Diversity (1992), the Convention on International Trade in Endangered Species (CITES) (1973), the Ramsar Convention on Wetlands of International Importance (1971),⁶³ the World Heritage Convention (1972), the Convention on the Conservation of Migratory Species of Wild Animals (1979) and various regional conventions [31,32]. While UNCLOS focus dominantly on sectoral exploitation rights in the maritime areas and the relation between sea-users, the general principles on the duty to protect the marine environment, inclusive an ecosystem-based approach for fragile ecosystems, are further supplemented by environmental conventions giving effect to article 197 concerning the duty to co-operate in the protection and preservation of the marine environment on a global and regional basis.

5. MSP and marine ecosystem-based management: some developments in international law

5.1. Marine ecosystem-based management in international law

The first global convention to adopt an ecosystem approach in the management of marine living resource was the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR).⁶⁴ Since 1992 regional conventions for the protection of the marine environment are fostering an ecosystem approach as one of their objectives for co-operation.⁶⁵ The need for an ecosystem-based approach and integrated ocean management to regulate activities at sea received increasing global recognition since 1992. The Rio Declaration accepted at the 1992 United Nations Conference on Environment and Development (UNCED) introduces the ecosystem approach to conserve, protect and restore the health and integrity of the Earth (principle 7) and globalizes the use of public participation in handling environmental issues (principle 10). The Declaration calls upon states to develop effective environmental legislation (principle 11), to apply the precautionary approach (principle 15) and to undertake national EIAs for proposed activities that are likely to have a significant adverse impact on the environment (principle 17). Ten years later, Ministers at the World Summit on Sustainable Development (WSSD in Johannesburg, 2002) adopted the Plan of

Implementation.⁶⁶ In the Plan the Ministers *inter alia* encourage the application by 2010 of the ecosystem approach (§ 30 d); to take action to urgently restore depleted fish stocks, where possible not later than 2015 (§ 31 a); to establish MPAs consistent with international law, including representative networks by 2012; time/area closures for the protection of nursery grounds (§ 32 c) and to achieve by 2010 a significant reduction in the current rate of loss of biological diversity (§ 44). In contrast to the 1992 Declaration, the Plan is not a Ministerial declaration. The Plan is not a legal document and does not create legal obligations for states. It is however an important international policy document. Follow-up and implementation of those important environmental targets need to be done through international conventions to which the Plan refers. Global conventions in this respect are the 1992 Convention on Biological Diversity (CBD) and UNCLOS.

In 2006, the seventh meeting of the United Nations Open-ended Informal Consultative Process on Ocean and the Law of the Sea (UNICPOLOS-7) was dedicated to “ecosystem approaches and oceans”.⁶⁷ The United Nations General Assembly at its sixty-first session (2006) welcomed the Report and adopted Resolution 61/222 on “Oceans and the law of the sea”.⁶⁸ The Assembly recalled “that States should be guided in the application of ecosystem approaches by a number of existing instruments, in particular the Convention [on the Law of the Sea], which sets out the legal framework for all activities in the oceans and seas, and its implementing Agreements, as well as other commitments, such as those contained in the Convention on Biological Diversity and the World Summit on Sustainable Development call for the application of an ecosystem approach by 2010”.⁶⁹ According to UNICPOLOS-7, the implementation of an ecosystem approach can be achieved by a combination of initiatives, focussing on scientific

⁶⁶ United Nations. Report of the World Summit on Sustainable Development. Johannesburg, South Africa, 26 August–4 September 2002. A/Conf.199/20.

⁶⁷ Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its seventh meeting: UNGA, A/61/56 of 17 July 2006. Participants agreed that there is no universal definition of an ecosystem approach, however an ecosystem approach should, *inter alia*: “(a) emphasize conservation of ecosystem structures and their functioning and key processes in order to maintain ecosystem goods and services; (b) be applied within geographically specific areas based on ecological criteria; (c) emphasize the interactions between human activities and the ecosystem and among the components of the ecosystem and among ecosystems; (d) take into account factors originating outside the boundaries of the defined management area that may influence marine ecosystems in the management area; (e) strive to balance diverse societal objectives; (f) be inclusive, with stakeholder and local communities’ participation in planning, implementation and management; (g) be based on best available knowledge, including traditional, indigenous and scientific information and be adaptable to new knowledge and experience; (h) assess risks and apply the precautionary approach; (i) use integrated decision-making processes and management related to multiple activities and sectors; (j) seek to restore degraded marine ecosystems where possible; (k) assess the cumulative impacts of multiple human activities on marine ecosystems; (l) take into account ecological, social, cultural, economic, legal and technical perspectives; (m) seek the appropriate balance between, and integration of, conservation and sustainable use of marine biological diversity; and (n) seek to minimize adverse impacts of human activities on marine ecosystems and biodiversity, in particular rare and fragile marine ecosystems” (paragraph 6).

⁶⁸ UNGA Resolution 61/222 adopted by 157 votes to 1 (Turkey), with 3 abstentions (Colombia, Libyan Arab Jamahiriya and Venezuela) on 20 December 2006: A/61/49 (vol. I), 2007, pp. 97–110.

⁶⁹ The Assembly noted: 1 “that continued environmental degradation in many parts of the world and increasing competing demands require an urgent response and the setting of priorities for management interventions aimed at conserving ecosystem integrity”; 2. “that ecosystem approaches to ocean management should be focused on managing human activities in order to maintain and, where needed, restore ecosystem health to sustain goods and environmental services, provide social and economic benefits for food security, sustain livelihoods in support of international development goals, including those contained in the United Nations Millennium Declaration, and conserve marine biodiversity”: UNGA Resolution 61/222, paragraph 119.

⁶³ The 1971 Convention on Wetlands of International Importance Especially as Waterfowl Habitat require parties to designate at least one wetland for inclusion in the list of wetlands of international importance, for which conservation measures will be taken. Marine areas can be designated if the wetland does not exceed 6 m of depth at low tide.

⁶⁴ Text in International Legal Materials; 1980: 19; 841.

⁶⁵ The first regional conventions in the beginning of the 1970s, such as the Oslo Dumping Convention (1972), the Paris Convention (1974) and the Helsinki Convention (1972), did not advocate an ecosystem-based approach and were mainly sectoral, focussed on the prevention, reduction and control of pollution by dumping and land-based sources. Their successors, the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki, 1992), the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR, 1992) and the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, as amended in 1995 do advocate an ecosystem-based approach. UNEPs regional seas programme as a response to principle 7 of the Stockholm Declaration accepted at the United Nations Conference on the Human Environment (1972), was very successful in promoting regional seas programmes that resulted in regional conventions to protect the marine environment. Most of those regional conventions and protocols concluded between the mid-1970s till the mid-1980s had no ecosystem-based approach as an objective. Nowadays most have an affiliated protocol with an ecosystem-based objective to protect areas and wild fauna and flora or protect special areas and biological diversity.

research, improving regional fisheries management, application of the Rio Principles and advancement of the Plan of Implementation, the use of a broad range of management tools for the conservation and sustainable use of marine biodiversity including integrated area-based management tools based on best available scientific advice and the precautionary approach, cross-boundary integrated management and planning, integrated management across sectors and making use of EIAs and stakeholder participation.⁷⁰ These are all necessary principles and tools for MSP.

5.2. Marine ecosystem-based management and marine spatial planning: the Convention on Biological Diversity

The 1992 Convention on Biological Diversity (CBD) has conservation of biological diversity and the sustainable use⁷¹ of its components as goals (art. 1).⁷² To achieve these goals an ecosystem approach⁷³ is the key to conservation, by establishing a system of protected areas, promoting the protection of ecosystems and to rehabilitate and restore degraded ecosystems (art. 8). The Convention introduces a weak commitment (“as far as possible and

as appropriate”) to introduce environmental impact assessments procedures for proposed activities that might have adverse effects on biological diversity, including public participation (art. 14.1). The provisions of the CBD apply to components of biological diversity in areas under national jurisdiction. The provision also apply to processes and activities carried out under jurisdiction or control of contracting parties, within the area of national jurisdiction or beyond the limits of national jurisdiction, regardless of where their effects occur (art. 4). Parties are required to cooperate directly or through competent international organizations, with respect to areas beyond national jurisdiction (art. 5).

Marine and coastal biological diversity is considered as a priority by the Conference of the Parties (COP). At Jakarta (1995) COP 2 in decision II/10 encourage parties to use integrated marine and coastal area management as the most suitable framework for addressing human impact on marine and coastal biological diversity and for the promotion of conservation and sustainable use of marine and coastal biological diversity (§ 2). Institutional, administrative and legal arrangements should be established for this integrated management, as well as plans and strategies for marine and coastal areas (§ 3). Since then marine and coastal diversity is regularly addressed by COP and SBSTTA⁷⁴ (Jakarta Mandate). COP 4 in Bratislava (1998) adopted Decision IV/5 on conservation and sustainable use of marine and coastal biological diversity, including a programme of work.⁷⁵ Decision IV/5 repeats the basic principles, such as the ecosystem approach and the precautionary approach that should be used as a guide for all activities affecting marine and coastal biological diversity. The programme of work has five thematic programme elements (integrated marine and coastal area management (IMCAM), marine and living coastal resources, marine and coastal protected areas, mariculture and alien species and genotypes) with objectives and time schedules. Concerning IMCAM the objectives are: (a) reviewing existing instruments to IMCAM; (b) promoting the development and implementation of IMCAM at all levels (local, national and regional); and (c) developing guidelines for ecosystem evaluation and assessment (including indicators). COP 5 in Nairobi (2000) decided that relevant cross-cutting decisions such as impact assessments should be incorporated in the marine and coastal biological diversity programmes (Decision V/18).⁷⁶ This means that an environmental impact assessment (EIA) should address loss of marine and coastal biological diversity and the interrelated socio-economic, cultural and human-health aspects. Interested and affected stakeholders should be involved in a participatory process to all stages of the assessment process, including local communities. Furthermore, governments are encouraged to use strategic environmental assessments (SEA) to assess not only the impact of individual projects, but also their global and cumulative effects, incorporating biological diversity considerations at decision and/or environmental planning level (§ 2 (a)). Decision VI/7 contains guidelines for incorporating biodiversity-related issues into all stage of environmental impact assessment and strategic environmental assessment legislation and/or processes, taking into account the ecosystem approach.⁷⁷ In the context of MSP, a SEA is very valuable, since it is a formalized, systematic and comprehensive process of identifying

⁷⁰ “It was suggested that the General Assembly propose that implementation of an ecosystem approach could be achieved through, *inter alia*: (a) Its inclusion in the development of national policies and plans; (b) Encouraging and supporting marine scientific research, in areas within and beyond national jurisdiction, in accordance with international law; (c) Understanding, through increased research, the impacts of changing climate on the health of marine ecosystems, and developing management strategies to maintain and improve the natural resilience of marine ecosystems to climate variations; (d) Understanding, through increased research, the impacts of underwater noise on marine ecosystems and taking into account those impacts; (e) Where appropriate, strengthening regional fisheries management organizations, adapting their mandates and modernizing their operations in accordance with international law; (f) Strengthened and improved coordination and cooperation within, and, in accordance with international law, between and among States, intergovernmental organizations, regional scientific research and advisory organizations and management bodies; (g) Effective and full implementation of the mandate of existing multilateral organizations, including those established under UNCLoS; (h) Application of the Rio Principles and the use of a broad range of management tools for the conservation and sustainable use of marine biodiversity, including sector specific and integrated area-based management tools on a case-by case basis, based on the best available scientific advice and the application of the precautionary approach and consistent with international law; (i) identifying and engaging stakeholders to promote cooperation; (j) sectoral approaches and integrated management and planning on a variety of levels, including across boundaries, in accordance with international law; (k) effective integrated management across sectors; (l) advancement of the Plan of Implementation of the World Summit on Sustainable Development, including, *inter alia*, the elimination of destructive fishing practices, the establishment of marine-protected areas consistent with international law and based on scientific information, including representative networks by 2012 and time/area closures for the protection of nursery grounds and periods, proper coastal land use and watershed planning and the integration of marine and coastal areas management into key sectors; and (m) conducting, in accordance with national legislation and international law, assessments in relation to marine activities likely to have a significant impact on the environment”: Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its seventh meeting: UNGA, A/61/56 of 17 July 2006.

⁷¹ See Decision VII/12 on Sustainable Use and the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity. UNEP/CBD/COP/7/21, pp. 209–226 at <http://www.cbd.int/doc/decisions/COP-07-dec-en.pdf>.

⁷² See for the Convention text and the decisions taken by COP until 2000: Secretariat of the Convention on Biological Diversity, Handbook of the Convention on Biological Diversity (CBD Handbook), London, Earthscan, 2001, p. 690.

⁷³ “Biological diversity means the variability among living organisms from all sources, including *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems” (art. 2). See the principles of an ecosystem approach in Decision V/6: CBD Handbook, pp. 565–571 and in Decision VII/11: “3. ... all principles need to be considered with appropriate weight given to each, in accordance with local conditions, and keeping in mind also that the implementation of the ecosystem approach and all principles need to be considered as voluntary instruments ...”. UNEP/CBD/COP7/21, pp. 186–202 at <http://www.cbd.int/doc/decisions/COP-07-dec-en.pdf>.

⁷⁴ Subsidiary Body on Scientific, Technical and Technological Advice established according article 25 of the CBD.

⁷⁵ Decision IV/5 on Conservation and sustainable use of marine and coastal biological diversity, including a programme of work CBD Handbook, pp. 464–474.

⁷⁶ Decision V/18 on Impact assessment, liability and redress. CBD Handbook, pp. 612–614.

⁷⁷ Decisions VI/7 Identification, monitoring, indicators and assessments. UNEP/CBD/COP6/20, pp. 93–109 at <http://www.cbd.int/doc/decisions/COP-06-dec-en.pdf>.

and evaluating consequences of proposed policies, plans or programmes to ensure that they are fully included and appropriately addressed at the earliest possible stage of decision-making on a par with economic and social considerations. SEA can cover a wider range of activities of a wider area and over a longer time span than EIS. SEA can help to streamline the incorporation of environmental, economic and social concerns into the decision making process that often make project level EIA a more effective process. The EIA under the CBD is further expanded with voluntary guidelines on biodiversity-inclusive impact assessment with the aim to better integrate biodiversity-related considerations into the EIA process.⁷⁸ Furthermore, MSP can enhance the implementation of IMCAM to achieve the 2010 targets for applying an ecosystem approach, either on a regional seas level or at LME project level⁷⁹ and can contribute to significantly reduce the current rate of biodiversity loss at the global, regional, national and sub-national. The latter also called the 2010 biodiversity target.⁸⁰ The ecosystem approach for the marine environment is gradually introduced in international and regional conventions, as well as in national laws of states [33,34].

The implementation of the ecosystem approach is less successful.⁸¹ The Second Global Biodiversity Outlook (2005), providing an assessment of the current status and trends of biodiversity, comes to the conclusion that there is a decline in the trophic level of harvested species, a dramatic increase in the number of fish stocks that are being overexploited, and an increasing fragmentation of aquatic ecosystems, resulting in negative changes of the integrity of marine ecosystem goods and services. Although there is a significant increase in coverage of protected areas, more efforts are needed to increase the protected area coverage in marine ecosystems and to ensure an effective management. SBSTTA concludes that conservation and sustainable use of biodiversity need to become an integral element of planning, policy and practice for all economic and social sectors of society.⁸² MSP, taking into account the precautionary approach⁸³ as embedded in the preamble of the CBD,⁸⁴ can significantly contribute to this goal by *inter alia* the designation of MPAs.⁸⁵ MPAs are one of the essentials tools and

approaches in the conservation and sustainable use of marine and coastal biodiversity,⁸⁶ as well as the biodiversity beyond the limits of national jurisdiction.⁸⁷ The designating and management of MPAs is an important objective for the parties to the CBD (art. 8). This includes a global network of comprehensive, representative and effectively managed national and regional protected areas by 2012 (WSSD), ecological corridors, buffer zones and other related approaches to implement the WWSD Plan of Implementation, as well as the integration of protected areas and their systems into the wider land and seascape by 2015.⁸⁸ The Programme of Work adopted in Decision VII/28 further calls upon, *inter alia*⁸⁹: (a) to establish by 2012 trans-boundary protected areas (TBPA's), to collaborate between parties regarding neighbouring protected areas across national boundaries and in case of MPAs beyond the limits of national jurisdiction, to collaborate through the United Nations Informal Consultative Process on the Law of the Sea (UNICPOLOS); (b) to improve site-based area planning and management, including effective management by 2012, the use of participatory and science-based site planning processes and a long-term management plan with active stakeholder involvement; and (c) to prevent and mitigate the negative impacts of key threats to protected areas, for example by ensuring enforcement of urgent measures that can halt illegal exploitation of the MPA resources, incorporating the polluter pays principle, liability and redress measures in case of damage to MPAs and implementing restoration measures.⁹⁰ Elements of a marine and coastal management framework comprise sustainable management practices and actions to protect biodiversity over the wider marine and coastal environment than the MPAs (e.g., bans on certain destructive fishing methods, site-specific restrictions (e.g., trawling restrictions to protect cables, restricted areas for defence purposes)), MPAs where extractive uses are permitted under certain conditions and representative areas from which extraction is excluded.⁹¹ From this short overview it seems clear that the CBD provides a good legal framework for ecosystem-based management, to which the process of MSP can be an added value.

5.3. MSP in the European union

MPAs in the European Union are mainly based on small ecologically defined areas under the Birds Directive⁹² and the Habitats Directive.⁹³ Member states need to designate Special Protection Areas (SPAs) under the Birds Directive for rare, vulnerable or regularly occurring migratory species and bird migration must be secured. Under the Habitats Directive Special

⁷⁸ Decision VIII/28. UNEP/CBD/COP8/31, pp. 248–268 at <http://www.cbd.int/doc/decisions/COP-08-dec-en.pdf>.

⁷⁹ See Decision VIII/22 on the implementation of IMCAM. UNEP/CBD/COP8/31, pp. 202–203 at <http://www.cbd.int/doc/decisions/COP-08-dec-en.pdf>.

⁸⁰ See Ninth Meeting of SBSTTA (2003). Consideration of the results of the meeting on “2010—The global biodiversity challenge”. UNEP/CBD/SBSTT9/INF/9. See also Countdown 2010 at <http://www.countdown2010.net>.

⁸¹ Expert meeting on the ecosystem approach, Montreal 7–11 July 2003: UNEP/CBD/EM-EA/1/15—3 July 2003

⁸² UNEP/CBD/SBSTTA/11/INF/14.

⁸³ The precautionary approach is considered to play a role to halt losses in biodiversity and encourage recovery, notwithstanding our imperfect knowledge of the marine environment: Decision VII/5 Marine and coastal biological diversity. Appendix 3 Elements of a marine and coastal management framework (§ 2). UNEP/CBD/COP/7/21, 166 at <http://www.cbd.int/doc/decisions/COP-07-dec-en.pdf>.

⁸⁴ Although not explicitly stated as the precautionary approach, the contracting parties also note “that were there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.”

⁸⁵ In their COP-decisions the parties either use “protected areas” or “marine and coastal protected areas”. The latter are “any defined area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings. Areas within the marine environment include permanent shallow marine waters; sea bays; straits; lagoons; estuaries; sub-tidal aquatic beds (kelp beds, sea grass beds, tropical marine meadows); coral reefs; inter-tidal muds; sand or salt flats and marshes; deep-water coral reefs; deep-water vents, and open ocean habitats”. Report of the Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas. UNEP/CBD/SBSTTA/8/INF/7.

⁸⁶ Ad Hoc Technical Group on Protected Areas: “Protected areas and the conservation and sustainable use of biological diversity”. UNEP/CBD/AHTEG-PA/1/2 of 30 May 2003, p. 78. Decision VII/5 Marine and coastal biological diversity. UNEP/CBD/COP7/21, pp. 134–177 (345) at <http://www.cbd.int/doc/decisions/COP-07-dec-en.pdf>.

⁸⁷ Decision VIII/24 Protected areas. UNEP/CBD/COP8/31, pp. 218–227 at <http://www.cbd.int/doc/decisions/COP-08-dec-en.pdf>.

⁸⁸ Decision VII/28 Protected areas and the Annex concerning a Programme of work on protected areas. UNEP/CBD/COP7/21, pp. 344–364 (345)(352) at <http://www.cbd.int/doc/decisions/COP-07-dec-en.pdf>.

⁸⁹ This is a selection of targets made by the author, based relevance for marine spatial planning and potential legal relevance. The programme of work considers more goals, targets and activities.

⁹⁰ Decision VII/5 Marine and coastal biological diversity. Annex I Elaborated programme of work on marine and coastal biological diversity. UNEP/CBD/COP/7/21 at <http://www.cbd.int/doc/decisions/COP-07-dec-en.pdf>.

⁹¹ Decision VII/5 Marine and coastal biological diversity. Appendix 3. UNEP/CBD/COP/7/21, pp. 166–168 at <http://www.cbd.int/doc/decisions/COP-07-dec-en.pdf>.

⁹² Council Directive 79/409/EEC of 2 April 1979 on the Conservation of wild birds, OJ L 103, 24 March 1979, as amended.

⁹³ Council Directive 92/43/EEC of 21 May 1992 on the Conservation of natural habitats and of wild fauna and flora, OJ L 206, 22 July 1992.

Areas of Conservation (SACs) have to be designated in order to support valuable natural habitats for plants or animals. The establishment of SPAs and SACs are measures that are mandatory under Community law and that affect MSP. Taken together they should form a network of protected areas across the EU, known as Natura 2000, for which Member states have to take protective measures. Indeed, MPAs should not be dealt with in isolation but need to be integrated in spatial development strategies for larger sea areas [35]. The Natura 2000 network is a key contribution to the commitment of the 2002 WSSD and the CBD Decision VII/28 to establish by 2012 a representative system of marine and coastal protected areas. According to the European Court of Justice,⁹⁴ the Habitats and the Bird Directives also apply to the EEZ of Member States. The need for an ecosystem-based MSP of sea areas under jurisdiction of coastal states is also recognized by the European Commission in its Green Paper, “Towards a future Maritime Policy for the Union: A European vision for the oceans and seas” (2006).⁹⁵ The EU Green Paper considers an ecosystem-based marine regional spatial planning as a tool to ensure investment decisions at sea and refers to licensing, promoting or placing restrictions on maritime activities. It is recognized that under the current legal circumstances “individual decisions on activities should be taken at a national or local level” but that “a degree of commonality between the systems will be needed to ensure that decisions affecting the same ecosystem or cross-border activities, such as pipeline and shipping routes, are dealt with in a coherent manner.”⁹⁶ Cross-border co-operation should encompass all activities for which co-operation is needed, such as cross-border MPAs, the best environmental and economical suitable sites for sand and gravel exploitation, a renewed fisheries policy to better manage fishery zones and fish stocks, risk assessment of activities a sea that can affect neighbouring countries, etc. However, the main challenge will be to link data on human activities, with ecosystem, social and economic data, and integrate these data in a spatial planning process (see St. Martin in this issue). Without any doubt, this process needs the involvement of all relevant stakeholders and the public at large. MSP can raise awareness concerning the marine environment, its complexity and ecosystem services that are often not well known by the general public. Many stakeholder reactions to the Green Paper⁹⁷ are in favor of regional ecosystem-based MSP and making use of the principles of integrated coastal zone management, as reflected in the EU recommendations on ICZM (2002).⁹⁸

6. Conclusion

There is a clear evolution in support of an ecosystem-based MSP in international law. Although UNCLOS rarely mentions an ecosystem approach, UNCLOS does not exclude MSP and cannot be seen in isolation of other developments in international law [36], such as the outcomes of the 1992 Rio Summit and the 2002 Johannesburg Summit. Although Agenda 21, the 1992 Rio-Declaration and the 2002 Plan of Implementation only have the status of “soft law”, the principles, concepts and approaches

introduced are meanwhile incorporated in global and regional conventions. The CBD is the most important global convention in support of an ecosystem-based MSP in order to protect marine biological diversity under the jurisdiction of coastal states. To improve conservation and sustainable use of the marine and coastal biological diversity, the parties to the CBD advocate the main principles underlying MSP, such as: integration of the whole marine environment under jurisdiction of coastal states within their IMCAM, the application of EIAs for separate activities effecting marine biological diversity and a SEA for the planning of all those activities together, the underlying active stakeholder participation in a science-based planning process, the necessity to establish MPAs and to incorporate them in trans-boundary representative networks or trans-boundary protected areas by 2012. Furthermore, in 2006 the United Nations General Assembly (UNGA) in Resolution 61/222 on “Oceans and the Law of the Sea” recalled that states should be guided by UNCLOS and CBD in the application of ecosystem approaches to be achieved by 2010. According to UNICPOLOS-7, to implement an ecosystem approach a combination of initiatives can be used, *inter alia* focussing on scientific research, improving regional fisheries management, application of the Rio Principles and advancement of the WSSD Plan of Implementation, the use of a broad range of management tools for the conservation and sustainable use of marine biodiversity including integrated area-based management tools based on best available scientific advice and the precautionary approach, cross-boundary integrated management and planning, integrated management across sectors and making use of EIAs and stakeholder participation. These decisions taken by the COP under the CBD and Resolution 61/222 adopted by the UNGA, need to be implemented on national and preferable regional level. UNCLOS provided coastal states with new rights and duties, especially in the exclusive economic zone. Most of those rights and duties are implicitly supportive for MSP. Although coastal states cannot plan unilaterally their marine space under their jurisdiction when MSP affects freedom of navigation in the EEZ, innocent passage in the TS or transit passage in straits used for international navigation, in particular sea lanes actively used by ships under foreign flags or traffic separation schemes already approved by the IMO, there are procedures at hand within the IMO that can restrict these rights due to safety and environmental concerns. More and more states are making use of those procedures, such as routeing measures to protect particularly sensitive areas at sea.

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