



BEST PRACTICE **IN MARITIME SPATIAL PLANNING**

Towards Mutually Beneficial Outcomes
for Fishers, Renewable Energy
Production and Marine Conservation

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List of Abbreviations

CBD:	Convention on Biological Diversity
CFP:	Common Fisheries Policy
EBM:	Ecosystem-Based Management
EC:	European Commission
EEA:	European Environment Agency
EEZ:	Exclusive Economic Zone
ENGO:	Environmental Non-Governmental Organisation
EU:	European Union
GMZ:	General Management Zone
GVA:	Gross Value Added
GW:	Gigawatts
ICZM:	integrated Coastal Zone Management
IUCN:	International Union for the Conservation of Nature
MaPP:	Maritime Planning Partnership (British Columbia)
MEIL-MV:	Ministerium für Energie, Infrastruktur und Landesentwicklung Mecklenburg-Vorpommern (Ministry for Energy, Infrastructure and Spatial Development Mecklenburg-Vorpommern)
MIE & MEA:	Ministry for Infrastructure and Environment & Ministry for Economic Affairs (Netherlands)
MPA:	Marine Protected Area
MRE:	Marine Renewable Energy
MSP:	Maritime Spatial Planning
MvleM, 2014:	Ministerie van Infrastructuur en Milieu (Ministry for Infrastructure and Environment, the Netherlands)
NGO:	Non-Governmental Organisation
NSSA 2050:	North Sea Spatial Agenda 2050
OW:	Offshore Wind
PNCIMA:	Pacific North Coast Integrated Management Area
SDP:	Spatial Development Programme
SMZ:	Special Management Zone
PMZ:	Protection Management Zone
STECF:	Scientific, Technical and Economic Committee for Fisheries
WWF:	World Wide Fund for Nature

Foreword

With this study, we set out to demystify the process behind planning, developing and conservation for our seas and oceans.

In the coming years, we will be increasingly familiar with the process of Maritime Spatial Planning as we look to simultaneously harness the energy of the winds and the seas and protect our marine environment from overexploitation, whilst continuing to provide healthy food and sustainable livelihoods to coastal communities and beyond. Some countries are already miles ahead in this process, with well-established Spatial Plans for their waters. Others have yet to publish their own. As a bloc, the European Union will lead the charge, with 21 Member States required to produce National Maritime Spatial Plans by March 2021.

Established good practice in Maritime Spatial Planning around the world can provide these Member States with models to learn from and adapt, in order to better plan the management of our marine, foster community involvement in the process, and facilitate constructive dialogue between stakeholders. In Europe, this process will ultimately help us to achieve the ambitious aims of the European Green Deal to live sustainably within the planetary boundaries, for example by protecting 30% of our land and seas over the next ten year as outlined in the 2030 EU Biodiversity Strategy .

In this study, Dr. Walsh succeeds in making this complex and technical process accessible to all readers and effectively communicating the transferable lessons we can learn from best practice in Maritime Spatial Planning.



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Summary for Policy-Makers

2021 marks the beginning of the United Nations Decade of Ocean Science for Sustainable Development, a decade of international collaboration gathering stakeholders worldwide in order to create improved conditions for sustainable development of the ocean and marine conservation. In the European Union, 2021 will also mark the deadline for the establishment of Maritime Spatial Plans for 21 Member States with the aims of encouraging dialogue between stakeholders, providing certainty for sustainable investment, and protecting the environment.

The oceans are critical for stabilising climate and supporting life on Earth and human well-being. The marine is also a socio-economic space that supports thousands of communities and presents growing opportunities for the future, in offshore renewable wind energy, aquaculture and marine protection. As marine activity intensifies and expands, the potential for tension between stakeholders increases and new challenges concerning the protection of the marine environment from damage and overexploitation emerge. This underlines the need for collaborative, inclusive and cross-sectoral Maritime Spatial Planning.

In examining a range of case studies from the Baltic Sea to the coast of British Columbia,

this study identifies the many benefits of good practice in Maritime Spatial Planning such as; the provision of legal clarity with respect to the use of marine space, agenda-setting, policy framing and strategic visioning, as well as encouraging community-led inclusive planning. Successful and effective Maritime Spatial Planning does not view the marine space through the prism of exploitation, economic development or environmental protection alone. It provides an integrative, interdisciplinary perspective and recognises the cultural value of the marine space to local communities, including fishers, who play a key role in the process. Maritime Spatial Planning also addresses the wider needs of society through the provision of public goods such as clean energy and a healthy marine environment.

As offshore renewable energy production rises to the challenges of today's energy needs and Member States strive to meet the ambitions of the European Green Deal in terms of marine protection, Maritime Spatial Planning will play a key role in providing constructive and collaborative solutions to managing that transformation. This study identifies good and best practices in that process and the transferable lessons we can learn from them.

Introduction: Balancing Biodiversity, Blue Economy and Climate Policy Objectives

Since the publication of the EU Marine Strategy Framework Directive (2008/56/EC) with its objective to achieve good environmental status for European marine waters and a Blue Growth Strategy in 2012 (EC 2012) supporting sustainable economic development at sea, the marine has become the focus for policy-making and governance action. Over the same period, maritime¹ economic activity has increased in intensity and become more diverse, while concerns for the health and biodiversity of the world's oceans has risen along with awareness of their potential contribution to climate change mitigation and adaptation. In fulfilment of the requirements of the EU Maritime Spatial Planning Directive (2014/89/EU) Member States are required to prepare and adapt spatial plans for their territorial waters and Exclusive Economic Zones by March 2021.² This study reviews current practice in maritime spatial planning (MSP) in the EU and beyond and examines the potential for MSP to deliver mutually beneficial outcomes for offshore wind energy development, fisheries and nature conservation.

The study is structured as follows. The remaining sections of this Chapter (1.1 to 1.3) provide a concise overview of recent developments and trends with respect to offshore wind energy, marine protected areas (MPAs)

and fisheries respectively. Chapter 2 examines current marine governance challenges and potential ways forward, prior to an introduction to spatial planning and MSP as policy tools in Chapter 3. Three good practice cases studies are subsequently presented and discussed in Chapter 4, followed by conclusions and recommendations in Chapter 5.

1.1 OFFSHORE WIND ENERGY

The EU Green Deal (EC 2019, p. 14) envisages a 'central role' for a sustainable blue economy in "alleviating the multiple demands on the EU's land resources and tackling climate change". Offshore wind is the most established form of marine renewable energy (MRE) generation. Other MRE technologies, where the EU also occupies a leading position globally include ocean energy (tidal and wave) and floating photovoltaics. Further MRE technologies, currently at an earlier stage of development include algal biofuels and ocean thermal energy conversion. Today the offshore wind energy sector employs approximately 62,000 people whereas ocean energy employs 2,500 (EC 2020a). The Offshore Renewable Energy Strategy (EC 2020a) calls for a scaling-up of the offshore wind industry, from 12 Gigawatts (GW) of installed capacity today to 60 GW in 2030 and 300 GW by 2050. This planned 30-

¹ The terms maritime and marine are both used in this study (and elsewhere, despite their similarity in meaning. Maritime generally refers to human activities at sea. Marine refers more broadly to the marine environment.

² Information on the current status of the maritime spatial plans in each Member State is found at the European MSP Platform <https://www.msp-platform.eu/>

fold increase in capacity in a period of less than 30 years means a ‘massive change of scale’ over a comparatively short period of time, “unparalleled by the past development of other energy technologies”. This transformation is expected to require an investment of up to €800 billion (EC 2020a) and requires coordinated strategic planning to provide decision-making clarity for investors and to mitigate the potential for conflict with other maritime uses and policy objectives. The planned scale-up of the offshore wind industry is, however, projected to require less than 3% of European maritime space. The economic contribution (GVA) of marine renewable energy (MRE) increased from €79 million in 2009 to €1,089 million in 2018 (EC 2020b). Employment in the MRE sector increased from approximately 600 persons in 2009 to 4,600 in 2018. MRE continues, however to represent a very small share of Blue Economy GVA and jobs (0.5% and 0.1% respectively in 2018), (EC 2020b). To date, offshore wind energy developments are concentrated in the North Sea. Areas of significant future potential include the Atlantic Ocean (territorial waters and EEZs of France, Ireland, Portugal and Spain). The further development of floating wind farm technology will increase the scope for offshore wind in deeper offshore waters (EC 2020c). The industry association WindEurope envisages offshore wind energy contributing 450 GW in 2050, with 212 GW projected capacity in the North Sea, 85 GW in the Atlantic Ocean, 83 GW in the Baltic Sea and 70 GW in Southern European waters. The

higher projected share in northern European waters (Atlantic, North Sea, Irish Sea and Baltic Sea) is attributable to a combination of locational factors including proximity to areas of high demand, supply chain efficiencies and good wind resources (WindEurope 2019, p. 7).

1.2 MARINE PROTECTED AREAS

In line with political commitments and legal obligations under the Convention on Biological Diversity (CBD), establishment of marine protected areas has progressed significantly over the last decade. The Aichi Target 11 of the CBD called for protected status for 10% of coastal and marine areas by 2020:

”By 2020 [...] **10 % of coastal and marine areas**, especially areas of particular importance for biodiversity and ecosystem services, are conserved through **effectively and equitably managed, ecologically representative and well-connected systems** of protected areas and other effective area based conservation measures, and integrated into the wider [...] seascape” (EEA, 2018).

Significantly, this policy commitment, addresses not only designation targets but calls for effective and equitable management as well as stipulating that MPAs are connected and integrated within their wider geographical contexts. By 2019, EU Member States had designated a total of 12.4% of the European sea area as MPAs (WWF 2019). The same report,

however, found that only 1.8% of the marine area is covered by MPAs with management plans, indicating that some maybe protected areas in name only. The degree of MPA coverage also varies significantly across European regional seas from over 27% for the Greater North Sea to 3% or less for the Aegean-Levantine Sea and Ionian and Central Mediterranean Sea. It is also noteworthy that MPA coverage is currently six times higher in coastal waters than is the case for offshore waters (EEA 2018). Generally speaking, MPA designation and management has progressed more rapidly in regional sea areas with a higher intensity of current and planned economic activity (such as the North Sea and western Baltic Sea) indicating a policy desire to protect particularly vulnerable ecosystems and habitats from anthropogenic impacts.

The EU Biodiversity 2030 Strategy (EC 2020d) sets out a target of at least 30% of the land and 30% of the sea under protection by 2030. This implies an additional 19% of sea areas designated for nature protection. Strict protection is envisaged for areas of high biodiversity value or potential, accounting for at least one third of all marine protected areas or 10% of EU sea area. The Biodiversity 2030 Strategy foresees “substantial health, social and economic benefits to coastal communities and the EU as a whole”, stemming from protected and restored marine (EC 2020d). It is evident that comprehensive cross-sectoral MPA management plans and implementation measures are required to achieve these objectives.

A recent research study found evidence of industrial fishing (commercial trawling) in 59% of European MPAs, and counterintuitively that average trawling intensity was higher in MPAs than outside of MPAs (Dureuil et al 2019). The authors suggest that a policy disconnect may partly explain this finding. Whereas fisheries are regulated through the EU Common Fisheries Policy, marine conservation measures are implemented by Member States. IUCN Guidelines for the Marine Protected Areas have prohibited industrial fishing within MPAs but have allowed for “long-term sustainable fishing”. In the absence of an agreed definition of “long-term sustainable fishing”, however, some countries have allowed large fishing fleets to fish within MPAs. To address this issue the London-based Pew Charitable Trusts, coordinated the formulation of an agreed definition of ‘industrial fishing’; encompassing all “commercial trawlers, purse seine vessels and large longliners”, as well as any “large profit-oriented vessels over 12 metres long and 6 metres wide.” The new definition was approved by Member States, NGOs and indigenous community delegates at the IUCN World Conservation Congress in November 2020 (Pew Charitable Trusts, 2020).

1.3 FISHING:

Fishing activity in EU waters is governed under the Common Fisheries Policy (CFP), introduced in the 1970s and updated most recently in 2014. The CFP, analogous to the Common Ag-

ricultural Policy, aims to ensure that fishing and aquaculture are economically, environmentally and socially sustainable. Fish catch is monitored and regulated through a complex quota system underpinned by independent scientific advice. Employment in fisheries and aquaculture declined from approximately 592,000 in 2009 to 573,000 in 2018. Over the same period, the GVA attributable to fisheries and aquaculture (incl. processing and distribution) increased by almost 24%, reaching almost €21 billion in 2018 (EC 2020b). Approximately 152,000 persons were employed directly by the EU fishing fleet in 2016 generating a total revenue of €7.7 billion. 78,304 fishers, 48% of the total fishing workforce were employed on small-scale fishing boats³, accounting for 12% of the total value of EU landings (STECF 2018, Pita et al 2020, p. 58). In general, small-scale fisheries operate within inshore coastal waters, whereas fishing activity offshore (Exclusive Economic Zones and high seas) is dominated by larger vessels which spend longer periods of time at sea.

Small-scale fisheries exhibit substantial diversity across Europe. They are specific to and influenced by distinct local socio-cultural contexts and environments, with diverse historical traditions and contemporary practices (Pascual-Fernandez et al 2020). In southern and eastern Europe, the small-scale fishing fleet is

characterised by large numbers of individual vessels, dispersed across many landing sites and employing a variety of fishing gears and methods to target a vast range of species (Pita et al 2020, p. 586). In contrast, small-scale fisheries in north-western Europe have become more marginalised in recent decades. As is the case with small-scale ‘family farming’ in much of rural Europe, demographic change poses an additional challenge for many coastal fishing communities with an aging workforce and difficulties in attracting younger people into the sector (e.g. Döring et al 2020). Fishing nevertheless remains an important source of income for many peripheral coastal communities, as well as contributing to a sense of identity and belonging. The extent to which national governments differentiate between large and small-scale fisheries varies significantly across Europe, with a wide range of definitions and criteria, reflecting local circumstances and traditional practices (Pascual-Fernandez et al 2020). In the Netherlands for example, small-scale fisheries are largely invisible in policy terms but are found to have local importance, intrinsic to the local identity of fishing villages and valued for their role in tourism (Kraan & Hoefsloot 2020).

Due to the fragmented and diverse nature and comparatively low level of economic output of the small-scale fisheries sector, it has a low

³ Small-scale fisheries are defined by the European Commission to refer to vessels of less than 12 metres, not using towed fishing gear.

level of influence on policy-making, at both national and EU levels (see Brent et al 2018, Pascual-Fernandez et al 2020). Conflicts with other coastal and maritime economic sectors pose a challenge for the future sustainability of small-scale fisheries. In Southern Europe, this challenge primarily relates to expansion of coastal recreation and tourism activities leading to reduced access to fishing grounds. There are, however, some positive examples of economic diversification through fisheries-based tourism development. In Northern Europe, increased competition for sea space is perceived with the expansion of renewable energy, recreational activities and designation of marine protected areas (Pita et al 2020). Fisheries researchers and producer organisations increasingly call for explicit policy recognition of the socio-cultural value of small-scale fisheries in addition to economic and environmental considerations (e.g. Fitzpatrick et al 2020, see Dutch North Sea Case study below). In summary, it may be noted that the fisheries sector, and in particular, small-scale fisheries, faces multiple challenges as competition for

marine space intensifies and environmental regulations become stricter and are more tightly enforced (Brent et al 2018). The exit of the UK from the European Union poses further challenges and increases uncertainty for the fishing fleets of a number of EU Member States, including France, the Netherlands and Ireland. A number of studies indicate that offshore wind farms are likely to significantly reduce access to traditional fishing grounds, due to safety requirements arising from offshore wind farm development (Gimpel 2015, Stelztenmüller et al 2020, p. 16). With reference to the Dutch context, however, Kraan & Hoefsloot (2020) are more optimistic and suggest that wind farm development might positively impact on small-scale fisheries, as only smaller vessels will be permitted in the wind parks and possibilities for multi-use are currently being actively explored.

Multiple Perspectives on the Marine Environment

Some marine conflicts may be resolved or mitigated through technical solutions. For example, current barriers to fisheries activity within offshore wind farms may be ameliorated through the development of legal protocols governing access rights and enhanced safety procedures to minimise risk of collision. Considerable research effort has furthermore been invested in investigating the necessary ecological, geophysical, economic and legal parameters for the successful co-location of off-shore and other uses such as aquaculture through the development of multi-use platforms (see 4.2 below). These approaches can substantially reduce conflict potential through the enhancement of synergies and the more efficient use of marine space.

Other conflicts are of a more fundamental nature and have at their core, very different conceptions of and ways of making sense of marine space. For some economic actors, the marine is a form of 'new frontier' or 'blank canvas' an industrial space for economic investment and development, the potential of which is only beginning to be fully realised. In the case of wind energy development, the marine has become an economically viable and attractive option in large part due to the reduced risk of opposition and protest from local community groups. For fishing communities, the marine is not a homogenous space but one

given social and cultural meaning and value through memory, tradition and local experiential knowledge. In some places and for some people, areas of sea space represent drowned cultural landscapes, areas of land lost to sea through catastrophic storm floods in past centuries. For many nature conservationists, the marine constitutes a vulnerable ecosystem requiring protection from the negative impacts of human activity. Reconciling these different perspectives is a challenging prospect for planners and policymakers.

TOWARDS ECOSYSTEM-BASED MANAGEMENT AND NATURE-BASED SOLUTIONS

It is, however, possible to point to ways forward based on examples of good practice and conceptual innovation. It is increasingly common for marine plants and policies to apply an Ecosystem-based Management (EBM) approach, with the intention of providing a systems-based framework for understanding and managing marine ecosystems and interactions between socio-economic activities and the ecosystem. Such an approach can facilitate the development an interdisciplinary science-led, evidence-based approach incorporating both natural and social science perspectives (Kabat et al 2012). Adaptive management approaches go one step further, calling for continuous adaptation of management measures to the dynamics inherent in complex ecosystems.

The EU Marine Strategy Framework Directive (MSFD) specifically calls for an adaptive management approach to take account of the dynamic nature of marine ecosystems (2008/56/EC). EBM and adaptive management approaches have the potential to deliver sustainable management solutions, based on best available integrated scientific knowledge. In practice, limitations become evident however, as it is recognised that scientific knowledge of the functioning of many marine ecosystem components and their dynamic interactions is limited and, perhaps more significantly, attention to cultural values and meanings is required to engage effectively with many coastal communities and stakeholder groups.

Scientists and practitioners working on the designation of marine protected areas in areas beyond national jurisdiction (marine areas beyond the boundaries of EEZs) have come to the conclusion that all ocean areas no matter how remote, have a human dimension which needs to be taken into account in the establishment and management of MPAs. They call for an understanding of the oceans as ‘peopled seascapes’. From such a perspective, marine spaces are understood to have different but, in some respects, comparable qualities to landscapes on land, recognising that they are of meaning and value to people and community groups in different ways. Recent debates on

the era of the Anthropocene have drawn attention to the ubiquitous and inescapable presence of human influence but also opened space for discussion on forms of positive intervention to improve natural values⁴ in the form of marine stewardship and ‘building with nature’.

A recent study by Ounanian et al (2020) documents how policy discourses at the North Sea regarding the decommissioning of oil and gas rigs have shifted over time from a ‘hands off the oceans’ conservation approach to a nature restoration ‘rigs to reefs’ perspective focussed on the conversion of oil and gas rigs into artificial reefs. A restoration perspective allows for the possibility of moving beyond the protection of existing ecosystems from external threats to the active restoration or construction of natural habitats and enhancement of natural values. As detailed below, Dutch marine policy forefronts a building with nature approach, focussed on active nature development. The Wadden Sea, a transboundary World Heritage Site, extending, from Esbjerg in Denmark, along the full-length of the North Sea coast of Germany to the Lauwersmeer in the Netherlands is characterised by contrasting, nationally-specific perspectives on nature conservation and protected area management, ranging from ‘hands off’ to active intervention (see Walsh 2019, 2020). In their study of shellfish management at the Dutch Wadden Sea,

4 The term ‘natural values’ is itself highly normative and includes intrinsic, instrumental and relational dimensions (see Chan et al 2016).

De Koning et al (2020) identify two distinct representations or narratives of the Wadden Sea. For mussel farmers, fisheries scientists and fisheries policy actors, the Wadden Sea is characterised as dynamic and productive, with periods of low and high productivity and food abundance. For a second group of actors, focused around conservation policy and practice, the Wadden Sea is characterised as rich in biodiversity and 'pristine' nature. In this second narrative, however, the richness of the ecosystem is understood in reference to its potential rather than its current state and (extractive) human activities are treated as disturbances.

CULTURAL VALUES AND PRIDE OF PLACE AT SEA

In another study, Berne (2019) examines and reflects on local opposition to a sustainable marine energy test site in Galway Bay, at the Atlantic coast of Ireland. The onshore station was located in An Spidéal, a small Irish-speaking coastal village. The test site itself was 18 km offshore. The project was managed by national government agencies. Despite all requirements for public consultation being fulfilled, the local community did not consider that their

views and concerns were adequately addressed within project. They voiced scepticism of what was perceived as a development imposed from 'outside'. The study found that members of the local community sought recognition for their sense of local identity and heritage as expressed through reference to the coastal landscape and the Irish language and called for the developers to gather local knowledge and 'get to know' the community. They wanted their 'pride of place' to be recognised in the planning process. It is likely that, if the local community was given a sense of joint ownership of the project, it would have been possible to reach mutually beneficial outcomes and allay their concerns regarding the offshore installation itself.

Brennan (2018) similarly documents local community opposition to designation of a marine protected area (MPA) off the coast of Barra, an Outer Hebrides island off the Western coast of Scotland. In this case also, community identity and sense of place influenced vocal opposition to the MPA designation on the part of some (not all) islanders. Traditional fishing, integral to the local culture and way of life was perceived as under threat through

the designation of a conservation area. They feared the Scottish Government's plans would lead to the island becoming a 'museum', where all interaction with the natural environment was highly restricted. In contrast their idea of Barra as a 'living island' was founded on a sense of stewardship or wise use of island and marine environment. Rather than constituting an abstract space on the map, the area of the proposed MPA designation was a site of traditional fishing grounds, local knowledge and collective memory, expressed through Gaelic place-names rich in local, place-specific meanings (also MacKinnon & Brennan 2012). Due to its sheltered location, it was an important nursery ground for fish and a training site for young fishers, learning the trade. In this case, the government agency Marine Scotland, made a decision to share management, leadership and responsibility with the local island community in an acknowledgement of the

need to manage marine resources in a way that respects local relationships with the marine environment and that this might be compatible with achieving biodiversity objectives. Both of the cases described above occurred in the absence of a broader marine spatial planning framework which may have aided contextualisation and potentially the reduction of conflict potential.

Narratives of productive and dynamic marine ecosystems, pure and pristine nature, or local pride of place at the coast reflect not only different stakeholder interests and policy priorities, but also different ideas about the relationship between society and the environment. Processes of collaborative and strategic spatial planning, as discussed below can play a critical role in shifting the frames of a policy debate and enabling the development of joint framing narratives, crossing sectoral divides.

Maritime Spatial Planning: Regulating Sea Uses and Producing Strategic Visions

Recent decades have witnessed an increase in economic activity at sea and increased competition for marine space. The marine is increasingly a space defined by multiple interests, competing claims and diverse values. In particular, the development of offshore wind energy, designation of marine protection areas and expansion of aquaculture place additional pressures on small-scale coastal fisheries. The marine is also a heterogeneous space, with substantial differences in the intensity and mix of activities found across European seas, from the Arctic and the Atlantic Oceans, to the Mediterranean and the North Seas. The sustainable development and protection of Europe's marine space requires strategic planning and integrative cross-sectoral, multi-stakeholder governance. Against this background, marine spatial planning (MSP) has emerged as a key policy instrument for integrated marine governance.

Following the EU Directive on MSP adopted in 2014, MSP is defined as a “a process by which the relevant Member State's authorities analyse and organise human activities in marine areas to achieve ecological, economic and social objectives”. It is a spatially explicit policy instrument focussed on managing the location and distribution of relevant activities across space. As a planning instrument, it also has a strong temporal dimension, a concern

for the planning, regulating and imagining the future of the marine environment. MSP bears many similarities to spatial (urban and regional) planning on land but marked differences may also be noted. MSP has evolved within a distinct marine policy context, has an ecosystem-based approach at its core and is underpinned by scientific data-gathering and analysis. The marine environment is, to a much greater degree than is the case on land, characterised by fluid movement and dynamic change across multiple time-scales. In their practical guide to MSP, first published in 2009, Charles Ehler & Fanny Douvre identified the following characteristics of effective MSP (Box 1):

- **Ecosystem-based:** balancing ecological, economic and social goals and objectives towards sustainable development;
- **Integrated:** across sectors and agencies and among layers of government;
- **Place-based or area-based;**
- **Adaptive:** capable of learning from experience and responding to changing conditions;
- **Strategic and anticipatory:** focussed on the long-term;
- **Participatory:** active involvement of stakeholders.

Box 1: Characteristics of effective MSP, adapted from Ehler & Douvre 2009, p. 18)

Significantly, they also observed that MSP does not lead to a 'one-time plan' but may be considered as a continuous, iterative process characterised by learning and adaptation. MSP is thus central to the implementation of adaptive, ecosystem-based marine governance. MSP as practised to date demonstrates a high degree of variability with the above characteristics featuring to varying extents depending on national contexts, prevailing planning traditions and policy priorities. More broadly, it is possible to distinguish between two distinct interpretations of the role of MSP. The primary task of MSP may be understood in terms of **sea-use regulation**; the regulation of activities across marine space by means of zoning and use designation. Sea-use regulation can provide a degree of certainty for economic actors and other interests and help to ensure consistency, coherence and compatibility among sectoral plans. Plans of this nature are often legally binding, while allowing for some

discretion in decision-making on individual proposals. This is, in practice, the most common approach.

MSP may, however, also perform a **strategic visioning** role, establishing a coherent policy framework for future decision-making, based on a future-oriented policy vision. Strategic vision statements are key to realising the cross-sectoral, integrative ambitions of MSP and may help to identify potential synergies and points of intersection across policy sectors. Both interpretations of MSP are relevant to its role in conflict management as this report will demonstrate in detail. Existing practice indicates that individual plans can rarely perform both roles simultaneously. Based on previous research and a review of the planning literature, it is furthermore possible to identify two distinct planning paradigms which have informed planning practices both on land and at sea since the 1960s (Table 1 below).

Dimensions	Technical paradigm	Communicative paradigm
Primary function of the planning process	Sea-use regulation via zoning	Strategic visioning, providing a framework for future decision-making
Accepted forms of knowledge	Dominance of technical scientific and professional forms of expertise. Reliance on standardised procedures and routines.	Openness towards multiple forms of expert and lay knowledge and the value of experience 'on the ground'.
Participating actors	Participation limited to formal state organisations. Consultation of external stakeholders where necessary to fill knowledge gaps.	Inclusive of a wide range of public and private sector stakeholders.
Role of the planner	Planner as technical expert	Planner as facilitator and moderator
Governance arrangements	Vertically-integrated hierarchical governance organised by sector.	Horizontal, cross-sectoral network governance
Legitimacy of decision-making	Legitimacy through expert knowledge, formal procedures and legal principles.	Legitimacy ensured through inclusion of relevant stakeholders, transparency of procedures and accountability through democratic processes.
Understanding of process and outcomes	Linear process of analysis and preparation followed by plan implementation and evaluation	Iterative process of strategy-making and project development focussed on providing a strategic frame for future decision-making.

Table 1: Spatial planning paradigms (adapted from Walsh 2019, p. 81).

Classic texts on planning theory dating from the 1970s portrayed planning as the ‘application of science to policy’ (Faludi 1973). Since the 1990s this technical focus on expertise and science-based policy-making has largely given way, in the course of a ‘communicative turn’ in planning practice to a new understanding of planning as a transdisciplinary process, involving multiple stakeholders and recognising diverse values, mindsets and perspectives. Rather than assuming stakeholder interests are pre-determined and fixed, a communicative approach works from the assumption that interests are negotiable and subject to change, as new perspectives emerge during the planning process. This emphasis on collaborative dialogue and negotiation notwithstanding, power relations and external constraints are acknowledged and recognised (e.g. Bresnihan 2019). Inspired by the European Spatial Development Perspective (European Commission 1999) strategic spatial planning approaches emerged in the first decade of this century, with spatial visions produced for a variety of regional, national and transboundary contexts. For Belgian planning scholar Louis Albrechts, strategic planning may be understood as policy processes that “shape and frame what a place

is and may become”. He stressed that spatial planning has the potential to foster ‘transformative practices’ with the capacity to challenge existing structural constraints on the basis of future visions of what places might become (Albrechts, 2010, p. 1116). Arguably, marine spatial plans should also be concerned with ‘place-making’ at sea, shaping how sea spaces develop through future-oriented transformative spatial strategies. In this way, MSP can act as a catalyst for change rather than performing a solely regulatory function. Whereas the characteristics outlined by Ehler & Douvre (2009) align with a communicative understanding of planning, MSP in practice has been largely informed by a technical planning paradigm with a primary focus on sea-use regulation. Innovative spatial visions for marine spaces, have however, also been produced in recent years, as detailed below in Section 4.2.

It will be evident from the above discussion that MSP represents one element in a wider governance landscape, including a wide range of public sector organisations, community groups and other stakeholder interests. Researchers interested in the management of common resources have developed the concept

of co-management to describe arrangements for the joint management of resources between the state and a community of resource users. Ideally, co-management arrangements involve an integrated socio-ecological systems perspective, inclusion of local, traditional and expert, scientific knowledge and are premised on collaborative working and power-sharing (e.g. Carlsson & Berkes 2005). In practice, co-management arrangements typically involve complex networks of diverse set of public sector, private

sector and civil society actors. As a consequence, any community-led management initiative must relate to, and engage with actors, stakeholders and processes at multiple levels of governance. The British Columbia case study (Section 4.3 below) provides an illustration of this. Strategic planning processes may play an important role in steering co-management networks. They are, however, inevitably one element competing for attention in a busy governance landscape.

Case Studies of Good Practice

In the following we present three case studies of good practice in MSP. The three case studies are very different and showcase key strengths in different respects. Together they demonstrate the potential of MSP as a strategic policy tool and the range of its application. The first case study area, located at the Southern Baltic Coast of the German state of Mecklenburg-Vorpommern represents a classic case of MSP as sea-use regulation embedded within a tradition of comprehensive, integrated spatial planning. The second case focussed on the Dutch North Sea exemplifies the strategic visioning role and potential of MSP. The third case, from the Pacific Coast of British Columbia reveals best practice in community-based, collaborative planning with explicit attention to cultural values in a pluralist legal context. Taken together, the three cases represent current best practice in MSP, illustrating its application and potential in diverse contexts. In each case, transferable lessons are identified and elaborated upon, drawing on both core strengths and possible weaknesses.

4.1 SEA-USE REGULATION AT THE SOUTHERN BALTIC COAST: THE CASE OF MECKLENBURG-VORPOMMERN

The German federal state of Mecklenburg-Vorpommern has included the coastal waters under its jurisdiction within its sta-

te-wide spatial planning framework, known as the Spatial Development Programme, since 2005. The current Spatial Development Programme dates from 2016 (SDP 2016, MEIL-MV 2016). The planning of the coastal waters follows an integrated coastal zone management approach (ICZM), defined as follows:

“ICZM is a dynamic process based on sustainability principles which serves to systematically coordinate all use claims and developments in the coastal zone, the transitional area between land and sea” (MEIL-MV 2016, p. 94, translation by the author).

ICZM is understood to provide an integrated cross-sectoral perspective, focussed on managing interdependencies between land and sea and overcoming narrow sectoral perspectives. The provisions of the SDP provide the legally-binding framework for ICZM, itself understood as an informal instrument for future planning measures, whereby the land and sea elements of the coastal zone are treated as a functional unit. This interpretation of ICZM is aligned with that formulated by the European Commission (EC 1999, EU 2002, see also Walsh 2019). In its justification for this approach, the SDP text remarks that the experience of previous years had shown that the ‘one-dimensional steering’ of existing uses (shipping, fisheries, coastal protection)

through sectoral planning laws was not sufficient to resolve conflicts at sea. Offshore wind energy (OW) together with stricter protected area regulations and increased tourism activity at sea are perceived as emerging sea use claims with potential for conflict if not carefully managed.

The SDP designates substantial areas as priority zones for offshore wind energy development (approximately 170 km²) (Figure 1). In these areas, wind energy development is given priority above all other actual or poten-

tial uses. Among the formal objectives of the plan is a commitment to secure the economic participation of coastal municipalities with respect to wind farms visible from their shores. This applies to municipalities located fully or partially within 15 km of the outer boundary of a windfarm. Further areas (15 km²) are designated with a conditional priority for wind energy, with a view towards securing sufficient space for wind farms in a longer-term perspective. In these areas, proposals for wind energy development may be weighed against other potential uses and given preferential treatment.

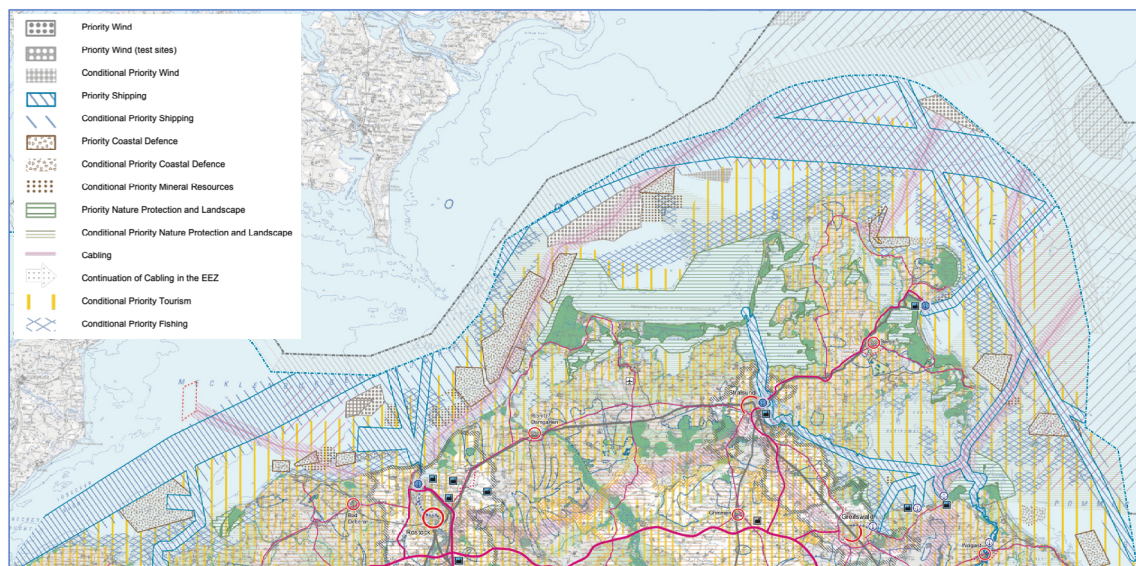


Figure 1: Mecklenburg-Vorpommern Spatial Development Programme 2016, Map and legend extract, (Source: MEIL-MV 2016), © Landesregierung Mecklenburg Vorpommern.

Fishing and shipping may be permitted in both priority and conditional priority areas so long as they do not interfere with wind energy developments. Co-location of marine activities is thus not excluded as a possibility. It is, however, not actively encouraged and priorities are designated on a sectoral basis. In addition, test areas for wind energy development are designated (13 km²). Wind energy development is excluded from other sea areas. In this way it is intended to achieve a concentration of OW within selected areas, in order to minimise potential conflicts with other uses. The selection of priority and conditional priority areas for OW followed a first differentiation between exclusion areas and potential areas. The criteria for the designation of exclusion areas included a 2 km buffer area around nature conservation areas (National Parks on the coast and bird protection areas) as well as priority areas for shipping and coastal protection. In addition, priority areas for communication and electricity cables are planned, in order to serve planned OW developments in the territorial waters and neighbouring Exclusive Economic Zone. In this way, it is hoped to achieve a bundling of cabling along selected corridors.

The sustainable development of coastal fisheries is included as a stated objective within

the SDP plan document. To this end, important fishing grounds and habitat areas are designated as conditional priority areas for fishing. Fishing is also permitted in extensive areas outside of these zones. Coastal fisheries are recognised as a characteristic feature and traditional source of income. Traditional small-scale fishing is to be protected as part of the cultural heritage of Mecklenburg-Vorpommern. The Greifswalder Bodden (a bay area, southeast of the island of Rügen) is noted to be of particular importance, as the main spawning ground for Western Baltic herring. The Greifswalder Bodden is part of a Biosphere Reserve (Southeast Rügen), established in 1990, with the aim of protecting traditional agricultural and fisheries production systems. Herring fishers in the area have applied for Marine Stewardship Council (MSC) certification but have not been successful to date as the fish stocks were deemed to be precarious and vulnerable to overfishing (Döring 2020).

TRANSFERABLE LESSONS

The Mecklenburg-Vorpommern SDP represents a good practice example of a marine spatial plan embedded within an **established, comprehensive system of planning** which has been extended from the land to the sea. The plan has a strong legal basis. **Zoning designations are legally binding.** In general,

the principal objective of the plan is the **orderly separation of individual uses** and spatial claims rather than the search for potential multi-use constellations. The plan is coordinated with relevant sectoral policy sectors and aims to achieve an **integrative perspective**, whereby **potential conflicts between sectoral objective may be identified** in advance and **situation-specific trade-offs** may be found, based on pre-determined objective criteria. In this way, it provides a degree of certainty for economic actors and other stakeholders, as well as a framework for cross-sectoral dialogue based on **ICZM principles**. The SDP is revised and updated approximately every 10 years. The first spatial plan (post-unification) was published in 1993, with subsequent revisions and updates in 2005 and 2016. Forward planning thus occurs in an **incremental manner**, with new planning statements building on previous plans.

Although primarily drawing on **professional expertise** and a **technical understanding** of planning public participation was facilitated through a **two-stage consultation process** and further informal discussion fora. The written submissions to the 2016 SDP indicate a wide spectrum of opinions and concerns articulated by individuals and stakeholder groups. A number of submissions expressed strong concerns

regarding a perceived industrialisation of the Baltic Sea, with a potentially negative impact on both tourism and the marine ecosystem. The extensive areas designated for offshore wind energy provided a focus for these broader concerns. Fisheries stakeholders criticised an apparent failure to designate (non-conditional) priority areas for fishing. The planning team responded that this was not possible due to a lack of sufficient and reliable data, a common problem in the incorporation of fisheries within MSP. Fishers may have been reluctant to share such sensitive data, for fear of losing access to existing fishing grounds. It is also possible, however, that alternative means of incorporating relevant information could have been employed to safeguard the most important, or most vulnerable fishing grounds (see Trouillet et al 2019, Said & Trouillet 2020). Other stakeholders (including some ENGOs) welcomed the measures adopted in the plan and in particular, the adoption (at least partially) of an ecosystem-based approach in relation to fisheries and marine protection areas.

The Mecklenburg-Vorpommern SDP borders on the German Exclusive Economic Zone (EEZ). This area is under the jurisdiction of the German Federal Government with the Federal Maritime and Hydrographic Agency (BSH),

in Hamburg. Reflecting the legalistic and technical planning tradition applied in both jurisdictions, **no common overarching spatial strategy** or policy statement for both the Baltic Sea EEZ and coastal waters has been published to date. Indeed, it could be argued that the SDP 2016 would benefit from the inclusion of an illustrative map of the wider southwest Baltic Sea context, in recognition of relevant developments beyond the plan boundary.

The Mecklenburg-Vorpommern SDP provides a **high level of detail** in its **regulation of uses** and spatial claims at sea. The text of the plan also includes **detailed explanatory statements** which make it possible for the non-expert reader to understand the **intention and rationale** behind individual planning objectives and use designations. The plan does not, however, provide a strategic vision of future potential. The targets for offshore wind energy, in particular, are ambitious and have transformative potential, but the plan is not set within a wider societal context.

4.2 A FUTURE VISION FOR THE DUTCH NORTH SEA

Planning policy for the Dutch North Sea is set out in a comprehensive policy statement entitled Policy Document on the North Sea 2016 – 2021 (MIE & MEA 2015), which in itself is an appendix to the National Water Plan and includes a legally-binding Maritime Spatial Plan (focussed on sea-use regulation) and long-term spatial vision (the North Sea 2050 Spatial Agenda). A follow-up regulatory plan is currently under preparation for the time period 2022-2030. A more overtly political document known as the North Sea Agreement was negotiated in 2019-2020, which sought to find agreement on sectoral strategies and priorities. In the following we focus, in particular, on the North Sea Spatial Agenda 2050 and the North Sea Agreement.

The North Sea Spatial Agenda 2050 (NSSA 2050, MvIeM, 2014) produced by the Dutch government in 2015 constitutes a future-oriented spatial vision rather than a legally binding regulatory plan. In this sense it is a strategic political document with a strong communicative, policy-framing character. It has an explicit future orientation, with a time horizon of 2050. The NSSA 2050 moreover recognises the value of powerful imagery and employs a series of innovative and conventional maps to communicate its key messages (Figures 2 and 3).

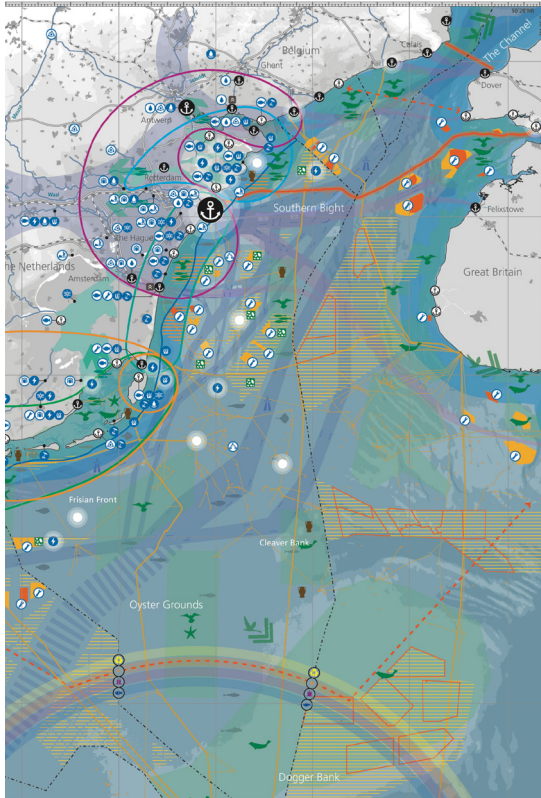


Figure 2: North Sea Spatial Agenda 2050: Spatial Developments and Opportunities (MIE & MEA, 2015)
(c) Dutch Ministry for Infrastructure and Water Management

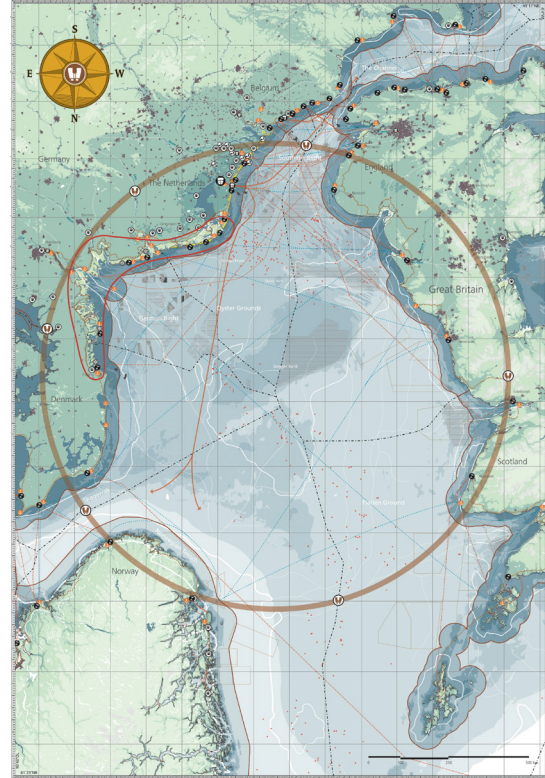


Figure 3: North Sea Spatial Agenda 2050: International map of land-sea interactions (MIE & MEA, 2015)

Deliberately upsetting established cartographic norms, the maps, through their south-north orientation, challenge the reader to re-examine the relationship between the North Sea and the land:

The North Sea 2050 Spatial Agenda has been created by looking together with stakeholders at the power and potential of the sea itself and putting that on the map. That is why the perspective of the North is chosen for the maps: you look ‘from’ the sea towards the land (MvleM, 2014, p. 5).

The maps of the NSSA 2020 thus go beyond the conventional task of illustrating existing and proposed uses and spatial claims at sea to focus attention towards thematic priorities and points of connection across geographical and policy boundaries. In doing so, it frames planning policy for the North Sea within a trans-boundary international context and pays explicit attention to land-sea interactions rather than viewing the land and sea as distinct policy domains (see also Walsh 2021). The strategic direction of the NSSA 2050 was informed by recommendations of the government-appointed Dutch Councils for the Environment and Infrastructure, formulated in a position paper entitled ‘A Sea of Opportunities’ (Councils for the Environment & Infrastructure, 2011). The councils advised the adoption of a proactive, development-oriented approach focused on ‘sustainable exploitation’ (p. 10).

The North Sea 2050 Spatial Agenda, in response, sought to bring together nature conservation and economic development concerns emphasizing points of synergy rather than potential tensions between conservation and development objectives. In particular, the natural ‘power’ of the marine environment was framed as providing the foundation for economic use of the sea:

A good environmental status is a precondition for human use of the sea. The transition task encompasses reinforcement of the intrinsic, natural power of the sea, from both an ecological and an economic perspective. There are opportunities to create a robust, resilient North Sea by building with nature at sea. (MIE & MEA, 2015, p. 29).

Through the careful use of language, nature protection and economic development are brought together and viewed as mutually compatible rather than in tension with another. Under the heading of ‘building with nature’, the strategy document lists opportunities for working with nature to achieve sustainable development goals. Examples include soft forms of coastal defence utilising sand recovered from the North Sea and the cultivation of seaweed. It is argued that it is possible to go beyond conserving the marine ecosystem as it is, that active intervention through economic use of the sea can make it cleaner and healthier. Further research is called for to investigate ‘the

contribution of...windfarms to the recovery of biodiversity'. Much emphasis is placed on the relationship between North Sea nature and the sea as a source of food supply: "A more precise look at the North Sea as a system shows that the themes nature and food supply show much coherence and mutual interdependence" (MvleM 2014, 18). It is stated that both themes benefit from a healthy ecosystem – a 'common denominator' which can help to find mutually beneficial or acceptable solutions. Fishers are recognised as a source of 'specific and historical knowledge' which may inform conservation tasks. In the 2016-2021 Policy Document on the North Sea, the future of North Sea fishing is characterised in terms of an ongoing transition to sustainable and responsible practices and an anticipated downsizing of the fishing fleet. Aquaculture (cultivation of fish, crustaceans and shellfish) and mariculture (cultivation of marine plants such as algae and seaweed) in contrast are viewed as on the rise with increasing opportunities emerging (MIE & MEA 2015, p. 55).

The multifunctional use of marine space constitutes a core strategic principle of the North Sea 2050 Spatial Agenda. This implies combining multiple uses at single locations or in close proximity, in order to achieve the maximum benefit from the limited space available. In some cases, multi-use may be designed and managed around common infrastructure platforms (Stuiver et al 2016). Single use zoning in the Dutch North Sea is envisaged only where

the vulnerability of the marine environment requires this. Users are required to consider interactions with other users from an early stage in the planning process. Interdisciplinary research projects have actively investigated the potential for multi-use in various forms and constellations. The combination of aquaculture and mariculture with wind farm development has received particular attention. Studies have, for example, shown that the hard surfaces provided by the foundations of wind farm structures (as is the case with other manmade structures at sea) are often sites of increased biodiversity and may be suitable for the cultivation of oysters or seaweed (e.g. Stuiver et al 2016, Kamermans 2018, van den Burg et al 2020). The strong statements of policy support for multi-use at the Dutch North Sea notwithstanding, the expectation has been that business actors will initiate and lead in the development of individual sites. The offshore wind industry, has however, demonstrated reluctance to participate in such projects and economic, legal, safety and technical challenges and concerns remain (Abhinav et al 2020, van Hoof et al 2020, van den Burg et al 2020).

In 2019, a North Sea Dialogues process was initiated with the objective of seeking agreement among stakeholders from wind energy, fisheries and nature conservation on a future vision for the North Sea. The North Sea Dialogues were led by an independent chairperson and their staff, appointed by an independent council of the Ministry for Infrastructure and

Water Management (Rijkswaterstaat) and received cross-sectoral input from the Ministry for Agriculture, Nature and Food Quality as well as the Ministry for Economic Affairs and Climate Policy. This process built on the planning, policy and research initiatives described above and was focussed more specifically on negotiating a political agreement among selected key stakeholders. The North Sea Agreement document was subsequently published in June 2020 and laid before the Dutch parliament for consideration. The text reaffirmed commitments to an ambitious expansion of offshore wind, to a multi-use approach to the utilisation of marine space and to a transition to sustainable marine-based food production, including fisheries. The North Sea Agreement was, however, met with major objections from fishing industry organisations. In a joint position paper fishing organisations (including small-scale fisheries) set out a common perspective. The document entitled “Space for Fisheries in a North Sea full of Windmills” called for no further loss of fishing grounds due to wind farm development and protected area designations. (PO Delta Zuid et al 2019). Provisions were included for a transition fund to finance additional efforts required to meet specific transition objectives in the three sectoral areas. There has also been agreement to continue the North Sea Dialogues on a permanent basis. Detailed implications for the fisheries sector remained, however, unclear.

Reference was made to a sectoral visioning document for sustainable cutter fisheries⁵ prepared in parallel to the North Sea Agreement.

The sectoral vision outlined a set of core values, pertaining to the particularity and societal value of sustainable cutter fisheries, in the context of its 2030 vision (Box 2). The statement of values provides a clear picture of the multiple dimensions of cutter in terms of their contribution to environmental, economic and cultural sustainability. The Dutch cutter fisheries clearly need to be understood in the context of their socio-economic role within coastal communities as well as their impact on the marine environment and relationships with other activities at sea. The Dutch fisheries sector is, however, highly fragmented with different interests and priorities according to the scale of operations, preferred fishing techniques and targeted fish species as well as regional specificities. These internal differences make it difficult to achieve agreement, particularly with other sectors and, as noted above, the fisheries representatives have not signed the North Sea Agreement.

In general, it may be remarked that engagement with fisheries in MSP is challenging, in part due to a perception that other sectors, including MRE and aquaculture, are likely to gain more from the development of a blue economy. Agreements reached with respect

5 The term cutter fisheries refers to vessels with active trawlgear, including beam trawlers (some working with electric pulse techniques), eurocutters, shrimp vessels and twinrig boats (Quirijn et al 2019).

1. **Healthy, good and sustainable food:** Cutter fishing contributes to a healthy source of food, without artificial inputs to the system (in contrast to conventional agriculture). If stocks are well-managed it is a renewable resource.
2. **Appreciation for craftsmanship:** Getting food out of the sea is a craft-based profession. Knowledge about this (currents, depths, fish behaviour, meteorology and seasons) is handed down from generation to generation. Fishers have a unique ability to carry out their craftsmanship in ever-changing natural and social conditions. Fishing families must feel free to be openly proud of the fishing profession and the (family) business with which they are so closely associated.
3. **Perspective for family businesses in small and medium-sized enterprises (SMEs):** The trend towards economies of scale in the primary sector is at odds with society's desire to embrace family businesses and small-scale businesses and to maintain diversity in scale. Opportunities to hand the business over to future generations must be secured. Small-scale fishing businesses are often drivers of innovation and are important pillars of fishing communities with their social cohesion, identity and image.
4. **A robust fish cluster:** There is a strong mutual dependency between cutter fishing and the onshore fish cluster: chain partners in auctions, logistics, trade and processing industry, fisheries schools, supply and service industries (maritime companies and fisheries cooperatives), and knowledge infrastructure (knowledge institutions, consultancies). The future prospects for the cutter sector are inextricably linked to a robust fish cluster as a whole.
5. **Vibrant fishing communities:** The Netherlands values its fishing communities, where people work and live in close connection with an active fish cluster. The cutter fishing plays a crucial role in employment and the livability of areas. If the fishing industry is doing well, its immediate surroundings - service industries, trade and processing industry, retail trade, catering industry - also benefit. The fishing industry can attract young people from a variety of backgrounds, skills and aspirations, who give a new impetus to a community.
6. **The Netherlands as an exporter of knowledge and innovation from cooperation:** the Netherlands not only exports our fish, but is also a leader in Europe in the export of knowledge development and innovation in fisheries. Foreign institutes learn from the Dutch model of research cooperation. The Netherlands is in a leadership position: a partner that shares knowledge and takes colleagues in other countries with it. We will continue to cherish and strengthen our culture in which dialogue and cooperation is the primary approach in order to achieve progress.

Box 2: Core Values for Sustainable Cutter Fisheries, adapted from Burger 2019, 13-14, translated from Dutch)

to individual fishing grounds or wind energy developments can easily lead to displacement of fishing activity elsewhere, creating tensions and increasing competition within the sector. The North Sea Dialogues process may nevertheless be viewed as a step forward in terms of providing a voice for the sector within these strategic policy discussions and more specifically in terms of opening the door for greater recognition of the multiple social, economic and cultural dimensions of sustainable fisheries. Future policy initiatives will need to pay greater attention to the diversity of the fisheries sector.

TRANSFERABLE LESSONS

The Dutch context is characterised by a complex marine governance landscape with a high density of interrelated policy-making processes taking place simultaneously or in quick succession. These processes are typically **strategic, future oriented and cross-sectoral**. In addition to government ministries and agencies, **multiple, diverse stakeholder groups** are routinely engaged in **network governance structures**. Key policy-relevant scientific inputs are provided by research institutes such as Wageningen University and Research.

The NSSA 2050 represents an innovative case of strategic spatial planning at sea with a

strong emphasis on **cross-sectoral agenda-setting**. It sets out the building blocks for a future vision of the North Sea, based on **sustainable economic development and 'building with nature'**. In doing so, it deliberately highlights points of commonality and synergies between sectoral groups rather than tensions or conflicts. The NSSA 2050 **maps challenge readers** to sit up and take notice, to **view the North Sea from a new perspective**, to move beyond the traditional metropolitan, terrestrial focus of policy-making. In doing so they, harness the **power of visual imagery** to convey the message that the **North Sea is not peripheral but central** to the future of the Netherlands as a 'maritime nation'. In the context of a busy governance landscape, this approach has the **potential to capture attention**. The NSSA 2050 presents an explicitly international transboundary spatial vision, effectively an **invitation to enhanced cross-border cooperation and joint agenda-setting across the North Sea**. Transboundary cooperation in MSP is not unusual but it is striking that the NSSA 2050 maps do not stop at the Dutch borders but provide a **broader North Sea perspective**.

In their emphasis on the **multifunctional use of marine space**, the NSSA 2050 and North Sea Agreement place a concept at the core of Dutch maritime policy which offers the promi-

se of a solution to existing challenges of spatial competition and congestion in an increasingly crowded marine environment. This approach draws on Dutch experience in urban planning for the high-density Randstad area and represents an **ambitious strategy**. It is, however, also a **risky strategy as work to reduce legal, technical and socio-economic challenges** to the practical implementation of multi-use is still ongoing. It is based on the conviction that sectoral interests will need to work more closely together in future years to **ensure a more efficient use of marine space** and the realisation of both economic and environmental objectives for the North Sea.

The North Sea Dialogues and Agreement represent an attempt to achieve agreed mutually beneficial outcomes across the wind energy, fisheries and nature conservation sectors. The current and future use of the North Sea continues to be contested, however, with diverging sectoral visions and values. It is evident that the fisheries sector in the Netherlands, as elsewhere in Europe, faces significant challenges. It is undergoing a **period of restructuring** with as yet, uncertain outcomes. It is possible that a **shift from fishing to aquaculture and mariculture** as the primary sources of maritime food production may occur in coming decades. The refusal of the fisheries organisations to sign up to the North Sea Agreement reflects the **internal heterogeneity within the fisheries sector** and an enduring perception

that fisheries stand to lose out from the current and planned intensification of the economic use of the sea.

4.3 COMMUNITY-BASED MARINE SPATIAL PLANNING IN BRITISH COLUMBIA

Since 2007, First Nation communities, at the North Pacific Coast of British Columbia, Canada, have engaged in processes of multi-level marine spatial planning. Through this means they sought to ensure that indigenous rights and values would be a respected and incorporated within provincial and federal marine planning initiatives. The Northern Shelf Bio-region extends approximately two thirds of the length of the Canadian Pacific coast, from the north of Vancouver Island, to the border with Alaska, covering an area of approximately 102,000 km² (Figure 4 below). The coastal region is home to seventeen First Nation communities who assert aboriginal rights over areas of land and sea within their traditional territories. These territories, are in places non-contiguous and may overlap with each other. These legal rights date from the pre-colonial era and are in many cases not fully reconciled with the jurisdictional authority of the provincial government of British Columbia and the Canadian federal government (Diggon et al 2020a, b). Whereas outdoor tourism is the largest economic sector within the region, a number of the smaller First Nations communities are dependent on seasonal small-scale

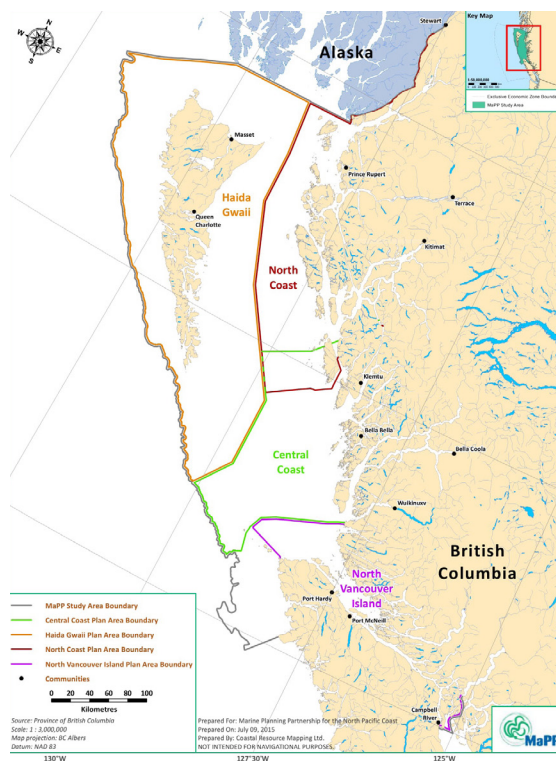


Figure 4: MaPP Geographical Context and Sub-regional Boundaries, Marine Planning Partnership Initiative 2016.

fishing and inshore seafood harvesting as a primary source of food. In addition, both indigenous and non-indigenous communities are engaged in small-scale commercial fishing. This complex cultural and legal context requires governance processes centred on negotiated collaborative planning, co-design and co-management on a government to government basis. From 2011, the First Nations and provincial government have worked together through the Marine Planning Partnership for the North Pacific Coast (MaPP).

Working within a multi-scalar nested framework, community-based plans were first developed within each of the traditional territories which subsequently provided the basis for sub-regional and regional planning. Four marine sub-regions were identified, the boundaries of which were aligned to reflect, as far as possible 'logical alignments geographically, politically, and socio-economically' (Figure 4 above, Diggon et al 2020a). Planning at the level of First Nations traditional territories was supported by a Community Coordinator and a marine planning community including seafood harvesters, commercial fishers, young people, elected representatives, elders and hereditary leaders. The gathering and documentation of traditional ecological knowledge, was a key element of this process. On this basis, ecologically and culturally significant areas were identified and mapped, as well as areas of economic potential or possible conflict. The community-based decentralised approach, working 'from the Nation 'out' helped to allay concerns regarding the storage and dissemination of sensitive local traditional knowledge. In a second phase, processes of harmonisation were undertaken at the sub-regional scale, a prerequisite for subsequent engagement with the provincial government. Here also, the decentralised approach allowed for flexibility and resulted in a plurality of distinct approaches to harmonisation. On the North Coast, harmonisation was limited to an a-spatial plan, detailing common goals, objectives and strategies

while maintaining individual Nation-specific spatial plans. In other cases, a joint spatial plan was also possible, the outcome of negotiated agreements focussed on managing trade-offs and working out compromises via a common analytical framework.

The MaPP initiative has employed an explicit marine Ecosystem-Based Management (EBM) framework, developed collaboratively as part of the related Pacific North Coast Integrated Management Area (PNCIMA) plan process.

EBM is defined as an “adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities” (Marine Planning Partnership Initiative 2016, p. 7). It is understood to be consistent with the holistic and integrated management approach to resource management practiced by the First Nations over a period of thousands of years. Box 3 below outlines EBM principles and assumptions as defined and operationalized in the MaPP context.

Ecosystem-Based Management Principles

EBM:

- Seeks to ensure ecological integrity
- Includes human well-being
- Is precautionary
- Is adaptive
- Includes assessment of cumulative impacts
- Is equitable, collaborative, inclusive and participatory
- Respects indigenous rights, titles and treaty rights
- Is area-based and integrated
- Is based on science and on wise counsel

EBM Assumptions

1. Ecosystem goods and service underlie and support human societies and economies
2. Humans and their communities are part of ecosystems, and they derive social, cultural and

economic value from marine ecosystems goods and services

3. Human activities have many direct and indirect effects on marine ecosystems
4. EBM informs the management of human activities
5. Marine ecosystems exist on multiple spatial and temporal scales and are interconnected
6. Marine ecosystems are dynamic and subject to ongoing and at times unpredictable change
7. Marine ecosystem states have limits to their capacity to absorb and recover from impacts
8. Human understanding of marine ecosystems is limited
9. Humans prefer some ecosystem states more than others
10. Humans can manage some drivers of change better than others and can adjust or respond to changes better at the scale of MaPP planning

Box 3: EBM Principles and Assumptions (Marine Planning Partnership Initiative 2016, p. 7).

The sub-regional plans apply a common zoning framework with space allocated to three types of zones as follows:

1. **General Management Zone (GMZ):** In this area, multiple uses and activities can be accommodated. It covers the highest proportion (62%) of the total MaPP region.
2. **Special Management Zone (SMZ):** Space is designated for high priority and high potential marine uses. Examples include zones of cultural value, zones for renewable energy and zones for aquaculture.
3. **Protection Management Zones: (PMZ):** Space is designated for their biodiversity value and representativeness.

The PMZs are further sub-divided according to International Union for the Conservation of Nature (IUCN) categories of protected area, with extensive areas designated as IUCN Category IV, designed to protect particular species or habitats. In total, 30% of the MaPP region is accounted for existing or proposed MPAs (14%) or PMZs (16%).

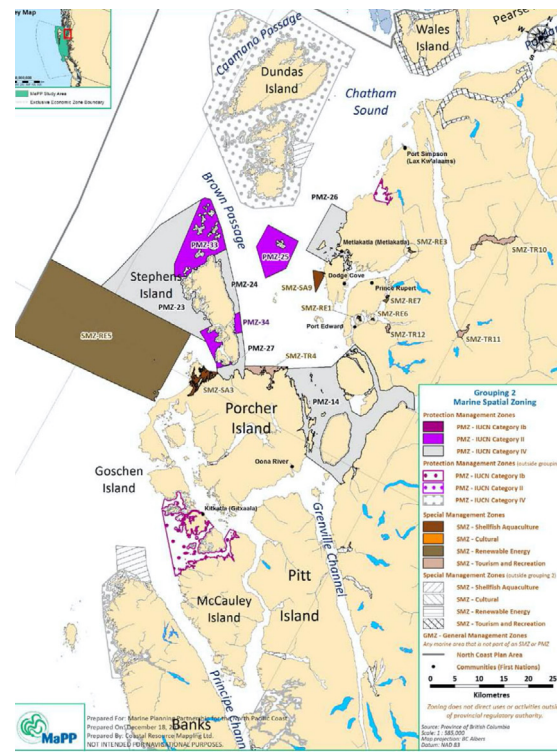


Figure 5: North Coast Sub-Regional Plan (Grouping 2), North Coast-Skeena First Nations Stewardship Society & Province of British Columbia 2015.

A large-scale wind farm (Naikun OW Project) is under development in the North Coast sub-region, with the first plans dating back more than 10 years. It is located in shallow

waters off the northeast coast of the island of Haida Gwaii in Hecate Strait and expected to produce 400 to 600 MW of electricity. Extensive consultation has occurred with the neighbouring First Nations communities, who stand to benefit directly through their connection to a secure, clean energy supply. Within the North Coast Sub-regional plan (Figure 5), the area in question is designated as SMZ. Adjacent areas to the North and West are designated as PMZs (IUCN categories II and IV). Stated objectives within the plan include the encouragement of “meaningful involvement of First Nations and local communities in marine and offshore wind renewable energy opportunities” and the mitigation of “the impacts of renewable energy project activities on marine ecosystems, First Nations cultural values and other users”. (North Coast-Skeena First Nations Stewardship Society & Province of British Columbia 2015, p. 50-51).

Following the development of a collaborative draft plan with the provincial government of British Columbia extensive consultation with sectoral stakeholders such as tourism, commercial fishing and energy production and non-indigenous community groups took place. The sub-regional plans were adopted and published

in final form in 2015. A Regional Action Framework and MaPP Implementation Strategy both followed in 2016, detailing agreed actions for implementation at the regional scale, five-year priorities and monitoring procedures (Marine Planning Partnership Initiative 2016). The MaPP laid the foundation for further initiatives including a Pacific North Coast Integrated Management Area Plan (2017) which provides a strategic policy framework for a wider range of policy areas and importantly includes the Canadian federal government in addition to British Columbia and the First Nations. An ambitious Marine Protected Area Network for the Northern Shelf Bioregion is due to be finalised in mid-2021, similarly based on principles of collaborative, ecosystem-based management and extensive stakeholder engagement. The First Nations are particularly interested in achieving long-term conservation across the region while maintaining sustainably managed access, fishing and harvesting rights for coastal indigenous groups within their traditional territories.

TRANSFERABLE LESSONS

The core strengths of the Marine Planning Partnership lie in its integration of community interests, lay traditional knowledge and local

cultural values through an inclusive collaborative process. Particularly remarkable in this case is the integration of local community-based process with formal policy requirements at other levels of government. The specificities of the First Nations' relationship with the Canadian State and provincial government are not replicated in Europe. The principles of community engagement demonstrated in this case do, however, transfer and may serve to inform practices of MSP for European seas, particularly where issues of cultural association with the sea and the coast are relevant.

The MaPP governance framework was founded on **principles of co-leadership and equal participation** of First Nation communities and their representative organisations and the provincial government. All **decisions about plan content, design, outputs, administration, technical planning, expenditure, external engagement, and communications** were made in a spirit of consensus between partner First Nations and provincial government representatives. A co-led approach allowed for the identification of a shared vision for management of coastal and marine values, and ensured that indigenous rights to manage and harvest resources on the water and the coast were res-

pected and protected. Where conflicts between the partners did arise, solutions were sought through a **pre-defined conflict resolution process**. Where agreement was not possible, it was possible **to agree to disagree** and to revisit issues at a later date so as not to delay the planning process (Diggon et al 2020b). The multi-level, government to government approach adopted in British Columbia made it possible to move **beyond a traditional, hierarchical relationship** between the provincial and 'local' levels of government.

The multi-level governance framework also allowed for a **fine balance between consistency and flexibility** in the production of sub-regional plans. Each plan was **adapted to local circumstances, challenges and opportunities** with a different range of interests represented on each stakeholder advisory committee. Different approaches were adopted to the harmonisation of community plans to produce joint plans at the sub-regional scale. In a further example, agreement on the boundary delineation between two sub-regions was difficult to achieve and the flexibility of the process allowed for the partners to agree to a spatial overlap between the two sub-regions.

Transboundary coherence and coordination were ensured through the work of sub-regional technical advisors and communicated through cross-references within the individual planning documents (Diggon et al 2020b). The preparation of regional marine plans in Scotland has similarly allowed for a degree of **governance experimentation and adaptation** to local circumstances. In place of a one-size fits all approach for all Scottish marine regions, responsibility for the development of regional marine plans has been delegated to the Marine Planning Partnerships, with the intention of allowing more local ownership and decision-making. This is particularly relevant in the case of the Shetlands and Orkney islands

where the island context and distance to the mainland have a substantial influence on both plan content and process (Greenhill 2020). The MaPP case study demonstrates the importance of both **governance design** and what might be termed **process outcomes**. In addition to the physical planning outputs, the process served to build **collaborative decision-making capacity**, **foster cross-community trust** and link community goals and priorities to policy objectives and imperatives at higher levels of government. It also provided a solid foundation for subsequent planning efforts including the creation of an ambitious MPA network.

Summary

Conclusions and Recommendations

This study aimed to identify best and good practice for models of Marine Spatial Planning that can be pursued as opportunities to showcase co-operation between stakeholders, where the outcome is mutually beneficial to fishers, renewable energy production, and marine protection. On the basis of a review of current practices in marine spatial planning regimes across the EU and beyond it has been possible to identify cases of good practice in sea-use regulation, stakeholder engagement and community-led planning which taken together can inform the development of more collaborative forms of MSP at national, regional and local scales across Europe.

A previous study commissioned by the PECH Committee of the European Parliament recently concluded that “despite the increasing acceptance of co-existence of marine sectors and its explicit promotion by the MSP Directive... real world examples still are scarce and refer mainly to pilot projects” (Stelztenmüller et al 2020, p. 39). This study corroborates this finding. The ‘co-existence’ of marine sectors, in the sense of the co-location of multiple uses through multi-use platforms or similar arrangements is indeed rare and substantial challenges remain before such technical solutions become economically viable and attractive to all concerned parties. The marine continues to represent a

highly dynamic environment with competing interests and spatial claims which are difficult to reconcile. MSP processes are thus more than a technical exercise but inherently political. Greater attention is required to the worldviews of individual stakeholder groups and the diversity of perceptions of marine space, to produce common visions which transcend rather than dismiss competing narratives of ‘industrialised seas’, ‘biodiverse but threatened ecosystems’ or ‘peopled seascapes’.

This study highlights the potential of MSP to facilitate collaborative, inclusive, cross-sectoral management processes where both technical and socio-economic solutions are sought to the challenges and conflicts emerging from the intensification of human activity at sea. The examples of good practice presented in this study, demonstrate the versatility and adaptive capacity of MSP, understood as a policy process grounded in the specificities of diverse regional and socio-cultural contexts. Specific transferable lessons from each case study are detailed in Chapter 4 above. Set out below are principles for strategic, collaborative and community-based MSP, formulated with specific reference to its capacity for conflict resolution and mitigation between the competing interests of renewable energy, fisheries and nature protection.

MSP Best Practice Principles

1. MSP provides an opportunity for the better **management of human activity at sea**, bringing together **multiple stakeholder interests and perspectives** pertinent to the **sustainable development and protection of the marine environment**.
2. MSP is informed by principles of **ecosystem-based, adaptive management**, ensuring the capacity to adapt to **dynamic social and environmental changes**.
3. MSP processes and plans may serve distinct **purposes**. It is possible to distinguish between a **sea-use orientation** and a **strategic, communicative orientation**. Both have their strengths and shortcomings and should be **viewed as complementary**. **Formal regulatory plans and strategic policy statements** may be prepared in **parallel or sequentially**.
4. As the Mecklenburg-Vorpommern case study exemplifies, a marine spatial plan with a **strong regulatory orientation** provides **legal certainty and clarity** with respect to the future use of marine space, based on a **technical assessment of compatibility and capacity**.
5. As the Dutch North Sea case study demonstrates, marine spatial plans with a **strategic, communicative orientation** can serve an **agenda-setting function**, setting out **strategic priorities and development principles**, over a medium to long-term timescale. They can **set the parameters** for future decision-making and help to **reframe existing policy discourses**.
6. Strategic MSP processes can **facilitate societal transformation** through a process of **future-oriented spatial visioning**. Conflict potential may be ameliorated by setting out **current development trends and policy objectives**, contextualised within the framework of a longer-term strategy. Conflicts may, however, also **become more visible**, brought out into the open through a clear prioritisation of sectoral objectives and require **intensive political negotiation**.
7. MSP serves to place marine policy within a **spatial context**. Best practice suggests the importance of moving **beyond a simple map-based categorisation** of individual maritime activities and uses to address **connectivities across space**, whether at the **land-sea interface or crossing jurisdictional boundaries**. Innovative mapping techniques can foster awareness of these connectivities and the relevance of an **integrated ecosystem-based perspective**.
8. The British Columbia case study demonstrates that **community-led collaborative marine spatial planning** is **possible and practicable**. The case study indicates the importance of **inclusive governance frameworks** and that the full potential of community-based approaches is best realised through **coordinated and sustained engagement with policy processes** at other levels of government.

9. Relations of **trust, partnership and co-ownership** are the building blocks for successful community-based collaborative management. The **skillsets of marine planners** may need to be expanded to reflect a shift in the role of the planner from technical analyst to **facilitator, mediator and integration expert**.
10. Processes of marine spatial planning can and should address **cultural values and meanings**, drawing on both **lay and expert forms of knowledge**. Acknowledging the cultural contribution and value of **small-scale fishing**, for example, and developing policies accordingly may help to address the challenges faced by fishing communities and **reduce conflict potential**. Attention to cultural values implies recognising that coastal and marine spaces and places may be sites of **local and regional identity, collective memory and cultural heritage**, in ways that are not immediately apparent from an abstract zoning map.
11. The majority of marine spatial plans produced to date are large scale covering the full extent of national jurisdictions (territorial waters and/or EEZs) or large maritime regions. There is an evident need for **smaller-scale plans** in order to **realise substantive engagement with coastal communities**, achieve a **greater alignment with land-based local and regional plans** and find mutually acceptable solutions to individual sites of conflict or tension.
12. Conflicts in MSP, if managed carefully and fairly may become **opportunities for productive discussion and debate on alternative scenarios for the management** of the marine environment as a common resource, exposing **unresolved tensions and contradictions** between sectoral policy objectives.

REFERENCES

- Abhinav, K.A., Collu, M., Benjamins, S. et al 2020 Offshore multi-purpose platforms for a Blue Growth: A technological, environmental and socio-economic review, *Science of The Total Environment*, 734, 138256.
- Albrechts L. 2010 More of the Same is Not Enough! How Could Strategic Spatial Planning Be Instrumental in Dealing with the Challenges Ahead?, *Environment and Planning B: Planning and Design*, 37, 6, 1115-1127.
- Berne, S., McElduff, L., & Ritchie, H. 2019 Mortas ciné and the consultation problem: a review of social acceptance at the An Spidéál Marine and Renewable Energy Demonstration Site, Pleanail, *Journal of the Irish Planning Institute*, 76-105.
- Brennan, R. E. 2018 The conservation “myths” we live by: Reimagining human-nature relationships within the Scottish marine policy context. *Area*, 50, 159–168.
- Brent, Z. W., Barbesgaard, M. & Pedersen, 2018, *The Blue Fix: Unmasking the politics behind the promise of blue growth*, Amsterdam: Transnational Institute.
- Bresnihan, P. (2019) Desk Study on Public Engagement in Water Governance Prepared for An Fóram Uisce, Nenagh: An Fóram Uisce, <https://thewaterforum.ie/publications-category/reports-and-observations/>, accessed 31.12.2020.
- Burger, A. 2019 Duurzame kottvisserij op de Noordzee: Een advies aan de minister van Landbouw, Natuur en Voedselkwaliteit, <https://www.tweedekamer.nl/kamerstukken/detail?id=2019Z24706&-did=2019D50947>, accessed 14.12.2020.
- Carlsson, L. & Berkes, F. 2005 Co-management: concepts and methodological implications, *Journal of Environmental Management* 75, 65–76.
- Chan K, Balvanera P, Benessaiah K, Chapman M, Diaz S, Gomez-Baggethun E, Gould R. K., Hannahs N, Jax K, Klain S. C. et al 2016 Why protect nature? Rethinking values and the environment. *Proceedings of the National Academy of Science*, 113:1462-1465.
- Councils for Environment & Infrastructure. (2011). *A sea of opportunity: Strengthening the North Sea's significance to society*. The Hague: Councils for Environment & Infrastructure. Retrieved from <https://en.rli.nl/publications/2011/advice/a-sea-of-opportunity>, accessed 14.12.2020.

De Koning, N., Steins, N. A. & Toonen, H. M. 2020 Struggling over shellfish: How diverging perceptions of marine nature distort deliberative governance, *Ocean & Coastal Management*, 198, 105384.

Diggon, S., Bones, J., Short, C. J., Smith, J. L., Dickinson, M., Wozniak, K., Topelko, K., Pawluk, K. A. 2020b The Marine Plan Partnership for the North Pacific Coast – MaPP: A collaborative and co-led marine planning process in British Columbia, *Marine Policy*, Article in Press.

Diggon, S., Butler, C., Heidt, A., Bones, J., Jones, R., & Outhet, C. 2020a The Marine Plan Partnership: Indigenous community-based marine spatial planning, *Marine Policy*, Article in Press.

Döring, R., Berkenhagen, J., Hentsch, S., & Kraus, G. 2020 Small-Scale Fisheries in Germany: A Disappearing Profession? In Pascual-Fernández, Pita, C., J. J. & Bavinck M. (eds) *Small-Scale Fisheries in Europe: Status, Resilience and Governance*, Springer Nature, 483-502.

Dureuil, M., Boerder, K., Burnett, K. A., Froese, R. & Worm, B. 2019 Elevated trawling inside protected areas undermines conservation outcomes in a global fishing hot spot, *Science*, 362, 1403–1407.

Ehler & Douvre 2009 Marine spatial planning: A Step-by-Step Approach toward Ecosystem-based Management, UNESCO International Oceanographic Commission, <http://msp.ioc-unesco.org/msp-guides/msp-step-by-step-approach/>, accessed 14.12.2020.

European Commission 1999 European Spatial Development Perspective: Towards Balanced and Sustainable Development of the Territory of the EU, Luxembourg, Office for Official Publications of the European Communities.

European Commission 1999 Towards a European Integrated Coastal Zone Management (ICZM) Strategy: General Principles and Policy Options: a Reflection Paper. European Commission, Brussels.

European Commission 2012 Blue Growth opportunities for marine and maritime sustainable growth, COM/2012/494, https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/body/com_2012_494_en.pdf, accessed 14.12.2020.

European Commission 2019 The European Green Deal, COM/2019/640, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588580774040&uri=CELEX:52019DC0640>, accessed 10.12.2020

European Commission 2020a An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future, COM/2020/741, https://ec.europa.eu/energy/sites/ener/files/offshore_renewable_energy_strategy.pdf, accessed 10.12.2020

European Commission 2020b Blue Indicators Tool, https://blueindicators.ec.europa.eu/access-online-dashboard_en, accessed 10.12.2020.

European Commission 2020c A new approach to the Atlantic maritime strategy – Atlantic action plan 2.0: An updated action plan for a sustainable, resilient and competitive blue economy in the European Union Atlantic area, COM /2020/329, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0329>, accessed 31.12.2020.

European Commission 2020d EU Biodiversity Strategy for 2030: Bringing nature back into our lives, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0380>, accessed 10.12.2020.

European Environment Agency 2018 Marine Protected Areas, <https://www.eea.europa.eu/themes/water/europes-seas-and-coasts/assessments/marine-protected-areas>, accessed 10.12.2020.

European Union 2002 Recommendation of the European Parliament and of the Council of 30 May 2002 Concerning the Implementation of Integrated Coastal Zone Management in Europe (2002/413/EC). Off. J. Eur. Commun. 2002, 24–27 OJ L148 06.06.2002

Fitzpatrick, M., Brennan, R. & Jackson, E. 2020 From Protest to Participation: Learning from Experience in Irish Inshore Fisheries Management, In Pascual-Fernández, Pita, C., J. J. & Bavinck M. (eds) *Small-Scale Fisheries in Europe: Status, Resilience and Governance*, Springer Nature, 307–326.

Faludi, A. 1973 *Planning Theory*, Pergamon Press.

Gimpel, A. Stelzenmüller, V., Grote, B., Buck, B. H., Floeter, J., Núñez-Riboni, I., Pogoda, B., Temming, A. 2015 A GIS modelling framework to evaluate marine spatial planning scenarios: Co-location of offshore wind farms and aquaculture in the German EEZ. *Marine Policy*, 55, 102–115.

Greenhill, L., Stojanovic, T. A. & Tett, P. (2020) Does marine planning enable progress towards adaptive governance in marine systems? Lessons from Scotland's regional marine planning process, *Maritime Studies*, 19, 299–315.

Kabat P, Bazelmans J., Dijk van J., Herman P.M.J., Oijen van T., Pejrup M., Reise K., Speelman H., Wolff W.J. 2012 The Wadden Sea Region: Towards a science for sustainable development. *Ocean & Coastal Management* 68, 4-17.

Kamermans, P., Walles, B., Kraan, M., Van Duren, L. A., Kleissen, F., Van der Have, T. M., Smaal, A. C., & Poelman, M. (2018). Offshore wind farms as potential locations for flat oyster (*Ostrea edulis*) restoration in the Dutch North Sea. *Sustainability*, 10 (11), 3942.

Kraan, M. & Hoefsloot, F. 2020 Small-Scale Fisheries in the Netherlands: Fishing on the Margin, In Pascual-Fernández, Pita, C., J. J. & Bavinck M. (eds) *Small-Scale Fisheries in Europe: Status, Resilience and Governance*, Springer Nature, 395-415.

Marine Plan Partnership Initiative 2016 Regional Action Framework, http://mappocean.org/wp-content/uploads/2016/05/raf_mapp_v2.22_web.pdf, accessed 14.12.2020.

McKinnon, R., & Brennan, R. (2012). Belonging to the sea: Exploring the cultural roots of maritime conflict on Gaelic speaking islands in Scotland and Ireland. <http://www.mappingthesea.net/Belonging-to-the-Sea.pdf>, accessed 14.12.2020.

Ministerie van Infrastructuur en Milieu (MvIeM) 2014, Noordzee 2050 Gebiedsagenda: Verslag van een gezamenlijk onderzoek naar de potentie van de zee en kustgebieden op lange termijn, vertaald in een visie, ambities, kansen en opgaven, en in kaarten.

Ministerium für Energie, Infrastruktur und Landesentwicklung Mecklenburg-Vorpommern (MEIL-MV) 2016, Landesraumentwicklungsprogramm Mecklenburg Vorpommern, <https://www.regierung-mv.de/Landesregierung/em/Raumordnung/Landesraumentwicklungsprogramm/aktuelles-Programm/>, accessed 14.12.2020.

Ministry for Infrastructure and Environment (MIE) & Ministry for Economic Affairs (MEA). (2015). Policy document on the North Sea 2016–2021 <https://www.government.nl/documents/policy-notes/2015/12/15/policy-document-on-the-north-sea-2016-2021>, accessed 14.12.2020.

North Coast-Skeena First Nations Stewardship Society & Province of British Columbia, 2015 North Coast Marine Plan, http://mappocean.org/wp-content/uploads/2015/11/nc_mapp_summary_v3.4_web.pdf, accessed 14.12.2020

Ounanian, K., van Tatenhove, J. P.M. & Ramírez-Monsalve, R. 2020 Midnight at the oasis: does restoration change the rigs-to-reefs debate in the North Sea? *Journal of Environmental Policy & Planning*, 22:2, 211-225.

Pacific North Coast Integrated Management Area (PNCIMA) Initiative, 2017, Pacific North Coast Integrated Management Area Plan, <https://www.dfo-mpo.gc.ca/oceans/management-gestion/pnci-ma-zgicnp-eng.html>, accessed 14.12.2020.

Pascual-Fernández, Pita, C., J. J. & Bavinck M. (eds) *Small-Scale Fisheries in Europe: Status, Resilience and Governance*, Springer Nature.

Pew Charitable Trusts, 2020 Resolution to Define Industrial Fishing Closes Loophole in Marine Protections: New guidance clarifies, and limits, the vessels allowed to fish in marine protected areas, 5th November 2020, <https://www.pewtrusts.org/en/research-and-analysis/articles/2020/11/05/resolution-to-define-industrial-fishing-closes-loophole-in-marine-protections>, accessed 14.12.2020.

Pita, C., Pascual-Fernández, J. J. & Bavinck M. 2020 Small-Scale Fisheries in Europe: Challenges and Opportunities, in Pascual-Fernández, Pita, C., J. J. & Bavinck M. (eds) *Small-Scale Fisheries in Europe: Status, Resilience and Governance*, Springer Nature, 581-600.

PO Delta Zuid, PO Texel, PO Urk, PO West, PO Wieringen, Garnalenvissersbond, PO Redersvereniging voor de Zeevisserij, Vereniging NetVISwerk, Vissersvereniging Hulp in Nood, Vissersvereniging Ons Belang & De Nederlandse Vissersbond 2019 Ruimte voor Visserij in de Noordzee vol windmolens: Gezamenlijke Visie, <https://vistikhetmaar.nl/artikelen/visie-visserij-in-een-noord-zee-vol-windmolens/>, accessed 11.01.2021.

Quirijns, F.J., Steins, N.A., Zaalink, B.W., Mol, A., Kraan, M., Strietman, W.J., van Asseldonk, M.A.P.M., Molenaar, P. van Oostenbrugge, J.A.E. & Baltussen, W.H.M. (2019) *Duurzame Noordzee kottervisserij in ontwikkeling: Ervaringen, lessen en bouwstenen*, Wageningen University & Research C085/19 <https://edepot.wur.nl/499389>, accessed 11.01.2021.

Scientific, Technical and Economic Committee for Fisheries (STECF), 2018, The 2018 Annual Economic Report on the EU Fishing Fleet (STECF 18-07), <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/2018-annual-economic-report-eu-fishing-fleet-stecf-18-07>, accessed 14.12.2020.

Stelzenmüller, V., Gimpel, A., Letschert, J., Kraan, C. & Döring, R. 2020 Impact of the use of offshore wind and other marine renewables on European fisheries, Research for the Pech Committee, European Parliament.

Stuiver, M., Soma, L., Koundouri, P. et al 2016 The Governance of Multi-Use Platforms at Sea for Energy Production and Aquaculture: Challenges for Policy Makers in European Seas, Sustainability, 8, 333.

van den Burg, S.W.K., Schupp, M. F., Depellegrin, D. F., Barbanti, A. & Kerr S. 2020 Development of multi-use platforms at sea: Barriers to realising Blue Growth, Ocean Engineering, 217,107983.

van Hoof, L., van den Burg. S.W.K., Banach, J.L., Röckmann, C. & Goossen, M. 2020 Can multi-use of the sea be safe? A framework for risk assessment of multi-use at sea, Ocean & Coastal Management, 184, 105030.

Walsh, C. & Kannen, A. 2019 Spatial Planning at Sea: Shifting Planning Practices at the North Sea Coast of Germany, Raumforschung und Raumordnung: Spatial Research and Planning, 77, (2) 147-164,

Walsh, C. 2018 Metageographies of Coastal Management: Negotiating Spaces of Nature and Culture at the Wadden Sea, Area, 50, (2), 177-185.

Walsh, C. 2019 Integration of Expertise or Collaborative Practice? Coastal Management and Climate Adaptation at the Wadden Sea, Ocean and Coastal Management, 167, 78-86.

Walsh, C. 2020 Landscape Imaginaries and the Protection of Dynamic Nature at the Wadden Sea, Rural Landscapes: Society, Environment, History, 7 (1), 1-20

Walsh, C. 2021 Transcending Land-Sea Dichotomies through Strategic Spatial Planning, Regional Studies (online first).

WindEurope, 2019 Our energy, our future: How offshore wind will help Europe go carbon-neutral, Brussels: WindEurope, <https://windeurope.org/about-wind/reports/our-energy-our-future/>, accessed 31.12.2020.

WWF 2019 Protecting Our Ocean: Europe's Challenges to Meet the 2020 Deadlines, <https://www.wwf.eu/?uNewsID=352798>, accessed 10.12.2020.



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