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The complex relationships between Marine Protected Areas and Marine Spatial Planning: towards an analytical framework

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Abstract: Systems of marine spatial planning (MSP) are now being introduced in many countries, with the intention of more rational arrangement of maritime uses and interests. It would be expected that marine conservation, especially the designation of marine protected areas (MPAs), would be incorporated into MSP. In practice, however, MSP and MPA designation are often taking place in parallel to each other, with relatively little integration between them, partly because of marine conservation's longer history and established institutional frameworks which cannot be simply subsumed into MSP processes. There are, nonetheless, a series of options available by which the two sets of process could be more closely linked. These options can be conceptualised temporally, by, for example, MSP improving the status of pre-existing MPAs, or spatially, by, for example, facilitating the creation of multiple-use MPAs. These difficulties and possibilities are illustrated through two national European experiences.

Keywords: Marine protected area, Marine spatial planning, Ocean management, Ocean policy, Zoning, Multiple-use, Conservation, England, Germany

1. Introduction

Marine spatial planning (MSP) is becoming increasingly recognised as a means of managing the marine environment and maritime activities more coherently than in the past (Ehler et al., 2019). It introduces a more explicit spatial dimension to the regulation and management of activities, with the aim of allocating space more clearly to sea uses, so that they do not conflict with each other, make the best use of resources and minimise their environmental impact (Douvere, 2008; Gilliland et al., 2008). Marine conservation is generally reckoned to be one of the interests that should be included in MSP exercises, as economic activities should not compromise valuable habitats and species. Designating marine protected areas (MPAs) through systematic conservation planning (Margules and Pressey, 2000; Sarkar et al., 2006) is a strong spatial mechanism for protection. This corresponds closely to the area-based rationale of MSP, and it is reasonable to assume that in a marine spatial plan, MPAs would sit alongside spatial allocations for economic uses, such as mineral extraction, shipping, fishing and energy supply (Agardy et al., 2011). Moreover, it would be expected that MPAs would enjoy protection from these other uses, by creating no-take zones with regard to fishing, for example.

A logical and scientific approach, therefore, would be to integrate the planning of MPAs and other uses within a MSP process, so that their various demands can be considered alongside each other and an optimum, balanced arrangement of uses can be achieved, with attention given to the most important ecological sites through MPAs designation. In this model, MPAs

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are both incorporated into and prioritised through an all-encompassing system of MSP (Craig and Hughes, 2014; Harris et al., 2019). However, it would appear that other logics are at work, notably when a real world-MSP is dominated by a neoliberal blue growth (Jones et al., 2016); this calls into question the extent to which the above ideal is being seen in practice and, possibly, its desirability. In addition, marine conservation efforts and MPAs have longer-standing conceptual roots and institutional processes of their own that may not be easily subsumed into MSP processes and that may suggest alternative relationships with MSP.

It may even be that MSP and MPA designation are diverging processes. Nonetheless, it appears that they also have a potential for co-evolution (Jones, 2014; Jones et al., 2016). For example, Vaughan and Agardy (2020) set out how MSP can assist MPAs, as well as vice-versa: *“Recognising that MPAs might be best treated as one part of a unified conservation strategy means that MSP needs to be harnessed to create better, more durable MPAs. Conversely, incorporating MPA planning into MSP can reduce conflict for marine space through optimization of that space.”* Jones (2014) also argues *“Whilst it is widely agreed that an important objective of MPAs is to contribute to MSP, it is important to bear in mind that there are many different views on what MSP means and how MPAs should be designed to contribute to it.”* In addition, Jones et al. (2016) have looked at other aspects of the relationships between MSP and MPAs, such as potential convergences in terms of governance, conflicts, integration, participation, justice and uncertainty.

This paper explores further the ways in which MPAs and MSP have developed alongside and in relation to each other, with reference, firstly, to their scientific and policy-based backgrounds (part 2), leading to a discussion of their interacting dynamics (part 3). Building upon previous studies, this contribution aims to reconsider the perspective on these relationships by developing a framework of their spatial and temporal relations. Secondly, this paper applies this analytical framework to two national cases of MSP and MPA processes, throwing further light on the uneasy relationship between them (part 4). Finally, the implications of the complex relationships between these processes are discussed (part 5).

2. A “chicken-or-egg” problem

The need to manage and protect the seas has recently led to various approaches supported by tools and policies that are not necessarily in keeping with each other and that raise the question of which should come first.

2.1. Marine Spatial Planning

Rooted in initiatives dating from the late 1970s, MSP is a relatively new process that has been widely disseminated over the two last decades to the point that by 2017 approximately 40 countries were carrying out MSP activities that produced over 60 plans completed at various scales (Ehler, 2017); these figures have since considerably increased. One of the most significant developments was the adoption of a European Union Directive requiring coastal Member States to implement MSP (EPC, 2014).

However, MSP is best understood as a ‘soft process’ which is open to various interpretations and means of implementation (Collie et al., 2013; Domínguez-Tejo et al., 2016 ; Ehler et al., 2019; Jones et al., 2016; Trouillet, 2020). Hence only a general definition can encompass all understandings, focusing on a few key principles that constitute the core of MSP. The most common definition of MSP is: *“a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic,*

and social objectives that usually have been specified through a political process¹.” (Ehler and Douvere, 2009). Originally conceived as a means of supporting marine conservation (Agardy, 2010), MSP has been more recently oriented towards multi-use planning of marine space (Degnbol and Wilson, 2008; Douvere, 2008; Douvere and Ehler, 2009a), or on the need to support “blue growth” (Frazão Santos et al., 2014; Qiu and Jones, 2013; Jones et al., 2016). However, its initial environmental imperative still characterises MSP and distinguishes it partly from terrestrial planning (Kidd and Ellis, 2012; Kidd et al., 2019; Smith et al., 2011). Consequently, MSP is often presented as an essential means and tool to achieve “ecosystem-based sea use management”, with reference to wider notion of ecosystem-based management (Ansong et al., 2017; Domínguez-Tejo et al., 2016; Long et al., 2015; O’Higgins et al., 2019). Nonetheless, in this regard, it should be recognised that an ecosystem-based approach can be understood either as a fundamental goal (hard sustainability) or as one element amongst others (soft sustainability) (Frazão Santos et al., 2014; Qiu and Jones, 2013; Jones, 2014; Jones et al., 2016).

2.2. Marine Protected Areas

The concept of MPAs similarly has universal ambitions and can be considered to belong to the same family of general measures as MSP. The Convention on Biological Diversity (1992) promoted the concept of “protected area” at the international scale, defined as “*a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives*”². This understanding was complemented by Dudley (2008): “*A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values*”. An important stage in the creation of MPAs was the World Summit on Sustainable Development (2002), at which a quantified objective was set, that 10% of the sea surface should be designated as MPAs by 2010. This deadline was extended to 2020 by the 2010 Nagoya Conference (target n°11 of the Aichi Biodiversity Targets). MPAs are nowadays considered to be a mainstream tool for achieving marine conservation (Agardy et al., 2003) and quantitative facts are presented as testimony to their success: for example, 16,924 MPAs had been established around the world by 2020, covering 26.9 million km², corresponding to approximately 7.4% of the global ocean and just over 17% of areas within national jurisdiction (UNEP-WCMC and IUCN, 2020).

¹ Characteristics of effective marine spatial planning include: ecosystem-based, integrated, area-based, adaptive, strategic and anticipatory and participatory (ibid.).

² <https://www.cbd.int/doc/legal/cbd-en.pdf>

	<div><div>Strict protection</div><div>Strict nature reserve Wilderness area</div><div>Ecosystem conservation and protection (i.e., National park)</div><div>Conservation of natural features (i.e., Natural monument)</div><div>Conservation through active management (i.e., Habitat/species management area)</div><div>Landscape/seascape conservation and recreation (i.e., Protected landscape/seascape)</div><div>Sustainable use of natural resources (i.e., Managed resource protected area)</div></div>						
Activities	Ia	Ib	II	III	IV	V	VI
Research : non-extractive	Y*	Y	Y	Y	Y	Y	Y
Non-extractive traditional use	Y*	Y	Y	Y	Y	Y	Y
Restoration / enhancement for conservation (e. g. invasive species control, coral reintroduction)	Y*	*	Y	Y	Y	Y	Y
Traditional fishing / collection in accordance with cultural tradition and use	N	Y*	Y	Y	Y	Y	Y
Non-extractive recreation (e. g. diving)	N	*	Y	Y	Y	Y	Y
Large scale low intensity tourism	N	N	Y	Y	Y	Y	Y
Shipping (except as may be unavoidable under international maritime law)	N	N	Y*	Y*	Y	Y	Y
Problem with wildlife management (e. g. shark control programmes)	N	N	Y*	Y*	Y*	Y	Y
Research : extractive	N*	N*	N*	N*	Y	Y	Y
Renewable energy generation	N	N	N	N	Y	Y	Y
Restoration / enhancement for other reasons (e. g. beach replenishment, fish aggregation, artificial reefs)	N	N	N*	N*	Y	Y	Y
Fishing / collection : recreational	N	N	N	N	*	Y	Y
Fishing / collection : long term and sustainable local fishing practices)	N	N	N	N	*	Y	Y
Aquaculture	N	N	N	N	*	Y	Y
Works (e. g. harbours, ports, dredging)	N	N	N	N	*	Y	Y
Untreated waste discharge	N	N	N	N	N	Y	Y
Mining (seafloor as well as sub-seafloor)	N	N	N	N	N	Y*	Y*
Habitations	N	N	N*	N*	N*	Y	N*

Key

No	N
Generally no, unless special circumstances only	N*
No	Y
No, because no alternative exists, but special approval is essential	Y*
* Variable : depends on whether this activity can be managed in such a way that it is compatible with the MPA's objectives	*

Source: Dudley 2008; Day et al. 2012

Table 1: Matrix of maritime activities that may be appropriate for each IUCN category

In 1994, the International Union for Conservation of Nature (IUCN) defined six categories of protected areas with a wide range of objectives from strict protection to the sustainable use of natural resources (Dudley, 2008) (Table 1). According to an evaluation of the compatibility of maritime activities with each category of MPAs (Day et al., 2012) (Table 1), between two and five of the categories might be considered as “Multiple-use MPAs”. It is necessary to distinguish these categories from the names given to MPAs (national park, sanctuary, etc.) (Dudley, 2008). Practically speaking, and without a clear definition, it would seem that a Multiple-use MPA should be considered as a “large-scale MPA” where activities are allowed with some restrictions with regard to access and certain uses in all or part of the area (possibly with zoning, including nested no-take zones) (Garcia, 2013; Gascuel, 2011; Kelleher, 1999). This would be close to the 6th IUCN category, or possibly the 5th, though this is more difficult to apply in the marine context at present (Day et al., 2012). Also, one should keep in mind that some countries (France for instance; see MEDDTL, 2012), may have developed further the IUCN categories by promoting MPAs that are focused on sustainable activities, scientific or educational purposes, etc. Moreover, account should be taken of the different situations that may complicate the role of MPAs: (i) the presence of several IUCN categories within a single MPA, (ii) the combination of terrestrial and marine protected areas, (iii) the nesting of (marine) protected areas, (iv) the potential for vertical zoning of MPAs (Day et al., 2012).

2.3. Can MSP and MPAs produce the same results?

MSP and MPAs are not necessarily aiming for the same results. But potentially, there is co-evolution (Jones et al., 2016) or convergence between the two systems (Vaughan and Agardy, 2020), that may produce the same results. In a first scenario, if well-defined, a large Multiple-use MPA may be able to play practically the same role as an area covered by an “ecosystem-based marine spatial plan”. MPAs could thus be viewed as a substitute for MSP or indeed as the basis for maritime planning and strategy. Conversely, in a second scenario, a network of MPAs may arise from a MSP process, especially through the application of zoning. In this situation, MPAs could be perceived as simple areas for marine conservation that are zoned within a marine plan, just as other ocean uses might be³. Thus MSP would constitute a framework for the creation of a MPA network and the role of MPAs may be reduced to reserves or “no-take zones” in the wider marine area. Hence these tools may follow different paths that raise a “chicken-or-egg” problem. Alternatively, MSP and MPAs may appear to be different sides of the same coin. Accordingly, one may ask: which is part of which?

Along with Gubbay (2004) and Blæsbjerg et al. (2009), it is generally considered that MSP has a broader remit and:

- provides “an overall framework for managing activities, whereas MPAs are one of the management tools (...)” (Gubbay, 2004);
- is “likely to include an element of zoning, with MPAs incorporated into such schemes as areas where the conservation of biodiversity has priority. Some of these may be “no-take zones”, whereas others may allow a variety of extractive activities to take place, but only under certain conditions.” (Blæsbjerg et al., 2009).

Thus MSP forms a framework in which MPAs should be developed, both from a strategic point of view (planning as a policy tool) and from a spatial point of view (planning as a technical tool). This may be summarised as follows: “Multiple use areas with Sustainable Development objectives are probably more correctly described as areas subject to Marine Spatial Planning whereas multiple use areas with biodiversity conservation objectives are probably more correctly described as MPAs” (Gubbay, 2005). Despite these points, there may be no simple answer to the “chicken-or-egg” question for two main reasons. This is firstly because MPAs are diverse and MSP is a soft and flexible process which does not systematically produce zoning, depending on the underlying approach to planning. Secondly, this is because the answer involves the political issue of priority between marine conservation and economic growth (Jones et al., 2016; Kidd and Ellis, 2012). The answer is even less obvious given that, according to Caveen et al. (2013) discussing MPAs, the assumptions and ideological postures are often hidden behind “scientific” arguments. This seems to be particularly relevant when, in the EU for instance, Integrated Maritime Policy (IMP) encompasses several policies with specific legal obligations (Natura 2000 network, Marine Strategy, Marine Spatial Planning, Blue Growth, Common Fisheries Policy, Renewable energy...) and has also to play with different priorities and national interests.

Finally, looking beyond the “chicken-or-egg” problem to consider the complex relationship between MSP and MPAs systems is crucial. Indeed, the combined or separate use of these two processes is a pressing question in everyday practice. For instance, Trouillet (2020) showed that in hard sustainability MSP systems, MSP tends to be envisaged as a ‘zoom-out’ tool to take into account pressures outside an existing MPAs network, while in soft sustainability MSP systems, MPAs are rather considered as a single-sector use at the same level than other single-sector uses. So that in the first case, the two processes of MPAs and MSP are

³ For instance, the European Union Directive on MSP considers “nature and species conservation sites and protected areas” as “possible activities and uses and interests” (Article 8).

used jointly, whereas in the second case they are by essence envisaged separately. This also points to the question of effectiveness of the two systems. Again, this could be seen as being achieved jointly or separately. In some cases, MSP may provide leverage to make conservation more effective in “paper parks”. In other cases, MSP may result in a weak document or a document that is not applied or is poorly applied (Stelzenmüller et al., 2021; Varjopuro, 2019).

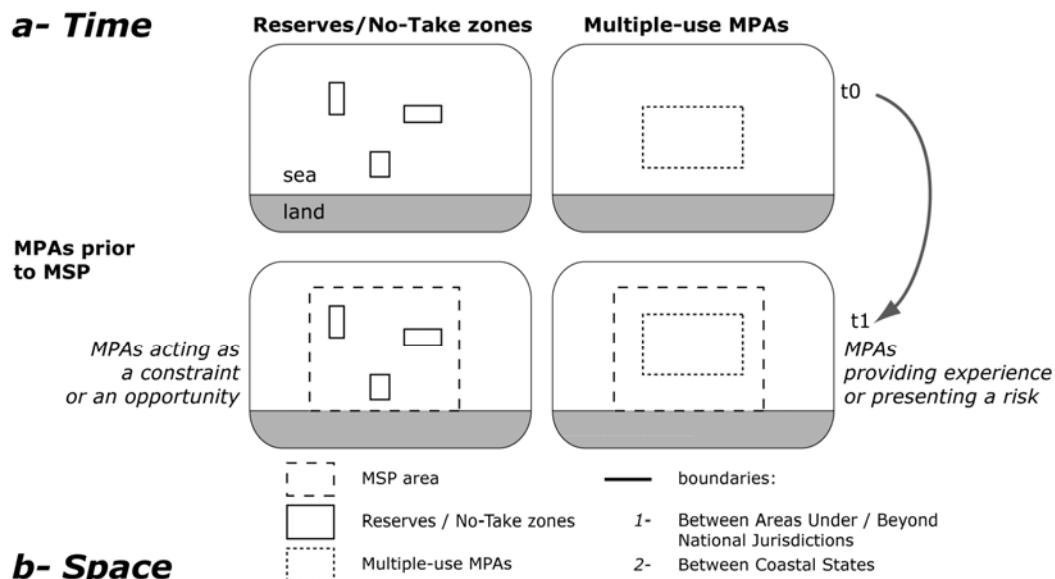
3. Parallel or converging?

Accordingly, links between MPAs and MSP are diverse and complex, due to their different purposes, ideological backgrounds and varying territorial circumstances. For instance, Jones et al. (2016) established that MSP and MPAs can take different roles depending on the type of MSP, whether it is on the side of ecosystem-based approach or supporting maritime economic development. From a theoretical point of view, these relationships can be explored from an alternative perspective offering a complementary outlook: temporal and spatial. So, here again, we do not claim to capture all the possible relationships between MSP and MPAs, but rather to propose a framework –still partial– that helps to think about these relationships from the only two perspectives of space and time. Figure 1 presents some of the relations between MSP and MPAs schematically along temporal and spatial axes, reflecting the two main kinds of MPAs, (whilst ignoring the diversity of MSP). Using this figure, we propose a tool for systematic analysis of the relationships between MSP and MPAs from a twinned temporal and spatial point of view. This should be regarded as a draft that provides food for thought.

3.1. From a temporal point of view

Although MSP and MPA processes are relatively recent and still in progress, marine environmental awareness has been established for some time. As far as the development of MSP is concerned, in the EU for instance, IMP emerged in the form of a “green book” in 2006 then, after public consultation, with a “blue book” in 2007 and formally in 2012 with the Lissabon Declaration. This policy led to a reorganisation of the Commission services, with the enlargement of DG Mare's responsibilities and the establishment of a steering structure, the “Common Implementation Strategy” (Chaigneau and Guineberteau, 2015). One of the three tools of this policy is MSP, with different drivers that are difficult to reconcile (Qui and Jones, 2013; Jones et al., 2016). However, MSP has lagged behind notably when compared to the development of MPA networks which has been in progress since the beginning of the 2000s and has gathered greater momentum following the Malahide Conference (European Commission, 2007). Furthermore, the EU's Marine Strategy Framework Directive (presented as the “environmental pillar” of the IMP) dates from 2008, while that on MSP was only adopted in 2014. In other words, MSP has been slower than the advance of MPAs in the European context, except where Member States have taken their own initiatives ahead of the European timetable. In all likelihood, the fact that the designation of

a- Time



b- Space

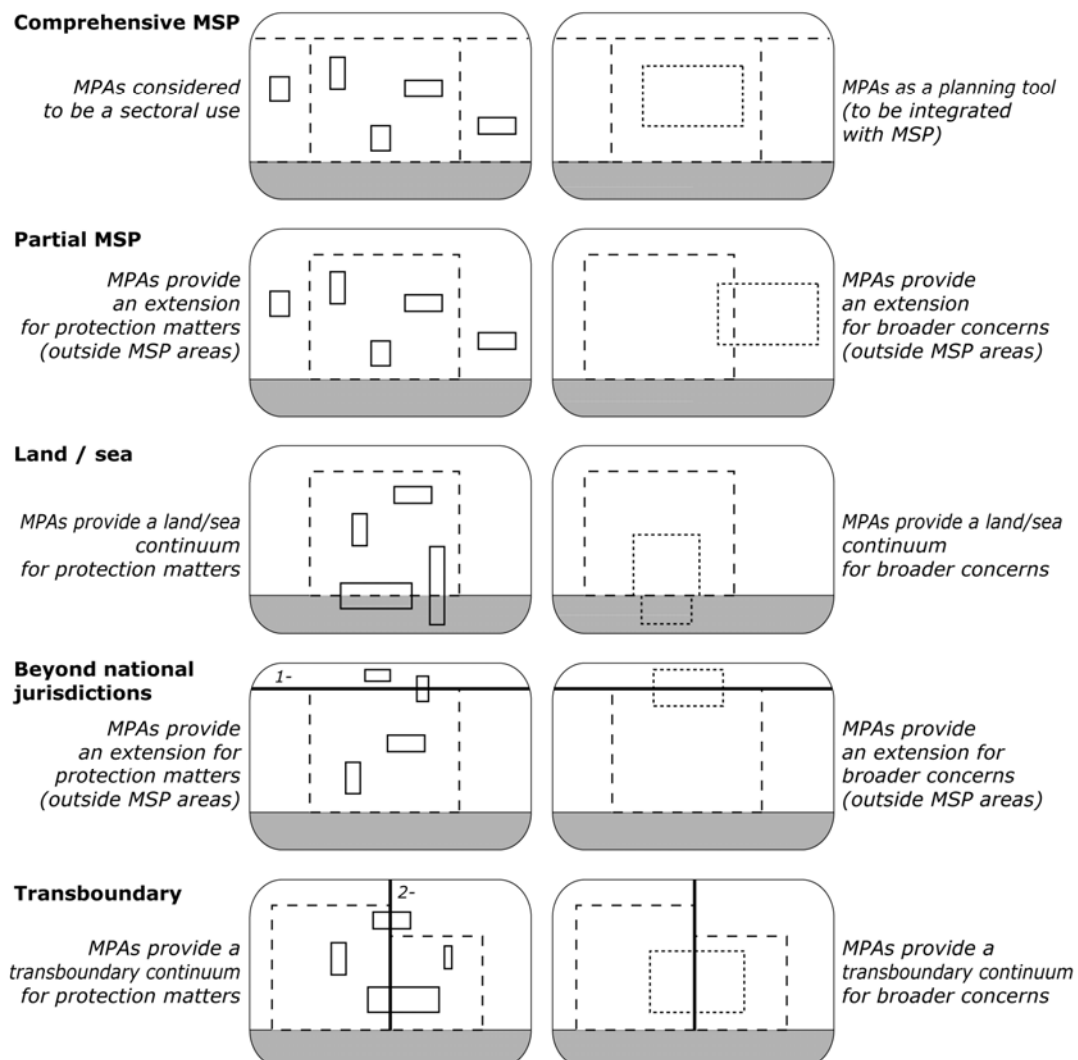


Fig. 1: Models of links between MSP and MPAs

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MPAs has mostly preceded MSP compromises the scope of MSP and creates some practical difficulties (Figure 1a):

- Reserves and No-take zones could represent a constraint for the MSP process because the network of MPAs, effectively zoned, has to be “taken as it is”. Conversely, it could be an opportunity for MPAs insofar as *“the development of a system of MSP will be an opportunity to expand the role and design of individual and networks of MPAs [if MPAs are to be a type of “use zone” within MSP] and clarify this role to other user groups.”* (Gubbay, 2004).
- As suggested for instance by Ban et al. (2012), multiple-use MPAs could present an opportunity for MSP insofar as the experience gained from the MPA process improves MSP or if synergies are encouraged (if MSP substitutes or complements MPAs), depending on the characteristics of the MPAs (size, efficiency, partnership quality, etc.). It could also increase the risk of biasing the MSP process, if that MSP is intended to balance different interests.

This temporal shift is familiar in spatial planning in general, because planning rarely begins with a clean sheet. This suggests at least a need to re-examine the MPAs strategy, if appropriate, by replacing it with the wider perspective of strategic planning of the oceans. This could also be the case for pre-existing sectoral planning and other forms of planning at a lower level than MSP. But, in the case of a temporal shift, the main problem would be if the policy context did not provide a clear direction, possibly due to political inability to decide or a lack of political will in the context of subsidiarity.

Furthermore, the basic difference of timescales between MSP and MPA processes (adapted to the short/mid-term for the former and the long term for the latter) inevitably introduces problems. For instance, if MPAs are fixed in maritime plans due to long-term conservation objectives, they risk hindering further discussion during plan-making.

3.2. From a spatial point of view

There are several possible ways of interpreting technically the spatial aspects of links between MSP and MPAs, with reference to: types of MPA in relation to the categories mentioned above, land-sea integration, geographical scale, considerations beyond national jurisdiction, transboundary issues, state-of-play of sectoral planning, etc. Indeed, there is a wide range of possible connections between MSP and MPAs that will be influenced by these factors and their combinations. Without attempting to cover all of them, Figure 1b presents an initial characterisation of five cases exploring the roles that MPAs (summarized in two types: (i) No-Take zones / Reserves, (ii) Multiple-use areas) could play:

- If MSP is comprehensive, MPAs may considered to be a “sectoral use” (type i) on the one hand, or would allow good integration of management objectives (type ii) on the other hand, especially if its scale approaches that of the MSP perimeter;
- If MSP is partial, MPAs could provide an effective extension of MSP outside MSP areas (types i and ii), possibly with more environmental requirements than MSP (type ii);
- In the context of land-sea integration, Protected Areas straddling the land and the sea could provide a continuum that may help to strengthen the links between land and sea for certain conservation planning matters (type i) or for some broader concerns (type ii);
- In the context of areas beyond national jurisdictions (ABNJ), MPAs could provide an extension (types i and ii). This could be seen as contributing to a creeping jurisdiction process, which also raises the question of applicability beyond national jurisdictions;

their status may be unclear whatever the type of MPAs (Ardron, 2008; Freestone et al., 2014; Gjerde et al., 2008; Gjerde and Rulska-Domino, 2012; Matz-Lück and Fuchs, 2014; Molenaar and Ould Elferink, 2009; Rochette et al., 2014; UNEP-MAP-RAC/SPA, 2011); Wright et al., 2019), and certainly incomplete;

- In the context of transboundary issues, MPAs could provide a continuum facilitating coordination between states. This could be especially in the European Union, for instance, in relation to shared concerns such as conservation matters.

Obviously, these theoretical models of spatial relationships between MPAs and MSP are mixed, and will fluctuate with the contents, issues, expected outputs and stakeholder engagement in the two processes.

As a first attempt, this analysis is incomplete because, for instance, it underestimates the role of the scale/size of MPAs, notably with “large-scale MPAs” currently encouraged by public authorities with certain political targets (Leenhardt et al., 2013) who consider that the size and age of marine reserves matter (Claudet et al., 2008). It also neglects the way that MPAs are designed and managed, including participation issues (even if social considerations are as important in marine conservation as in MSP (Ban et al., 2013)). In practice, things are also more nuanced with, for instance the inclusion of one or several No-Take zones in a Multiple-use MPAs, the possible mixing of situations presented here, the question of the size of MPAs which may influence the relations with MSP or even the need for MSP. In addition to these temporal and spatial considerations, one should consider that processes could be interlinked and progressive: no process is done in a vacuum (for example, stakeholders who are involved in one process, producing knowledge and contributing to decision-making, could influence other processes). Governance processes also play an important role. Moreover, as well as the particular case of MSP and MPAs, there are interactions with other management tools (including sectoral ones), especially when they focus, possibly partly, on the same space even (in the case of overlapping, interlocking scales...). In addition, the different possible levels of decision-making (local, national, regional) –referring themselves to the different kinds of distribution of competencies in national contexts (federal model, centralised model, etc.)– play an important role in the relationship between MSP and MPAs systems. In this respect, it seems that no approach has proved more successful than another in its ability to integrate the systems of MSPs and MPAs. With this in mind, this analytical framework highlights many issues that are often unexplored in the literature discussing the links between MSP and MPAs. Some of them will be further analysed by using this analytical framework in two case studies.

Box 1- Few illustrations about the French case

The French context helps to illustrate potential relations between MSP and MPAs for three main reasons. Firstly, within the European Union which is at the forefront of MSP, France has already (quantitatively speaking) an extended MPAs network⁴, whilst MSP is not yet fully implemented but still in progress (though due to meet the deadline of March 2021 according to Article 15 of the European Union Directive on MSP). Secondly, France has a very large maritime domain with overseas territories, and MSP is only anticipated for some of them⁵. Thirdly,

⁴ According to their French definitions, MPAs cover 2,419,325 km² in the early 2019, that is to say 23.57% of waters under jurisdiction (<http://indicateurs-biodiversite.naturefrance.fr/fr/indicateurs/surfaces-en-aieres-marines-protegees>). This is the result of the national strategy for MPAs in France, defined in 2007 and revised in 2012, whilst that constituting a frame for MSP has been adopted ten years later (2017).

⁵ Even if overseas territories are not concerned by the European Union Directive on MSP, the French government still decided to set up marine spatial plans in four “maritime basins” (West Indies, South of Indian ocean, Guyana and St.Pierre-et-Miquelon). On the other side, French Polynesia and New Caledonia have their own competencies for maritime affairs and no marine spatial plan could be expected by the French government (and

most French MPAs have a broader purpose of sustainable multiple-use of the sea rather than conservation-only MPAs and, thus has similarities to some other spatial planning tools.

Based on this experience, some examples of models shown in Figure 1 are as follows:

- MPAs prior to MSP: What could be considered as No-Take zones represent about 30% of French MPAs (mainly due to the 670.000 km² of the national reserve of the French Southern Lands). On one hand, these have to be incorporated as they stand into maritime plans. On the other hand, MSP is now an opportunity to introduce connectivity and networks, especially in the case of spatially-fragmented and size-reduced reserves. Regarding Multiple-use MPAs, many existing MPAs (mostly at a lower scale than those of the forthcoming maritime plans) may benefit from ongoing MSP processes. But, at the same time, there could be a risk of bias in the MSP process, especially in the case of large-scale MPAs such as, for instance, the Marine Natural Park of Mayotte (68,381 km²) which covers an entire EEZ and has already a management plan until 2028.
- Comprehensive MSP: For mainland France, where MSP will be implemented throughout the whole of the marine area, the remarks above also apply
- Partial MSP: To date, no maritime plan is anticipated in New Caledonia and a very large MPA (the Natural Park of the Coral Sea; 1,290,000 km² covering its entire EEZ) has been in place since 2014. In such cases, MPAs could constitute a framework for MSP and provide an extension for broader concerns in the case of Multiple-use MPAs (regarded as planning tools).
- Land / sea: Because MSP is indirectly connected to coastal matters, protected areas that are straddling the land and the sea may facilitate a degree of land/sea integration which can complement MSP processes. For instance, this would be (type i) the case for National Reserves with a marine part (Seine estuary, Scandola, French Southern Lands...), and (type ii) for the three National Parks with a marine part (Port-Cros, Calanques, Guadeloupe).
- Beyond national jurisdictions: France has been involved for some years in actions of the Oslo-Paris Convention (OSPAR) and the Convention on the Conservation of Antarctic Marine Living resources (CCAMLR) concerning MPAs in the Atlantic and in the Antarctic beyond national jurisdictions. To date, no MSP exists in the high seas, but it is an objective which was confirmed at a recent EU-UNESCO conference on MSP (Paris, March 2017).

4. First lessons from two European case studies

In the European context where the devices for MSP and MPA have been designed, two cases are particularly interesting because the processes have been initiated over several years: England and Germany. As far as possible, the different perspectives above will be used as an analytical framework.

4.1. England: Two separate processes

A statutory system for MSP was introduced to the United Kingdom through a series of policy documents which culminated in primary legislation in 2009 and 2010 (Defra, 2007; HM Government et al., 2011). This paved the way for MSP implementation, which was devolved to the four constituent parts of the UK (England, Scotland, Wales and Northern Ireland). In England, the newly-formed Marine Management Organisation (MMO) became responsible for preparing maritime plans and began a rolling programme of plan-making for English waters, of which the first ones, for parts of the North Sea and the English Channel, were completed in 2014 and 2018 (Defra, 2011; HM Government, 2014, 2018). Plans for the remaining areas are currently being prepared.

In parallel to this, a process got underway for designating a suite of new MPAs, referred to as Marine Conservation Zones (MCZs). This was described in some of the same policy documents that introduced MSP, and for England, the statutory basis for MCZs is set out in the same legislation (Marine and Coastal Access Act 2009). However, MCZs are dealt with in a

without to mention upcoming referendums about self-determination in the first case and independence for the second one).

separate part of the Act, and statutory responsibility for the MCZ process lies not with the MMO but with government bodies that have a nature conservation remit (Natural England within the 12 nm limit and the Joint Nature Conservation Committee beyond 12 nm). This led to a lengthy consultation process that aimed to decide on the most appropriate locations for MCZs. English waters were divided into four areas for this purpose, and a separate exercise was carried out with conservation experts and stakeholders for each area. The intention was to incorporate rare, threatened and representative marine flora and fauna and features of geological and geomorphological interest, though also taking into account social and economic impacts.

This led to proposals for 127 MCZs spread throughout English waters, covering 15% of the marine area, varying greatly in size and in terms of the features to be protected. 65 of the areas were recommended for high level protection. These stakeholder-led proposals were broadly supported by a further scientific study (though with some questioning about the degree of confidence with which the MCZs could capture the intended features) (JNCC and Natural England, 2012). This exercise was hailed as a great success by marine conservationists⁶. However, this soon turned to disappointment when government did not accept the recommendations in full, but, in 2013, only gave official designation to 27 of the proposed MCZs. This was seen as a shift away from an integrated network approach towards preservation of site-specific features (Lieberknecht and Jones, 2016). Moreover, the designations did not introduce any restrictions on activities within them, leading to accusations of these being MCZs on paper only (Appleby and Jones, 2012)⁷. A designation order simply includes the definition of boundary coordinates, conservation objectives and key natural features for the MCZ in question. Nonetheless, two further rounds ('tranches') of MCZ designation followed in 2016 and 2019, leading to a total of 91 MCZs⁸.

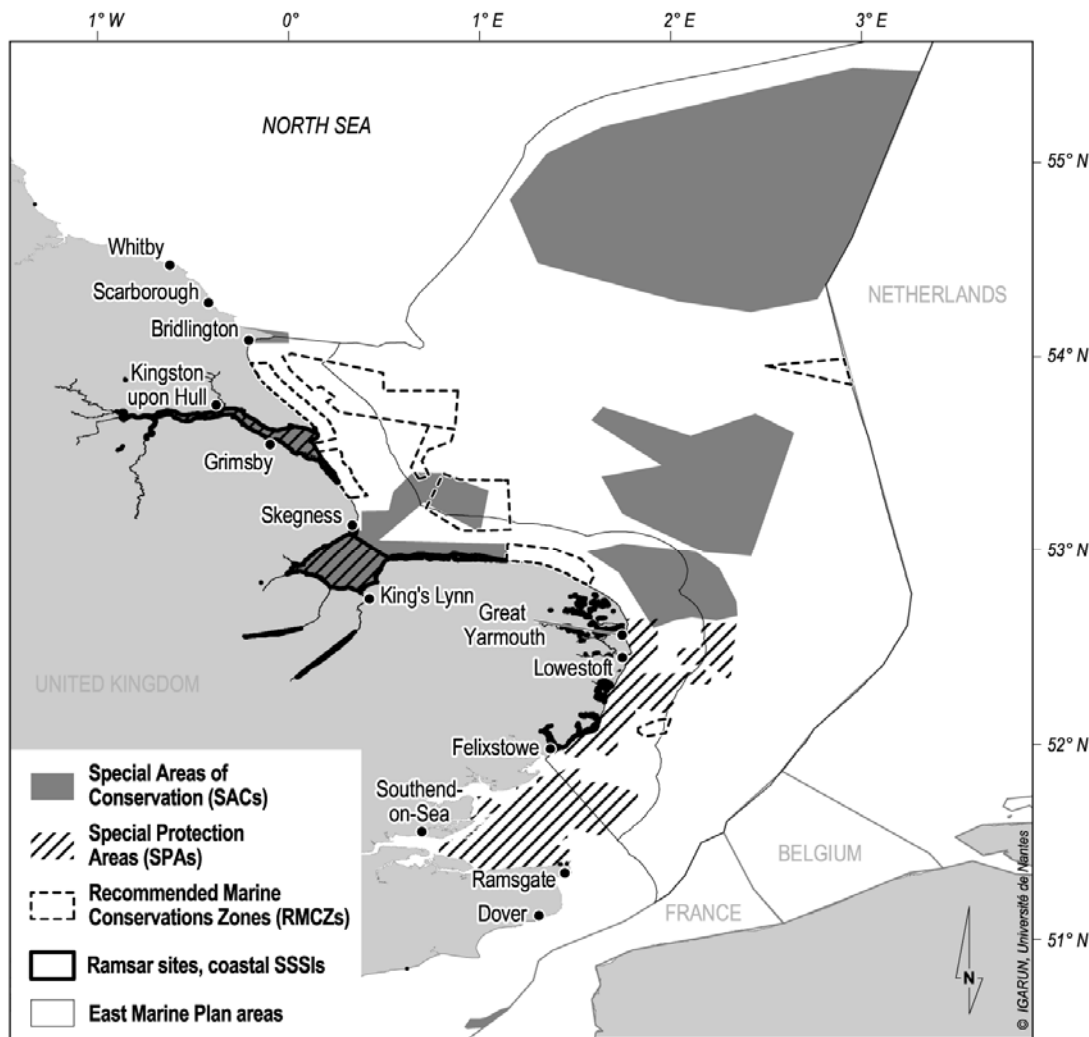
MCZs are intended to supplement a range of existing marine conservation designations. These have been established under various national, European and international conservation frameworks, and in England include Sites of Special Scientific Interest, Special Areas of Conservation, Special Protected Areas and Ramsar Sites. These are generally terrestrial designations, but in many cases they are coastal in nature and extend into coastal waters, especially estuarine and inter-tidal waters. The marine components of these designations are considered to be MPAs, and along with the newly-formed MCZs (and their equivalent in Scotland) form a national MPA Network⁹. Figure 2 shows the potential network in England's first maritime plan areas.

⁶ The Wildlife Trusts Marine Conservation Zones (England): <http://www.wildlifetrusts.org/mcz>

⁷ C. Roberts, England's marine conservation network is worse than useless. The Guardian, 17 June, 2014: <http://www.theguardian.com/environment/2014/jun/17/england-marine-conservation-zones>

⁸ Department for Environment, Food and Rural Affairs (Defra) : <https://www.gov.uk/government/collections/marine-conservation-zone-designations-in-england#2019-mcz-designations-and-factsheets>

⁹ Joint Nature Conservation Committee (JNCC): <http://jncc.defra.gov.uk/>



Source : « East Inshore and EastOffshore Marine Plans »,
UK Department for Environment, Food and Rural Affairs, modified

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Figure 2: Potential MPA network in England's East Inshore and Offshore marine plan areas

The designation of MPAs in England does not of itself generally impose any restriction on activities within them. It is intended that protection will be achieved through advice and management measures, tailored to individual MPAs. In the case of MCZs, for example, authorities are expected to contribute to conservation objectives when licensing activities; they should also work with stakeholders in developing suitable measures, which may be voluntary in nature (Defra, 2013).

The procedure of MPA designation in England is therefore divorced from the preparation of maritime plans. The MMO was not involved in the MCZ exercise, and it was not the primary purpose of identifying possible MCZs to integrate marine conservation with other interests. The MMO is, however, clearly one of the authorities that should work towards achieving MPA objectives, both in plan-making and licencing decisions.

So as far as MSP is concerned, the preparation of maritime plans is taking place against a backdrop of existing MPA designations in coastal areas and an ongoing process of establishing new MPAs (MCZs) throughout UK waters¹⁰. This approximates to multiple-use MPAs es-

¹⁰ This is, in fact, in keeping with terrestrial planning practice, which works within ever-changing contexts of natural conditions and built development, only some of which it has direct control over.

379 tablished prior to MSP in Figure 1. It should also be noted that some other protected areas,
380 shown in Figure 2, straddle the land-sea divide, providing a continuum as shown in Figure 1.

381 However, in England, MSP is expected to contribute towards achieving the objectives of
382 MPAs. This is evident both at strategic and plan-making levels. To begin with, the national
383 guidance for MSP reiterates government commitment to the MPA Network and to protecting
384 biodiversity throughout UK waters (HM Government et al., 2011). Following on from this,
385 the first maritime plans give policy support to MCZs and the wider MPA network (HM Gov-
386 ernment, 2014). This implies that MPA objectives will be an important consideration in any
387 licensing decisions that may affect MPAs and may weigh against permitting certain activities.
388 Although this falls short of guaranteeing that MPAs will be fully protected, it does allow for
389 the needs of individual MPAs to be addressed in future planning decisions. This is, arguably,
390 in keeping with the wider UK tradition of spatial planning, which is to establish policy priori-
391 ties through plans and judge development proposals in the context of these priorities and other
392 relevant considerations. Moreover, the MMO may collaborate with other agencies and stake-
393 holders in developing management measures for individual MCZs, as envisaged by the desig-
394 nation process.

395 So MPA designation is not being incorporated fully into the MSP process in England; it is the
396 subject of a separate exercise rather than being part of an integrative process of planning all
397 maritime activities. Also, it has not met initial expectations, leading in the eyes of some to no
398 more than ‘paper parks’. But MSP does offer the opportunity for MPAs to be given greater
399 prominence and protection through ongoing incorporation into planning and management
400 processes, within the context of a flexible approach to marine nature conservation.

401 **4.2. Germany: a missed opportunity?**

402 Germany was the first European nation to implement a statutory system of MSP for its waters.
403 This was done at two levels of governance, reflecting Germany’s federal structure: the federal
404 government took on responsibility for MSP in the nation’s exclusive economic zone (EEZ)
405 and the coastal states extended their planning competencies into the coastal waters as far as
406 the EEZ. This system was established on the basis of existing planning legislation (Douve
407 and Ehler, 2009b). MSP in the EEZ has been the most striking initiative. This was delegated
408 to the federal maritime agency (Bundesamt für Seeschifffahrt und Hydrographie (BSH)),
409 which began the process in 2005, leading to two plans for Germany’s EEZ, one for the North
410 Sea part in 2008 and the other for the Baltic Sea part in 2009 (BSH, 2009). These plans are
411 currently being revised¹¹.

412 The plans for the EEZ focused on a few key maritime interests, by setting out extensive pri-
413 ority areas and other measures for them. The sectors covered were shipping, offshore wind
414 energy, pipelines and cables and scientific research. Notably, the plans did not establish any
415 new areas or significant measures for nature conservation. BSH worked on the assumption
416 that nature conservation areas had already been designated through Natura 2000 legislation,
417 implementing the European Union’s bird and habitat directives. These sites cover about 30%
418 of the EEZ and most of the coastal waters (and are the only form of MPA in Germany). BSH
419 held that the purpose of MSP was to cater for other, under-represented, interests.

420 This approach was contested by environmental organisations, research institutions and the
421 federal environment agencies. They argued that the plan provided an opportunity for addition-
422 al measures that would help protect the Natura 2000 areas in the EEZ, by being made into na-

¹¹ Bundesamt für Seeschifffahrt und Hydrographie (BSH):
https://www.bsh.de/EN/TOPICS/Offshore/Maritime_spatial_planning/maritime_spatial_planning_node.html

ture conservation priority areas on a par with those for shipping, etc. In response, BSH simply showed the Natura 2000 areas on the EEZ maps by way of information (they had not been shown at all on the first drafts), maintaining that these areas had a separate legal basis and that the plan, as a legal ordinance, was concerned with other matters. Environmental stakeholders continued to criticise this as an overly-legalistic approach to MSP and a missed opportunity as far as the Natura 2000 sites were concerned; they contended that these sites were not getting the protection they needed under the narrow provisions of the Natura 2000 legislation and that there would be additional value in giving them greater recognition in the plans.

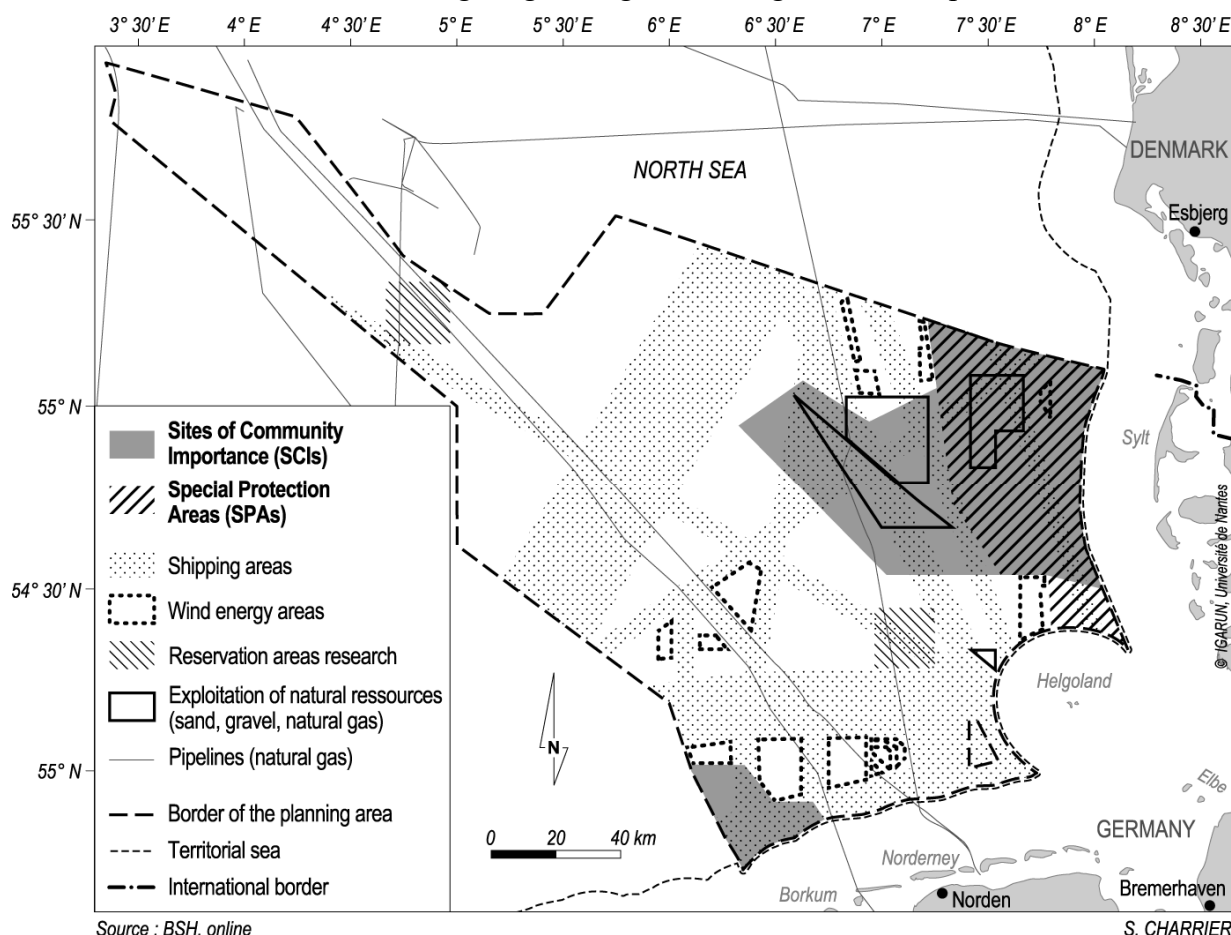


Figure 3: Part of the North Sea plan for the German EEZ

BSH resisted these arguments, claiming that management plans under Natura 2000 would be sufficient. The agency also pointed to the plans' broader provisions for nature conservation, that other uses must respect ecological concerns throughout the whole of the EEZ, not just in Natura 2000 areas. Indeed, biodiversity and environmental protection concerns do recur throughout the plans; for example, offshore wind farms are not allowed in Natura 2000 areas, and the need to ensure best environmental practice is repeatedly stated (Jay et al., 2012). Also, nature conservation was given a prominent role through a lengthy environmental report accompanying the plans, which had major input from the federal agency for nature conservation (Bundesamt für Naturschutz).

But environmental organisations remained unconvinced, continuing to feel that the plan did not succeed in balancing conflicting interests and was biased towards certain sectors, especially those for which BSH has other statutory responsibilities. Indeed, the plans might be thought to compromise further the integrity of the Natura 2000 sites, as maritime activities such as shipping are given priority areas through the sites (Jay et al., 2016) (Figure 3).

For the coastal waters, the states have made much less definitive proposals. There has been little more than a broad indication of key interests, with some integration with the EEZ plans, such as a continuation of shipping areas and routes for cables and pipelines. Natura 2000 areas have, however, been treated on an equal, if not very strong, footing. This reflects the different nature of these plans, as they offer strategic level guidance for the state territories (mostly covering land), rather than legally-binding instruments, as in the case of the EEZ. They have also been prepared by the states' established agencies of planning, who have simply added the coastal waters to their remit. Arguably, they have adopted a more integrative approach to marine interests, including nature conservation, than BSH has in federal waters (which represents not only a new geographical domain for planning, but also a new federal role in spatial planning).

So in Germany, MSP is not acting as a mechanism for designating MPAs or for improving their management, but is being used primarily for the benefit of more economically-focused activities. MPAs rely on other legal provisions, namely European conservation frameworks. However, they are being accommodated to some extent into emerging patterns of sea-use, as expressed in marine spatial plans, and are a constraint on some potentially harmful activities. As is generally the case in England, therefore, MPAs also approximate to multiple-use MPAs established prior to MSP (Figure 1), but MSP is not specifically expected to contribute to MPA objectives.

5. Discussion & Conclusion

There are multiple ways to consider the links between MPAs and MSP; approaches are both parallel and converging depending on the different forms they take in practice. The two examples presented above, from England and Germany, illustrate different paths where there are difficulties of integration, perhaps more for political than technical or practical reasons. Real world-MSP is often driven by Blue Growth logics (Jones et al., 2016) which challenges the convergence between the two processes. The relationships between MPAs and MSP are complex, multiple, changing, and must be viewed from various angles. MSP and MPAs sometimes share tools (namely decision-support tools), sometimes not depending of the type of planning in play.

The framework proposed in this paper emphasizes relationships in space and time. This is not intended as the final tool with which to conceptualize the relationships between MSP and MPAs, but it does provide a complementary point of view for discussion. Furthermore, this reflection draws attention to four points in order to improve the integration of MPAs and MSP. Firstly, inter-relations must be considered from a policy point of view, as technical discussions alone remain purely theoretical. It would appear that in the European context, either policy choices have not been made or they are not yet clearly expressed. Whatever the situation, the development of planning initiatives (MSP, sectoral planning, conservation zoning...) is not neutral and may raise in some cases questions of "ocean grabbing" (Bennett et al., 2015) and "sea sparing" (protecting areas from uses while intensifying uses in other areas) (Wolff, 2015). Secondly, taking into account the relative weakening of public power and the rise of non-state actors (companies, NGOs, associations...), the choices available to ocean management underline the need of a democratic and open debate. Both MSP and MPAs have the potential of 'hijacking' if political considerations are in the backseat when, in the same time, an evidence-based-rationalist planning is driving the system. Thirdly, the issue of financial resources should not be overlooked as it has a bearing on technical and, indirectly, political choices. There is therefore a question about the tools promoted by different communities of scientists and practitioners (coastal and marine planners, conservationists...). Finally, there

is an important issue around data, information and knowledge (including non-scientific knowledge), because whatever the links between MPAs and MSP, much will depend on the availability, quality and uses of all kinds of data and knowledge to inform these processes and ensure a real and effective participation.

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