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European Approaches Support an Essential Definition of Ecosystem-Based Management and Demonstrate Its Implementation for the Oceans

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ABSTRACT

Unclear, contested definitions and high complexity have been used to explain why ecosystem-based management (EBM) has been hard to implement. This still seems to be a problem, judging from the unspecific references to it in recent international instruments and other approaches being preferred. This article argues that an essential definition of EBM that captures its indispensable roles can clarify its meaning. Beyond that, a wide diversity can be found due to adaptations to different ecological, social, and political contexts. In short, EBM entails managing human activities for sustainable use, so the cumulative impacts of uses are kept below critical thresholds for the ecosystem to be managed. The specific integrative role of EBM is integration across ecosystem components, governance arrangements, and broad strands of knowledge in support of management. This understanding should not be controversial and is supported by approaches to implementing EBM in Norway and the EU. Their approaches to EBM for the oceans share key characteristics: They operate on similar spatial scales; use strategic planning; define cyclic, adaptive processes with similar content; and apply management by objectives. With the proclaimed nature crisis, renewed attention to the definition and implementation of EBM is needed.

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Introduction

Integrated approaches to the management of oceans and coasts have been an important issue since Agenda 21 was adopted in 1992.¹ Ecosystem-based management (EBM)—also called the ecosystem approach (EA)²—emerged as a prominent alternative to piecemeal management of nature by sectors or species. While the early roots can be

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¹ United Nations conference on environment and development, Rio de Janeiro, Brazil, 3 to 14 June 1992: *Agenda 21*, section 17.1.

² “The terms ecosystem-based management and ecosystem approach are often used interchangeably, and they mean generally the same thing.” UNEP, *Taking Steps toward Marine and Coastal Ecosystem-Based Management: An Introductory Guide* (United Nations Environmental Programme, 2011), 11. In the UN, EA is the dominant term.

found in many disciplines and countries,³ its origin is often considered to lie in criticism of land-use and natural resource management in the United States.⁴ In the 1990s, support in the United States grew for extending the application of EBM to the oceans.⁵ The concept also spread internationally, was translated into many contexts, and evolved over time. In 1995, the parties to the Convention on Biological Diversity (CBD) stated that the EA should be “the primary framework for action to be taken under the convention.”⁶ In 2000, they followed up by defining the EA as “a strategy for integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way” and supplemented this with 12 principles.⁷ In international fisheries law, there was an evolution that clarified and codified fisheries’ responsibilities toward the wider ecosystem, and in 2001, the term “ecosystem approach to fisheries” (EAF) was introduced.⁸ Following these developments, the World Summit on Sustainable Development, in 2002, “encourage[d] the applicability by 2010 of the ecosystem approach.”⁹ While this referred to both cross-sectoral EBM and EAF, this article only discusses cross-sectoral EBM with a special focus on its application to the oceans. Mainstreaming environmental concerns into sectors such as fisheries comprises what has been described as environmental policy integration.¹⁰ While this can be an important building block for EBM, management across sectors is needed to ensure that all human impacts on the entire ecosystem are considered and addressed, and interactions between sectors are taken into account.¹¹

Despite such high-level recognition, putting EBM into practice has been slow and difficult.¹² In the United States, scientists have been innovative, as exemplified by the publication of one of the first textbooks on EBM for the oceans and efforts to develop

³ D. S. Slocombe, “Environmental Planning, Ecosystem Science, and Ecosystem Approaches for Integrating Environment and Development” (1993) 17 (3) *Environmental Management* 289; S. Kidd, A. Plater, and C. Frid (eds), *The Ecosystem Approach to Marine Planning and Management* (Earthscan, 2011), 3–6; V. De Lucia, “Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law” (2015) 27 (1) *Journal of Environmental Law* 91.

⁴ R. E. Grumbine, “What Is Ecosystem Management?” (1994) 8 (1) *Conservation Biology* 27; H. J. Cortner and M. A. Moote, *The politics of ecosystem management* (Island Press, 1999), 11–37; J. A. Layzer, *Natural Experiments: Ecosystem-Based Management and the Environment* (MIT Press, 2008), 9–41.

⁵ K. McLeod, J. Lubchenko, S. R. Palumbie et al, *Scientific Consensus Statement on Marine Ecosystem-Based Management* (2005). Signed by 221 academic scientists and policy experts with relevant expertise and published by the Communication Partnership for Science and the Sea at: <http://compassonline.org/?q=EBM> (accessed 17 November 2023) [Consensus Declaration]; J. M. Wondolleck and S. L. Yaffee, *Marine Ecosystem-Based Management in Practice: Different Pathways, Common Lessons* (Island Press, 2017), xii.

⁶ CBD, COP 2, decision II/8, Jakarta 1995 at: <https://www.cbd.int/meetings/COP-02> (accessed 17 November 2023).

⁷ CBD, COP 5, decision V/6, Nairobi 2000 [the Malawi principles] at: <https://www.cbd.int/meetings/COP-05> (accessed 17 November 2023).

⁸ S. M. Garcia, J. Rice, and A. Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation. Interaction and Coevolution* (Wiley Blackwell, 2014), 3–52.

⁹ Johannesburg Plan of Implementation (UN Doc. A/CONF.199/20, 4 September 2002), Resolution I, Annex, 30(d).

¹⁰ Å. Persson, H. Runhaar, S. Karlsson-Vynkhuyzen et al, “Environmental Policy Integration: Taking Stock of Policy Practice in Different Contexts” (2018) 85 *Environmental Science & Policy*, 113.

¹¹ McLeod, Lubchenko, Palumbie et al, note 5; UNEP, note 2, 11; T. E. Dolan, W. S. Patrick, J. S. Link et al, “Delineating the Continuum of Marine Ecosystem-Based Management: A US Fisheries Reference Point Perspective” (2016) 73 (4) *ICES Journal of Marine Science* 1042.

¹² C. Engler, “Beyond Rhetoric: Navigating the Conceptual Tangle Towards Effective Implementation of the Ecosystem Approach to Oceans Management” (2015) 23 (3) *Environmental Reviews* 288; Ø. Aas, M. Indset, C. Prip et al, *Ecosystem-Based Management: Miracle or Mirage? Mapping and Rapid Evidence Assessment of International and Nordic Research Literature on Ecosystem-Based Management* (NINA, 2020), 48–59.

integrated ecosystem assessments in support of management.¹³ In terms of management, there are interesting examples at state and at local levels, but there is no consistent use of EBM for the large federal ocean areas.¹⁴ Other examples are Australia and Canada, which both tried and largely abandoned attempts at integrated ocean management.¹⁵ Instead, marine spatial planning (MSP) has rapidly risen to become the dominant marine management paradigm globally, on account of its intuitive solution to solve the problem of crowded ocean spaces that cannot be addressed by sectoral means.¹⁶ MSP has also been promoted as “a practical, operational approach to implement rather vague notions of EBM.”¹⁷ The CBD has contributed to another shift in attention by setting quantitative targets for the percentage of marine protected areas (MPAs), which has driven much of the conservation agenda toward this end. In the Strategic Plan for Biodiversity 2011–2020, where these targets were formulated, there was no reference to EA, which was once the CBD’s primary framework for action.¹⁸ In the new Post-2020 Global Biodiversity Framework, the EA is at least mentioned among the guiding principles, with a reference to CBD’s definition of the concept.¹⁹ Similarly, the recently negotiated UN treaty for Biodiversity Beyond National Jurisdiction (BBNJ) refers to the EA among its general principles and approaches.²⁰ However, despite having an objective that coincides with key functioning of EBM, there is no definition of or clear attempt to operationalize EBM in the treaty.²¹ MPAs were a key issue in the negotiations, but elements that could have contributed to EBM, such as integrated ecosystem assessments for an area or a region, did not receive the same attention.²²

¹³ K. McLeod and H. Leslie (eds), *Ecosystem-Based Management for the Oceans* (Island Press, 2009); C. J. Harvey, C. R. Kelbe and F. B. Schwing, “Implementing ‘the IEA’: Using Integrated Ecosystem Assessment Frameworks, Programs, and Applications in Support of Operationalizing Ecosystem-Based Management” (2017) 74 (1) *ICES Journal of Marine Science* 398.

¹⁴ Wondollock and Yaffe, note 5; D. Fluharty, “Ecosystem-Based Approaches to Ocean Management in the United States: Weaving Together Multiple Strands” in D. Langlet and R. Rayfuse (eds), *The Ecosystem Approach in Ocean Planning and Governance: Perspectives From Europe and Beyond* (Brill-Nijhof, 2019), 371.

¹⁵ J. Vince, “Integrated Policy Approaches and Policy Failure: The Case of Australia’s Oceans Policy” (2015) 48 (2) *Integrating Knowledge and Practice to Advance Human Dignity* 159; G. Sander, “Ecosystem-Based Management in Canada and Norway: The Importance of Political Leadership and Effective Decision-Making for Implementation” (2018) 163 *Ocean & Coastal Management* 485.

¹⁶ W. Flannery, “Making Marine Spatial Planning Matter” in S. Partelow, M. Hadjimichael and A.-K. Hornige (eds), *Ocean Governance: Knowledge Systems, Policy Foundations and Thematic Analyses* (Springer International, 2023), 93.

¹⁷ C. Ehler and F. Douvère, “An International Perspective on Marine Spatial Planning Initiatives” (2010) 37(3) *Environments* 9.

¹⁸ CBD, COP 10 Decision X/2 “Strategic Plan for Biodiversity 2011–2020” (29 October 2010) UNEP/CBD/COP/10/27.

¹⁹ CBD, COP 15 Kunming-Montreal Biodiversity Framework, CBD/COP/DEC/15/4; Conservation and Sustainable Use of Marine and Coastal Biodiversity, CBD/COP/DEC/15/24, 7.

²⁰ Agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, A/CONF.232/2023/4, adopted 19 June 2023, not entered into force, Art 7(f) [BBNJ]. Note also how the objective in Article 2 coincides with definitions of EBM; see the discussion later in this article.

²¹ *Ibid*, Art 1.

²² M. Doelle and G. Sander, “Next Generation Environmental Assessment in the Emerging High Seas Regime? An Evaluation of the State of the Negotiations” (2020) 35 (3) *International Journal of Marine and Coastal Law* 498; BBNJ, *ibid*, part III compared to Art 39(2).

It has been suggested that unclear definitions and lack of consensus, especially during EBM's formative years, have been major reasons for its slow implementation.²³ However, the concept has matured, and clarifications and further syntheses have appeared after the CBD's much-cited definition. Thus, it has been quite a while since it was argued that definitions, principles, and practices should be no obstacle for implementation.²⁴ This is not the impression from the developments referred to in the preceding. The unspecific references in the two UN instruments suggest that uncertainty over the understanding of EBM still reigns, or, alternatively, that the concept is deliberately kept vague and open in order to conceal disagreement or to serve in different contexts.²⁵ Another reason why EBM appears to be less appealing now is that both MSP and MPAs are approaches that are easy to grasp and communicate, as opposed to perceived complexities of EBM.²⁶ Defining the essence of EBM—those meanings that are crucial or indispensable to understand what it entails—therefore is necessary in order to return the concept to the international ocean governance agenda in the face of the global biodiversity crisis.²⁷

To this end, it is useful to analyze the practices of jurisdictions that have tried to implement EBM. Norway started in 2001, adopting its first plan in 2006, and now has routinely institutionalized ecosystem-based management for its ocean areas. The EU adopted the Marine Strategy Framework Directive (MSFD) in 2008.²⁸ EU member states have fulfilled the first cycle of planning and implementation under the Directive and have started on a second one. In this article, I compare these two versions of EBM, focusing on how they understand the concept, the practical approaches they take, and how these can be used to shed light on current definitions. Moreover, both approaches demonstrate that EBM is not just an abstract principle but a concept that can be put into practice. Instead of the normative reasoning that can be found in much of the EBM literature, this is an empirical test of what states emphasize in their implementation compared to theoretical definitions and principles.

The article starts with a discussion of two recent definitions of EBM and suggests how its essential characteristics can be drawn from these. This is followed by a comparison of EBM as implemented in Norway and by the EU in the MSFD, demonstrating that they share major approaches. The next section returns to the definitions of EBM and discusses the extent to which they are supported by the two cases analyzed. Finally, the article concludes with reflections on the essence of EBM and its role in the ocean management landscape.

²³ Kidd, Plater and Frid, note 3, 4; R. D. Long, A. Charles and R. L. Stephenson, "Key Principles of Marine Ecosystem-Based Management" (2015) 57 *Marine Policy* 53; Engler, note 12; De Lucia, note 3.

²⁴ S. A. Murawski, "Ten Myths Concerning Ecosystem Approaches to Marine Resource Management" (2007) 31(6) *Marine Policy*, 681; UNEP, note 2.

²⁵ S. L. Yaffee, "Three Faces of Ecosystem Management" (1999) 13 (4) *Conservation Biology* 713; Engler, note 12; Kidd, Plater and Frid, note 3.

²⁶ Ehler and Dove, note 17; Flannery, note 16.

²⁷ Kunming-Montreal framework, note 19.

²⁸ Directive 2008/56/EC of the European Parliament and of the council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), *Official Journal of the European Union* L 164 (25 June 2008), [MSFD].

Definitions of EBM

In the long evolution of EBM, it has been claimed that a single model or definition would be inappropriate as the concept was seen as too complex to be codified.²⁹ The need to adapt EMB to different contexts is another reason why a reluctance toward prescriptive definitions can be found in the literature. Instead of one definition, various principles, characteristics, criteria, and approaches consistent with EBM have been suggested.³⁰ This is a heritage that may explain why the CBD adopted a definition supplemented by principles. Its definition highlighting integrated management, and equitable promotion of conservation and sustainable use, is brief and sets out much of the explanation in the 12 accompanying principles.

Since EBM was introduced, the concept has evolved. Here, two definitions, adopted more recently than the CBD's, are selected because of their attempts to synthesize. The first one is set out in a Consensus Declaration signed by 221 US scientists and policy experts in 2005, and defines EBM as follows:

Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors.³¹

The Declaration elaborated on this definition in five bullet points that specified EBM in terms of its emphasis on the protection of ecosystem structure, functioning, and key processes; place-based nature in focusing on a specific ecosystem; explicit account for the interconnections within marine ecosystems; acknowledgment of the interconnections between air, land, and sea; and finally, the integration of ecological, social, economic, and institutional perspectives.³² It also referred to seven actions consistent with EBM.³³

The second synthesizing initiative was developed by an expert group under the Arctic Council, which in 2013 compared existing definitions of EBM in order to formulate guidance for the Council's work.³⁴ They selected a definition adopted by the Helsinki and OSPAR Commissions and the International Council for the Exploration of the Sea.³⁵

²⁹ Kidd, Plater and Frid, note 3, 4.

³⁰ UNEP note 2; Engler note 12; K. K. Arkema, S. C. Abramson and B. M. Dewsbury, "Marine Ecosystem-Based Management: From Characterization to Implementation" (2006) 4 (10) *Frontiers in Ecology and the Environment* 525; McLeod, Lubchenko, Palumbie et al, note 5.

³¹ McLeod, Lubchenko, Palumbie et al, note 5.

³² *Ibid.*, 1.

³³ *Ibid.*, 4–5. These included ecosystem-level planning, cross-jurisdictional management goals, zoning, habitat restoration, co-management strategies, adaptive management, and long-term monitoring and research.

³⁴ Arctic Council, Ecosystem-based management in the Arctic: Report submitted to senior Arctic officials by the Expert Group on Ecosystem-Based management (Arctic Council, Tromsø, 2013) at: <https://www.havochvatten.se/download/18.3f5692b613e6622a2ebd78/1369205856863/ecosystem-based-management-arctic.pdf> (accessed 6 December 2023). [Expert Group]

³⁵ *Ibid.*, 11–12; Record of the First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions (Bremen, 26 June 2003), Annex 5, "Towards an Ecosystem Approach to the Management of Human Activities"; International Council for the Exploration of the Sea (ICES), *Guidance on the Application of the Ecosystem Approach to Management of Human Activities in the European Marine Environment*, (ICES Cooperative Research Report no 273, 2005).

Ecosystem-based management is the comprehensive, integrated management of human activities based on best available scientific and traditional knowledge about the ecosystem and its dynamics, in order to identify and take action on influences that are critical to the health of ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity.

According to the report, this “represents a globally recognized and endorsed definition.” The experts also compared principles associated with EBM, including those developed by the CBD and the United Nations, and formulated a synthesis of these in support of the definition³⁶:

1. EBM supports ecosystem resilience in order to maintain ecological functions and services.
2. EBM recognizes that humans and their activities are an integral part of the ecosystem as a whole, and that sustainable use and values are central to establishing management objectives.
3. EBM is place-based, with geographic areas defined by ecological criteria, and may require efforts at a range of spatial and temporal scales (short-, medium-, and long-term).
4. EBM balances and integrates the conservation and sustainable use of ecosystems and their components.
5. EBM aims to understand and address the combined, incremental effects (known as “cumulative impacts”) that multiple human activities impose upon ecosystems, resources, and communities.
6. EBM seeks to incorporate and reflect scientific knowledge, as well as expert, traditional, and local knowledge.
7. EBM is inclusive and encourages participation at all stages by various levels of governments, indigenous peoples, stakeholders (including the private sector), and other Arctic residents.
8. Transboundary perspectives and partnerships can contribute significantly to the success of EBM efforts.
9. Successful EBM efforts are flexible, adaptive, and rely on feedback from monitoring and research because ecosystems and human activities are dynamic, the Arctic is undergoing rapid changes, and our understanding of these systems is constantly evolving.

The Arctic Council ministers approved the definition and associated principles and recommendations of the report in 2013.³⁷

³⁶ Arctic Council, note 34, 13–19, 23–27. Here, the Expert Group demonstrated how it reviewed and merged principles from five sources, including the CBD’s Malawi Principles and the 2006 UN open-ended informal consultative process on oceans and the law of the sea. It should be noted that these are principles meant to supplement the definition. To what extent they express or are supported by legal principles is not discussed here.

³⁷ Kiruna Declaration on the occasion of the Eight ministerial meeting of the Arctic Council (MM 08–15 May, Kiruna, Sweden), 15 May 2013, Arctic Council Secretariat.

Although more definitions and supporting principles can be identified that might add more nuances,³⁸ the two just articulated should suffice for the purpose of discussing the essential characteristics of EBM. However, there is one apparent exclusion: the precautionary principle, which is often linked closely to EBM.³⁹ This is not expressly included in the preceding, but is in the following discussion of the essential elements of EBM.

First, EBM is about managing human activities. This may seem trivial, but reflects the understanding that humans cannot control or manage ecosystems; we are mostly confined to trying to influence them indirectly by managing humans who undertake activities that affect the ecosystems.⁴⁰ This was an important reason why the term “ecosystem management” was abandoned and replaced by ecosystem-*based* management.⁴¹ Moreover, the term “management” distinguishes EBM from scientific exploration and research on marine ecosystems and related human impacts. Such knowledge is absolutely needed, in the first place, to diagnose issues and risks (see Figure 1—red arrows). But “management” implies a response to those issues and risks. Diagnostic assessments should therefore provide input to planning processes that suggests some sort of policy framework or set of measures, and a political process leading to the adoption of a plan (see Figure 1—blue arrows). Another implication of the management focus is that knowledge about how to effectively manage humans, for the purposes of EBM, should be a priority. Such studies of governance have been less prominent in the EBM literature than the many explorations of the biological foundations of the concept.⁴²

Second, the purpose of EBM is to balance sustainable use and conservation so ecosystem health can be maintained. The very definition adopted by the Arctic Council uses the terms “sustainable use” and “ecosystem integrity.” Its accompanying principle number 4 clarifies that this means balancing and integrating conservation and sustainable use, thus according with the CBD definition that promotes the two in an equitable way. The Consensus Declaration, by contrast, does not use these terms. However, the reference to humans enjoying ecosystem services implies use, while conservation is embedded in the goal of maintaining ecosystem health in a manner that continues to deliver ecosystem services. Although the balance in this definition is toward protection of the ecosystem, it does not advocate strict conservation excluding use. Balancing use and conservation is demanding, but none of the definitions provide guidance for the challenge beyond including general criteria for a healthy ecosystem.⁴³

³⁸ Examples of literature discussing EBM principles are Arkema, Abramson and Dewsbury, note 30; A. A. Rosenberg and P. A. Sandifer, “What Do Managers Need?” in K. McLeod and H. Leslie (eds), note 13; Long, Charles and Stephenson, note 23; Engler, note 12. Even though the principles in some of these are based on searches in scientific literature, there is considerable overlap with principles identified by the Expert Group.

³⁹ A. Trouwborst, “The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages” (2009) 18 (1) *Review of European Community & International Environmental Law* 26, 33–34; McLeod, Lubchenko, Palumbi et al, note 5. The BBNJ agreement, note 20, Art 19(3), also suggests a linkage.

⁴⁰ McLeod, Lubchenko, Palumbie et al, note 5, 6; Kidd, Platter and Frid, note 3, 21.

⁴¹ *Ibid.*

⁴² The first part of Engler, note 12, has references to and discusses much of this biological literature. See also Aas, Indset, Prip et al, note 12.

⁴³ Maintenance of health, integrity, structure, function, productivity, and resilience are examples of normative characteristics of goals for the ecosystem that can be found in the definitions cited here. See also Grumbine, note 4, and Engler, note 12. Here, “health” is used as a generic term.



Figure 1. Ecosystem-based management requires trying to understand the structure and functioning of the ecosystem to be managed, here exemplified by a kelp system, and the ways human pressures lead to direct and indirect impacts that interact, creating cumulative impacts (red arrows). In addition, there is a need to assess how the activities affecting the ecosystem can be managed in order to reach goals for a desirable ecosystem status (blue arrows), followed by a political process that leads to the adoption of a plan.

Third, following the CBD, these definitions also refer to EBM as “integrated management.” The critical question about integration is what an ambition of integration entails.⁴⁴ The Consensus Declaration states that EBM can be distinguished from a focus on a single species, sector, or concern by considering the cumulative

⁴⁴ A. Underdal, “Integrated Marine Policy: What? Why? How?” (1980) 4 (3) *Marine Policy* 159; E. Meijers and D. Stead, “Policy Integration: What Does It Mean and How Can It Be Achieved? A Multi-Disciplinary Review,” *Berlin Conference on the Human Dimensions of Global Environmental Change* (2004), at: https://userpage.fu-berlin.de/ffu/akumwelt/bc2004/download/meijers_stead_f.pdf (accessed 18 November 2023).

impacts of different sectors. This contains two requirements for integration. The first is making the entire ecosystem the object of management, which involves assessing the cumulative load of pressures.⁴⁵ The second is the involvement of all those whose activities affect an ecosystem and those who have concerns about its condition. The management of such activities will involve multiple sectors and different levels of governance, in principle, from the local to the global, depending on the type of activity. It can be argued that these are the two types of integration that most clearly distinguish EBM from other approaches, especially the management of entire ecosystems. The Arctic Council definition contains a third type of integration by stating that management should be based on the best available knowledge; the Expert Group even characterized EBM as a science-based approach to management. The definition also specifies that the type of knowledge should be both scientific and traditional. The Consensus Declaration does not include requirements for knowledge in its definition, indicating that knowledge has a weaker position. Nevertheless, knowledge is clearly considered a necessary condition in its associated reasoning. The types of knowledge identified include knowledge about the ecosystem and human impacts, as well as about the effects of management actions.

I would argue that the management of human activities for sustainable use that respects thresholds for a healthy ecosystem, achieved by considering the whole ecosystem and all activities that impact upon it, is an essential characteristic of EBM. Integration of knowledge and management is also required, mobilizing and integrating many types of knowledge. These integrative tasks seem to be generally accepted, even though the wording and nuances of the definitions vary. What else should be included in a definition is a matter of taste, depending upon whether one prefers a lean definition, focusing on these essentials, or a more comprehensive one that adds other principles and approaches. The origin of such add-ons can often be attributed to sources other than EBM, and they do not define EBM on their own. For instance, knowledge-based planning and decision making have long historical roots; requirements for participation beyond governments reflect a modern governance turn, whereas the precautionary principle is applicable to management under uncertainty in general.⁴⁶ However, it can be argued that the inclusion of many of these principles in combination is needed to describe EBM comprehensively, thereby giving it a clearer direction for implementation than a lean definition of its essential elements only. Which principles are considered relevant, however, vary according to context and preferences, as will be illustrated by the approaches of Norway and the EU.

⁴⁵ Arctic Council, note 34, 11.

⁴⁶ A. Faludi and B. Waterhout, "Introducing Evidence-Based Planning" (2006) 42 (165) *disP—The Planning Review* 4; Kidd, Plater and Frid, note 3, ch. 1; Trowborst, note 39.

Introduction to the Comparison of Norwegian and EU Approaches

The Norwegian Ocean Management Plans: An Overview

The Norwegian Ocean Management Plans (OMPs) originate from long-standing political struggles over the expansion of the offshore oil and gas industry.⁴⁷ When the political platform for a new government was negotiated in 2001, the coalition parties agreed to make “a holistic management plan” for the Barents Sea as one uncontroversial element in a package deal that settled several contested issues.⁴⁸ The following year, the government presented the first holistic policy for Norwegian oceans to the parliament (the *Storting*).⁴⁹ OMPs should be the major mechanism for realizing a vision of clean and rich oceans for future generations. No new legislation was enacted for the plans; their implementation, however, was to rely on existing laws and sectoral administrations. These were not modified by the new initiative beyond setting up coordination mechanisms. A steering group consisting of administrative representatives from four ministries was established to coordinate the work, led by the Ministry of the Environment. The ministries gave coordinated terms of references for assessments and technical studies to their individual subordinate directorates and agencies. The reports they received provided input when the group assisted the ministers in the cabinet in preparing a white paper to the parliament, containing the first OMP for the Barents Sea.⁵⁰ Since then, the number of collaborating ministries has increased to nine, the directorates and agencies have been organized into formal advisory bodies, and the content of the plans has evolved with each new white paper. Nevertheless, the division of roles described here remains the same. Successive Norwegian governments have presented seven white papers, each containing a plan for one of the three management areas: the Barents Sea, the Norwegian Sea, and the North Sea.⁵¹ In 2020, plans for the management areas were merged into one joint white paper, containing a revision of one plan and updates of the two others.⁵² The government will present one white paper with joint presentations of the plans every four years.

⁴⁷ G. Andersen, *Parlamentets natur: Utviklingen av norsk miljø- og petroleumspolitik 1945–2013* (Universitetsforlaget, Oslo, 2017) [The Nature of Parliament. The Manufacture of legitimate Norwegian Environmental and Petroleum Policy 1945–2013], chapters 5 and 7; E. Olsen, S. Holen, A. H. Hoel et al, “How Integrated Ocean governance in the Barents Sea Was Created by a Drive for Increased Oil Production” (2016) 71 *Marine Policy* 293.

⁴⁸ Political platform for a coalition government originating from *Høyre* (Conservatives), *Kristelig Folkeparti* (Christian Democrats), and *Venstre* (Liberals) at p 19–20 (The Sem Declaration); interviews with two participants in the negotiations who later became ministers.

⁴⁹ Report to the *Storting* (white paper) No 12 (2001–2002) *Protecting the Riches of the Seas*. An overview containing links to English translations of Report No 12, and the subsequent management plans (not complete) can be found at: <https://www.regjeringen.no/en/topics/climate-and-environment/biodiversity/innsiktsartikler-naturmangfold/forvaltningsplaner-for-havomrada/id207648/> (accessed 17 November 2023).

⁵⁰ Report to the *Storting* (white paper) No 8 (2005–2006) *Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands*, *ibid*. The processes for preparing and implementing the plan are analyzed in Olsen, Holen and Hoel, note 47, and in G. Sander, “Against All Odds? Implementing a Policy for Ecosystem-Based Management of the Barents Sea” (2018) 157 *Ocean and Coastal Management* 111.

⁵¹ All assessments and technical reports (in Norwegian with some English summaries) as well as Norwegian versions of all the white papers can be found at: <https://havforum.miljodirektoratet.no> (accessed 17 November 2023).

⁵² Report to the *Storting* (white paper) No 20 (2019–2020), *Norway’s Integrated Ocean Management Plans—Barents Sea–Lofoten Area; the Norwegian Sea; and the North Sea and Skagerrak*, at: <https://www.regjeringen.no/en/dokumenter/meld.-st.-20-20192020/id2699370> (accessed 17 November).

These white papers represent the integrated ocean policy of Norway, in addition to being an instrument for EBM. They have limited bearing on the allocation of access to ocean space, which occurs according to relevant sectoral legislation. This makes it doubtful to characterize the plans as MSP per se.⁵³ Owing to many initiatives for the expansion of new economic activities, the Norwegian government is currently discussing how general principles for the allocation of access to ocean space may become a part of the next plan.⁵⁴ By this, the OMPs will combine integrated ocean management, EBM, and some sort of cross-sectoral MSP in one instrument. As shown later, this combination of approaches in one instrument is different from the MSFD.

The EU Marine Strategy Framework Directive: An Overview

In its first Communication in 2002 on what would become the Marine Strategy Framework Directive (MSFD), the European Commission described how attempts to manage the marine environment had resulted in a sector-by-sector approach and a patchwork of initiatives at all levels.⁵⁵ It asserted that the political commitment to sustainable development instead should lead to a more integrated approach. Each sector should consider their impacts on other sectors and on the marine environment, consistent with an ecosystem-based approach. Following an extensive consultation process and political debate, the Directive was adopted in 2008.⁵⁶ The motivation set out in the preamble is to reduce negative impacts on the marine environment. This is operationalized by a substantive objective of achieving or maintaining good environmental status, by 2020 at the latest, through several procedural requirements centering around developing and implementing so-called marine strategies. The fragmentation of policies should be overcome by aiming for coherence between different policies and fostering integration of environmental concerns into other policies. The Directive should also enhance the coherence of the contributions of the EU and its member states in meeting their obligations under global agreements and the four regional seas conventions in Europe.

The MSFD is a framework directive meant to cover the diversity of European seas, not a regulation or a prescriptive directive.⁵⁷ Binding, substantive requirements are found in associated EU legislation, which is meant to be an important mechanism for achieving the MSFD's objectives. Enacted at the European level, the MSFD must be transposed and implemented in 23 coastal states, excluding Norway.⁵⁸ Each coastal

⁵³ This is done in for instance, C. Ehler and F. Douvere, *Marine Spatial Planning, A Step-by-Step Approach Toward Ecosystem-Based Management* (IOC-UNESCO, 2009). The clearest spatial element in the plans is the political mechanism for steering where the sectoral oil and gas management should open or close access to areas. A general guideline for the use of ocean space is the requirement to be cautious when operating in the vulnerable and valuable areas. See Sander, note 50, and the last chapters in the management plans, note 49.

⁵⁴ Explained by two ministers in a meeting with stakeholders 29 September 2023.

⁵⁵ European Commission, Communication from the Commission to the Council and the European Parliament: Towards a Strategy to protect and Conserve the Marine Environment COM (2002) 539 final, 2–3.

⁵⁶ MSFD, note 28; L. Juda, "The European Union and the Marine Strategy Framework Directive: Continuing the Development of European Ocean Use Management" (2010) 41 (1) *Ocean Development & International Law* 34.

⁵⁷ N. Soininen and F. M. Platjouw, "Resilience and Adaptive Capacity of Aquatic Environmental Law in the EU: An Evaluation and Comparison of the WFD, MSFD, and MSPD" in D. Langlet and R. Rayfuse (eds), *The Ecosystem Approach in Ocean Planning and Governance: Perspectives from Europe and Beyond* (Brill Nijhoff, 2019), 17.

⁵⁸ Norway is not a member of the EU. The relationship between Norway and the EU is regulated by the European Economic Area Agreement. Norway gets access to EU's internal market on the condition that it accedes certain types of EU directives and policies. See overview at: <https://www.norway.no/en/missions/eu/areas-of-cooperation/>

state will have its individual national legislation, designation of competent authorities, and mechanisms for collaboration.⁵⁹ To achieve a consistent approach, there are several reporting obligations that subject the member states to the enforcement policy of the European Commission, and a common implementation strategy.⁶⁰ The Commission has started a process to review the MSFD based on the achievements and shortcomings.⁶¹

Methodological Challenges in Comparing the Approaches of Norway and the EU

For the comparison, two circumstances of methodological relevance should be highlighted. First, it might be argued that a comparison between Norway and individual states would be more appropriate than a comparison between Norway and the EU. However, the MSFD establishes a common approach to EBM that is interesting and meaningful to compare to Norway. To keep the comparison at the same level, many details about the Norwegian plans are omitted. Some information beyond what is needed for a strict comparison is provided in footnotes.

Second, the MSFD is a legal act in which substantive and procedural requirements are described. Thus, the analysis of the Directive is entirely based on legal texts and documents from the European Commission. Contrary to this, the Norwegian OMPs do not have a statutory basis, nor many formalized prescriptions about procedures, methods, and content.⁶² They can be considered as a custom that has gradually evolved over more than 20 years and now is firmly established. It is therefore necessary to supplement analysis of the documents available with other methods. The analysis here also relies on observations at meetings and in-depth interviews undertaken for the purposes of two previous projects.⁶³ The approximately 35 interviewees were former members of the government, civil servants from the collaborating ministries, members of the advisory bodies, and leaders of some NGOs. Meetings attended include presentations from the advisory bodies, and meetings where NGOs have presented their views, in addition to the experience of the author from a former position in one of the directorates involved in assessments for the management plans.

[the-eea-agreement](#) (accessed 17 November 2023). The MSFD is not covered by the agreement, whereas the Water Framework Directive is.

⁵⁹ The member states should define competent authority and report it to the Commission; see the MSFD, note 28, Arts 7 and 13(3). Thus, the Norwegian version described in the previous section is “a special case” in a European context.

⁶⁰ The Commission has evaluated progress after three major stages of the member states’ reporting. The most recent evaluation, summarizing major findings across these, is *Report from the Commission to the European Parliament and the Council—on the implementation of the Marine Strategy Framework Directive* (Directive 2008/56/EC) (Brussels 25.6.2020 COM (2020) 259 final). The interplay with nine supporting EU policies is the subject of section 3, and preliminary suggestions for improvement can be found in section 5.

⁶¹ Source: https://environment.ec.europa.eu/news/commission-publishes-msfd-roadmap-2021-04-09_en (accessed 6 December 2023). The review has been postponed from the original deadline of mid 2023.

⁶² The only formal instructions are the mandates that the steering group has provided for its advisory bodies (available at: <https://havforum.miljodirektoratet.no>, accessed 17 November 2023). Apart from that, an interviewee explained that only general rules for the functioning of the government apparatus apply, some of them formalized, some of them informal customary behavior (*god forvaltningsskikk*).

⁶³ G. Sander, *Implementation of Ecosystem-Based Ocean Management* (2018), PhD thesis from UiT, at: <https://munin.uit.no/handle/10037/15191>, chapter 2 and Paper 2 (accessed 6 December 2023); G. Sander, S. Cochrane, F. Platjouw et al, *Two Pathways to Good Environmental Status. A Comparison of EU’s Marine Strategy Framework Directive and the Norwegian Ocean Management Plans* (Miljødirektoratet and NIVA, Oslo, 2022), at: <https://niva.brage.unit.no/niva-xmlui/bitstream/handle/11250/2984945/7689-2022%2bhigh.pdf?sequence=1&isAllowed=y> (in Norwegian with English summary).

A Comparison of the Ocean Management Plans (OMPs) and the EU's MSFD

In this section, key common approaches in the two instruments are described first, before some differences are discussed.

Two Cases of EBM

The Norwegian government describes the OMPs as an “integrated, ecosystem-based ocean management plan system.”⁶⁴ Correspondingly, the MSFD is described as “an ecosystem-based approach to the management of human activities.”⁶⁵ Thus, both can be considered as cases of EBM, so the comparison is between equal types of instruments.

Large Marine Ecosystems as Management Objects

Defining the ecosystems to be managed was an early decision by Norway in developing its OMPs (Figure 2). The geographical scope of the plans is the ocean areas beyond the coast under Norwegian jurisdiction.⁶⁶ Within this, ecological criteria were applied to include the important spawning grounds in Lofoten in the Barents Sea management area, and to distinguish the shallow Barents Sea from the deep Norwegian Sea.⁶⁷ The MSFD has adopted a two-tiered geographical approach by defining marine regions and subregions, taking hydrological, oceanographic, and biogeographic features into account.⁶⁸ The four regions defined are the Baltic Sea, the Northeast Atlantic Ocean, the Mediterranean Sea, and the Black Sea, with subregions (Figure 3).

Thus, in both systems, large ocean areas are defined as the ecosystems to be managed. Ecological criteria play an important role in their designation and are more consistently applied by the supranational EU than by Norway as an individual coastal state. However, the difference is smaller in practice. The OMPs' boundary for assessment includes the wider ecosystems to which the Norwegian management areas belong.⁶⁹ It is their boundary for management that covers only ocean areas under Norwegian jurisdiction, supplemented by a significant number of international initiatives that contribute to shape Norway's international cooperation on ocean affairs.⁷⁰ In the MSFD, it is also the individual member states that are

⁶⁴ Report No 20 (2019–2020), note 52.

⁶⁵ MSFD, note 28, preamble (8, 44), Art 1(3). Interestingly, in the European Commission's evaluation report (note 60, 5), the definition of EBM provided is a combination of those adopted by the CBD and the Consensus Declaration.

⁶⁶ The boundary toward the coast is the baseline, as it is for the MSFD according to its Articles 2 and 3(1)a. The MSFD Article 3(1)b provides European coastal states with the opportunity to extend their marine strategies into coastal waters to supplement the Water Framework Directive (WFD), which has a narrower thematic scope. The Norwegian government, on the other hand, has made a strict divide between the OMPs and the designation of measures for managing the coastal zone, where the counties and municipalities have prominent roles (Report No 37 (2012–2013), note 51, 14). Thus, the plans made according to the WFD are the closest Norway comes to ecosystem-based management of its coastal zone, which is exceptionally large in a European context owing to its deep fjords and many islands that define the baseline (Figure 2).

⁶⁷ Report no 8, note 50, 16.

⁶⁸ MSFD, note 28, Arts 3(2) and 4.

⁶⁹ Interviewees refer to especially ICES assessments and the status reports of the Barents Sea prepared under the Norwegian–Russian environmental cooperation; see <https://www.barentsportal.com/barentsportal/index.php/en> (accessed 17 November 2023). Some information from the coastal zone is also considered.

⁷⁰ Sander, note 50, 116–117; Report No 20, note 52, 137–144, 158–159.

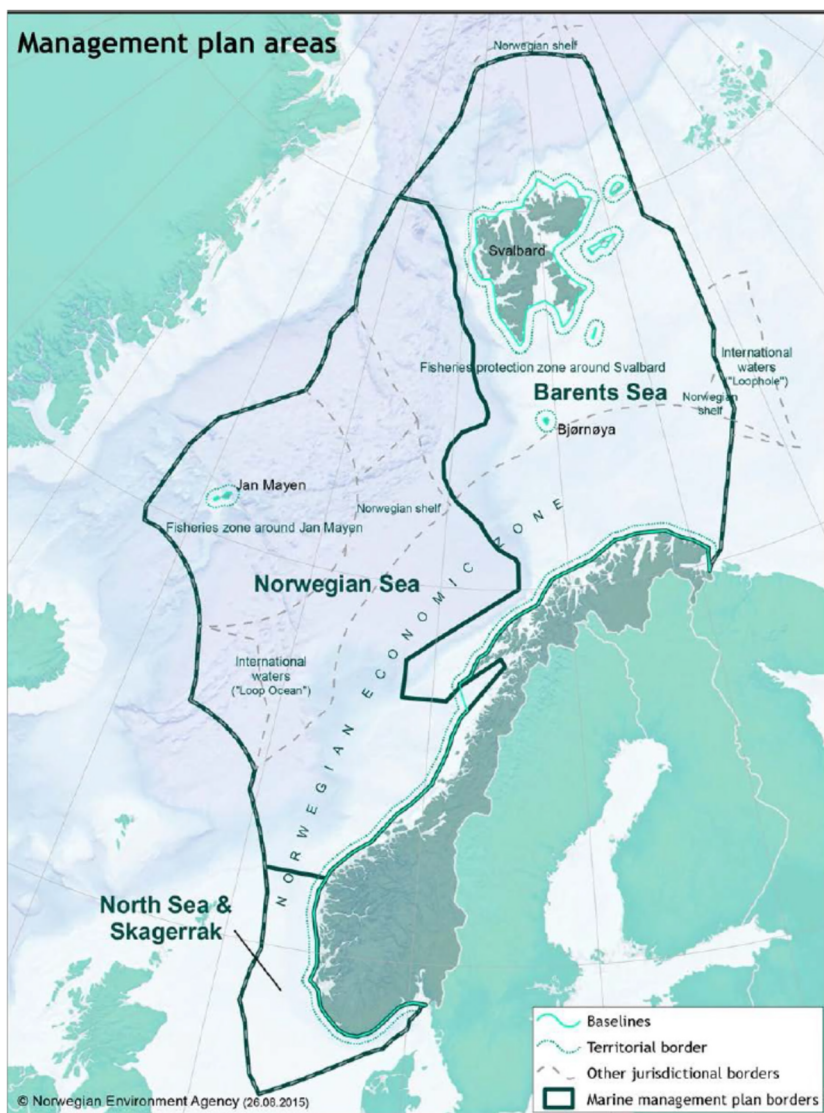


Figure 2. The three Norwegian management areas.

responsible for the marine strategies.⁷¹ This creates a fragmentation of the defined ecosystems. The Directive tries to overcome this fragmentation by provisions requiring states to take due account of the marine regions and to cooperate with neighboring states in order to achieve coordinated and coherent assessments, monitoring programs, and programs of measures.⁷² The four regional seas conventions in Europe should play a key role in this respect.⁷³ However, these provisions have not functioned as expected; despite improvements since the adoption of the MSFD,

⁷¹ MSFD, note 28, Arts 1(1), 5(1).

⁷² *Ibid* Arts 4, 5(2), 4, 6, 8(3), 11(1 and 2), 13(8).

⁷³ *Ibid* Arts 3(10), 6.



Figure 3. The European marine regions and subregions according to MSFD.

Map: NIVA, based on EEA.⁷⁷

the European Commission still finds it necessary to call for boosting regional cooperation.⁷⁴

Strategic Plans Are Used for Coordination of Sectors and Coastal States

Both the EU and Norway use strategic plans as a mechanism for coordination to achieve common goals. The Norwegian OMPs constitute an additional layer over existing sectoral management structures by creating an overall framework, which the government uses to encourage closer coordination and clearer priorities for the individual sectors.⁷⁵ The plans conclude with a chapter containing guidelines for the management of maritime activities, and concrete measures to address challenges identified in the assessment reports.⁷⁶ Following the principle of environmental policy integration,⁷⁸ the sectors are responsible for suggesting responses to challenges raised in reports from the advisory bodies, within their respective areas of

⁷⁴ European Commission, note 60, 28.

⁷⁵ Report No 20 (2019–2020), note 52, 14–15.

⁷⁶ *Ibid.*, 144–160 contains the most recent example.

⁷⁷ European Environment Agency, *Delineation of the MSFD Article 4 Marine Regions and Subregions* (2017). Source: <https://www.bing.com/ck/a?!&&p=5bdf291fcc2d71dbJmldtHM9MTY5Njg5NjAwMCZpZ3VpZD0zMGVmZDE2NS04MTk0LTlyxMmMtMzdjYS1jMjVjODBjMzYwZTQmaW5zaWQ9NTE4OQ&ptn=3&hsh=3&fclid=30efd165-8194-612c-37ca-c25c80c360e4&psq=Delineation+of+the+MSFD+Article+4+marine+regions+and+subregions+u=a1aHR0cHM6Ly93d3cuZWVhLmV1cm9wYS5ldS9kYXRhLWZlZC1tYXBzL2RhZGEvbnRmZC1yZWdpb25zLWZlZC1zZD0zMGVmZDE2NS04MTk0LTlyxMmMtMzdjYS1jMjVjODBjMzYwZTQmaW5zaWQ9NTE4OQ&ntb=1> (accessed 17 November 2023).

⁷⁸ Persson, Runhaar, Karlsson-Vynkhuyzen et al, note 10.

responsibility. Similarly, they are expected to implement the measures after the approval of the plans in parliament.

The MSFD emphasizes the strategic nature of the plans to be produced by referring to them as “marine strategies.”⁷⁹ Key to their strategic nature is the objective of achieving coherence by integrating environmental concerns into relevant policies, agreements, and legislative measures that have an impact on the marine environment, and building upon Community legislation when designating a program of measures.⁸⁰ The required coordination between member states is another type of strategic action. Details for what role the strategies should play in the coastal states’ governance system, including their interplay with national legislation and administrations, are not prescribed.

Cyclic Adaptive Processes with the Same Main Elements

Both instruments illustrate their planning systems as cyclic processes, thereby facilitating adaptive management (Figures 4 and 5). The MSFD explicitly requires adaptive management, and that member states shall ensure that marine strategies are kept up to date with reviews every six years.⁸¹ Prompted by requests from the Parliament, the Norwegian government has defined two new types of processes: updates every four years that consider new knowledge and needs for new measures only and more thorough reviews every 12 years.⁸²



Figure 4. MSFD is illustrated as a cyclic, adaptive process.

⁷⁹ MSFD, note 28, Arts 1(2), 1(3), and 5. The content described is typical for a plan, which is a term that also is used here when referring to the marine strategies.

⁸⁰ MSFD, note 28, Arts 1(4), 13(2), and 13(4).

⁸¹ *Ibid.*, Arts 3(5) and 17.

⁸² Report No 20, note 52, 16 and 159.

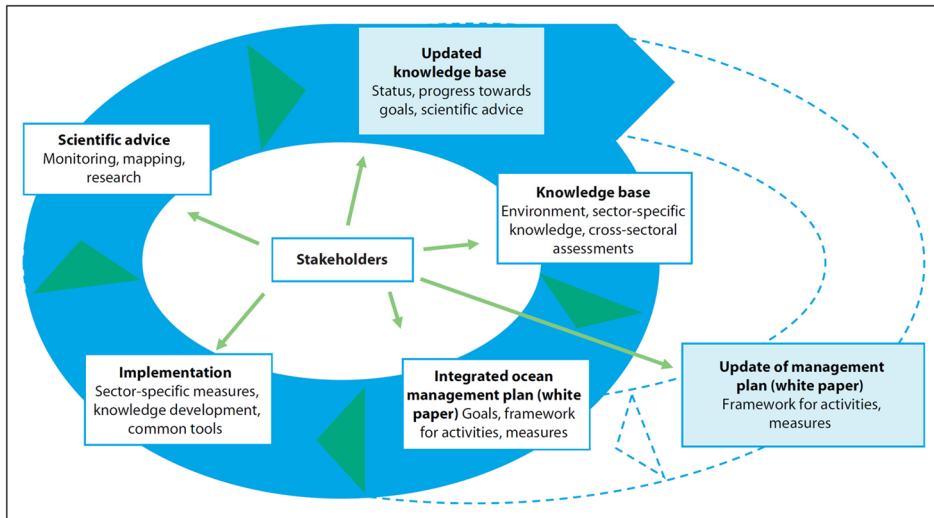


Figure 5. The planning and implementation cycle in the Norwegian ocean management plans.

Looking at the detail of the processes in the first cycles, we find the same elements, although there are differences in how they are structured. The MSFD starts with an initial assessment in which the marine waters should be characterized and the human pressures and impacts analyzed. The same tasks were undertaken in a series of assessment reports in the OMPs, which in addition identified valuable and vulnerable areas.⁸³ The MSFD's subsequent definition of good environmental status has a parallel in how the Norwegian government set out goals for ocean management. The marine strategies and the Norwegian plans conclude with programs of measures that should be implemented before new cycles start. Monitoring programs play an important role in providing feedback and input to the next iterations.⁸⁴

Management by Objectives

Management by objectives is a key approach in both plans. A goal hierarchy of objectives and targets formulates ambitions for what to achieve, thereby guiding the search for measures in the plans. Another function is to use the goals as yardsticks against which evaluations can be made. Both the EU and Norway were inspired by the idea of Ecological Quality Objectives, whereby normative goals are coupled with indicators that measure qualities of the environment, ideally with associated reference points and limit values that can assist in differentiating between acceptable and nonacceptable conditions.⁸⁵ They both concretize the goals in a system of associated descriptors (MSFD) or indicators

⁸³ MSFD, note 28, Art 8; Olsen, Holen and Hoel, note 47; Sander, note 50.

⁸⁴ MSFD, note 28, Arts 10 and 11; Report No 8, note 50.

⁸⁵ P. Heslenfeld and E. L. Enserink, "OSPAR Ecological Quality Objectives: The Utility of Health Indicators for the North Sea" (2008) 65 *ICES Journal of Marine Science* 1392.

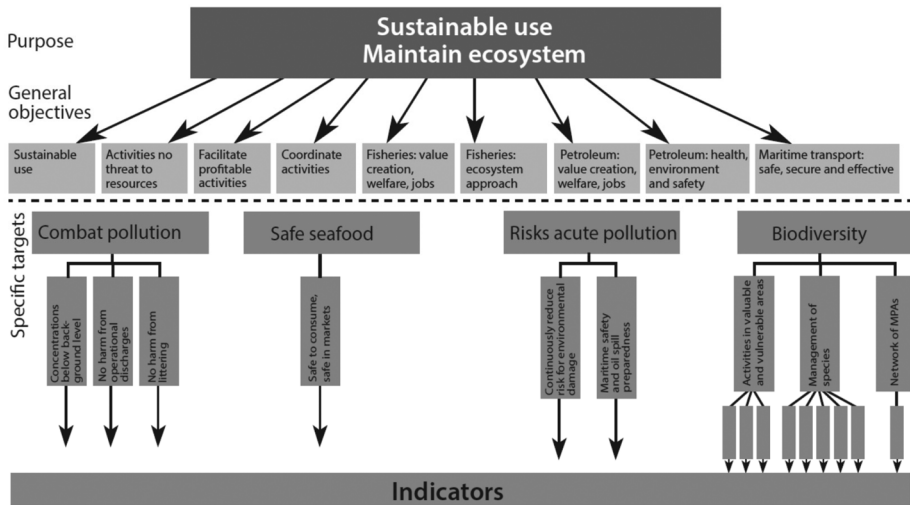


Figure 6. The hierarchy of objectives and targets in the original Barents Sea plan.⁸⁶ In the plan from 2020, the general objectives were divided into one set of objectives on “value creation, industries, and society” and another on “biodiversity and ecosystem.” The latter are coupled with environmental targets and indicators, as illustrated here, thus having the same scope as the MSFD.

(OMPs) that are linked to monitoring.⁸⁷ The updates of the Norwegian OMPs present the results from the monitoring and evaluate the progress toward the goals.⁸⁸

There is a difference in the upper level of goals in the two systems, reflecting that the OMPs also serve as the integrated ocean policy of Norway. The MSFD has the clear purpose of aiming for “good environmental status.” The Norwegian OMPs have the dual purposes of stimulating uses of the ocean for value creation and maintaining ecosystem structure and function. This has been made more explicit in the latest structuring of the objectives (Figure 6).⁸⁹ The environmental set of the objectives can be compared with those of the MSFD. Despite being formulated differently and having a structure different from that of the 11 descriptors in the MSFD, a detailed comparison demonstrates that they are compatible.⁹⁰

Some Differences

The commonalities already described represent convergence on key approaches to EBM. The reasons for this are common sources of inspiration and collaboration in which information has been shared.⁹¹ However, there are also differences:

⁸⁶ Source of the figure: Sander, note 50.

⁸⁷ Sander, Cochrane, Platjouw et al, note 63, 20.

⁸⁸ Report no 20, note 52, 58–62; Faglig forum for norske havområder 2023: *Faggrunnlag for helhetlige forvaltningsplaner for norske havområder—hovedrapport 2019–2023*, 233–240 (the consolidated document with all scientific input to the next OMP, with English summary).

⁸⁹ *Ibid*, 18–21.

⁹⁰ Sander, Cochrane, Platjouw et al, note 63, 20–25 with annexes.

⁹¹ The North Sea collaboration has been important; see HELCOM and OSPAR, note 35. Norway presented its first plan several times to the EU and was also actively involved during the drafting of the MSFD, despite not being a member state (Report No 37 2008–2009, note 51, 21; personal observations during work in the EU system when the MSFD was prepared).

- Norway strongly emphasizes knowledge production and scientific advice from its advisory bodies.⁹² In the MSFD, scientific advice is not clearly required, thus leaving it to the member states to choose the arrangements they consider necessary.
- The MSFD's requirements for transparency and public participation⁹³ exceed Norway's practice, especially on policy formulation. Norwegian stakeholders have traditionally been consulted on scientific and technical reports only, not on the policy. More recently, stakeholders have also been given one opportunity to provide input prior to the planning process in the government apparatus, which still occurs without public consultation on a draft proposal.⁹⁴
- The MSFD requires the preparation of impact assessments prior to the introduction of new measures.⁹⁵ Issues to be considered include cost-effectiveness, technical feasibility, social and economic impacts, and contributions to the achievement of the environmental targets. However, in its evaluation of the directive, the European Commission found that the member states had problems evaluating the effectiveness and efficiency of measures.⁹⁶ The Norwegian white papers have few explanations for the government's selection of measures and no systematic assessment of their contribution to achieve the objectives and targets.⁹⁷ A study of the preparation of the first two plans found that some formal assessments had been undertaken, but mostly, it seemed that the basis for selection of measures was at the discretion of civil servants about what measures would work.⁹⁸ Regardless of substantiation, political acceptance in the government was the determining factor for deciding on the measures.
- The MSFD requires planning for the implementation of the measures.⁹⁹ In Norway, this has been resolved informally without much coordination, based on trust in the sector's ability to implement measures. Nevertheless, a review of implementation results found that most of the measures in the first two plans were followed up.¹⁰⁰
- The lack of MPA designation owing to internal controversies in the government and between the ministries, was the clearest breach of intentions found in this review. After several complaints from the parliament, a white paper in 2021 brought new momentum to the designation process.¹⁰¹ In contrast, the MSFD

⁹² M. Knol, *Marine Ecosystem Governance in the Making: Planning for Petroleum Activity in the Barents Sea-Lofoten Area* (University of Tromsø, Tromsø, 2010); Andersen, note 47, chapters 8 and 9; Report no 20, note 52, 15, 62–66.

⁹³ MSFD, note 28, Art 19.

⁹⁴ Report no 20, note 52, 17; Sander, Cochrane, Platjouw et al, note 63, 27. As a contrast, the counties and municipalities that have prominent roles in coastal management follow legislation that invite stakeholders to comment at least on the scope of the planning process, and later, on a draft plan (*Plan- og bygningsloven*).

⁹⁵ MSFD, note 28, Arts 13(3), 13(5). As a parallel, the requirements and methodology for undertaking impact assessments of major interventions internally in the EU are described in European Commission, *Better Regulation Guidelines*, SWD (2021) 305 final, and the associated Better Regulation Toolbox, at: https://commission.europa.eu/law/law-making-process/planning-and-proposing-law/better-regulation/better-regulation-guidelines-and-toolbox_en (accessed 17 November).

⁹⁶ European Commission, note 60. Norwegian advisory bodies complain about the same problem when conducting ex post evaluations; refer to Faglig forum, note 88.

⁹⁷ Report no 20, note 52, 144.

⁹⁸ Sander, note 50.

⁹⁹ MSFD, note 28, Art 13(8).

¹⁰⁰ Sander, note 50, 117–118.

¹⁰¹ Report to the Storting (white paper) No 29 (2020–2021), *Norway's Integrated Plan for the Conservation of Areas of Special Importance for Marine Biodiversity*, at: <https://www.regjeringen.no/en/dokumenter/meld.-st.-29-20202021/>

requires the establishment of a network of marine protected areas. The member states doubled the area under protection, leading to the EU fulfilling its international commitment on this target at that time, but still not creating a network of MPAs.¹⁰²

- The MSFD requires the publication of an assessment report after every six-year cycle and a review of the Directive that may lead to amendments.¹⁰³ The Norwegian government has not evaluated the OMPs formally and publicly beyond some statements in the white papers.

Many of these differences relate to different procedures applied within the common approaches already described and do not change the impression of convergence.

The Implications for Understanding EBM

The guiding issue for this section is to what extent the OMPs and the MSFD support the essential definition of EBM and the key content of the associated principles.

Managing Human Activities

First, it was ascertained that EBM is about managing human activities. The MSFD clarifies that this is the mechanism by which the marine strategies function.¹⁰⁴ The OMPs refer to managing the uses of the oceans. This may sound subtle but, as noted in the preceding, it has implications for the content of a planning process and what type of knowledge is requested (see [Figure 1](#)).

The Balancing of Sustainable Use Versus Conservation

The different purposes of the two plans indicate a difference in the way they balance use versus conservation. The Norwegian OMPs have the dual purpose of stimulating value creation and employment by uses of the ocean, and at the same time maintaining the structure, functioning, productivity, and diversity of the ecosystems. Both issues are covered in the plans. In interviews, the coordinators of the interministerial steering group emphasized that there is a deliberate choice to undertake this balancing act in one instrument to stimulate integration.¹⁰⁵ However, the Norwegian government has also presented two strategies that signaled high ambitions for growth in maritime industries and is now preparing a plan for such.¹⁰⁶ The strategies referred

[id2843433](#), 6–7 (accessed 6 December 2023). The government announced in June 2022 that it will prepare new legislation that will enable designating MPAs also beyond the territorial sea, which is the boundary for the current legal mandate (*Naturmangfoldloven*).

¹⁰² MSFD, note 28, Art 13(4), 21; European Commission, note 60. The target at the time of evaluation was 10 percent.

¹⁰³ MSFD, note 28, Arts 20, 23.

¹⁰⁴ *Ibid*, Art 1(3).

¹⁰⁵ The same deliberations are relevant for the government's current consideration of how to integrate some sort of principles for MSP into the OMPs.

¹⁰⁶ Ministry of Trade, Industry and Fisheries 2021: *Blue Ocean, Green Future* provides an overview at: <https://www.regjeringen.no/contentassets/564afd76f1e34ccda982f785c33d21b9/en-gb/pdfs/regjeringens-havrapport-engelsk.pdf>

to the OMPs, but did not contain impact assessments that could substantiate that they were consistent with them. This means that the sectoral policies in Norway are informed by two sets of signals that may or may not be consistent. Since the OMPs are legally nonbinding and contain few instructions for the sectors, they provide much latitude to the individual sectors' general management of their own activities.¹⁰⁷

In contrast, the MSFD has an environmental goal alone, to achieve or maintain good environmental status, which the preamble states should have priority.¹⁰⁸ However, this must be considered in a broader policy context. At the time of formulating the MSFD, an EU maritime policy was in evolution, containing an umbrella of strategic initiatives.¹⁰⁹ Many of these were aiming for growth in ocean industries, but were to be balanced by the MSFD, which was envisaged to deliver the environmental pillar of the maritime policy.¹¹⁰ As a follow-up to the maritime policy, the EU in 2014 also adopted a Maritime Spatial Planning Directive (MSPD).¹¹¹ The balancing of different uses of the ocean that can contribute to "blue growth" is a key objective, though, within an ecosystem-based approach referring to the MSFD.¹¹² Thus, the balancing of use and conservation occurred in principal terms in an overarching umbrella instrument at the EU level, and shall be concretized by maritime spatial plans in the member states. The latter are separated from, but shall respect, their ecosystem-based marine strategies.¹¹³ This division creates a risk for incoherence between the two strategic instruments in the member states.

Three general remarks can be made. The first is indicated already, the risk of creating incoherent and inconsistent policies.¹¹⁴ This is a classical problem in segmented administrations that operate in individual "silos." Creating cross-cutting initiatives, such as EBM, is an attempt to overcome fragmentation and ensure joint work toward common goals. However, this does not eliminate the problem. Incoherence may occur when strategic initiatives have overlapping mandates. Incoherence can also occur when an overarching policy or a strategic plan informs implementors in sectoral administrations. The instruments analyzed here are

(accessed 6 December 2023). The strategies were not subjected to discussions in the parliament, like the OMPs, but contain communication of policy from the government. They have been followed up by different types of initiatives to stimulate oil and gas activities, offshore aquaculture, offshore wind energy, and seabed mining. The plan for maritime industries (*næringsplan*) will be presented in 2024 (note 54).

¹⁰⁷ E. Johansen, "Norway's Integrated Ocean Management: A Need for Stronger Protection of the Environment?" (2018) 32 *Ocean Yearbook* 239.

¹⁰⁸ MSFD, note 28, preamble (9).

¹⁰⁹ See overview with references in this factsheet: <https://www.europarl.europa.eu/factsheets/en/sheet/121/integrated-maritime-policy-of-the-european-union#Role%20of%20The%20European%20Parliament> (accessed 17 November 2023).

¹¹⁰ MSFD note 28, preamble (2); MSPD, note 111, preamble (2) and Art 3.

¹¹¹ Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning. *OJ L 257, 28.8.2014*, 135–145 [MSPD]. This is not applicable to Norway, ref note 58; Soinen and Platjouw, note 57.

¹¹² *Ibid*, preamble (2 and 4), Arts 1 and 5.

¹¹³ MSPD, *ibid*, contains general requirements to apply an ecosystem-based approach to achieve good environmental status, but, on the other hand, leaves it up to the member states to undertake the balancing between different uses and conservation, without any requirements to document whether their choices actually do contribute to the aim, as in MSFD Art 13, and without any oversight of the results from the EU.

¹¹⁴ M. Nilsson, T. Zamparutti, J. E. Petersen et al., "Understanding Policy Coherence: Analytical Framework and Examples of Sector-Environment Policy Interactions in the EU" (2012) 22 (6) *Env. Pol. Gov.* 395.

introduced by institutional layering: the addition of extra norms, procedures, and actors on top of existing structures that mostly remain unchanged.¹¹⁵ This will typically lead to incremental changes since institutions are resistant to change.¹¹⁶ Adjustments may be needed in both EBM and sectoral instruments to achieve the overarching goals.¹¹⁷

Second, both the OMPs and the MSFD illustrate the problem of striking a balance between use and conservation. Their general purposes do differ, but probably not more than being an illustration of “various, subtly differing, but roughly coinciding perceptions” of EBM in international law.¹¹⁸ Such different emphases resonate with different positions in long-lasting debates about the understandings of sustainable development, including whether environment should “come first.”¹¹⁹ The two approaches demonstrate different mechanisms for striking a balance, both of them implying a risk for policy drift during implementation.

Third, the relationship between EBM and marine spatial planning (MSP) deserves more attention. It is by no means obvious that an instrument aiming for integrated management of ecosystems can be substituted by an instrument that indeed does have many faces but ultimately relies on allocation of ocean space (zoning) as its key mechanism.¹²⁰ MSP has been introduced to achieve a range of objectives, some of which are consistent with EBM. Critical appraisals contend that in practice, MSP tends to be less concerned with environmental issues and primarily is used to advance expansion of maritime industries.¹²¹ In Europe, tensions between the MSFD and MSP have been observed.¹²² This is also recognized by the European Commission, which has warned that blue growth strategies may undermine MSFD ambitions if not implemented properly.¹²³ More empirical research and discussions are needed on the interplay between the two types of approaches, and on the conditions required for MSP to function as an effective mechanism for implementing EBM.¹²⁴

¹¹⁵ J. Mahoney and K. Thelen, “A Theory of Gradual Institutional Change” in J. Mahoney and K. Thelen (eds), *Explaining Institutional Change. Ambiguity, Agency and Power* (Cambridge University Press, 2010), 1.

¹¹⁶ Ibid; C. Kelly, G. Ellis and W. Flannery, “Conceptualising Change in Marine Governance: Learning from Transition Management” (2018) 95 *Marine Policy* 24; K. A. Alexander and M. Haward, “The Human Side of Marine Ecosystem-Based Management (EBM): ‘Sectoral Interplay’ as a Challenge to Implementing EBM” (2019) 101 *Marine Policy* 33.

¹¹⁷ S.-T. Puharinen, “Achieving Good Marine Environmental Status in the EU—Implications of the Marine Strategy Framework Directive for Member States and Blue Economic Activities” (2023) 155 *Marine Policy* 105712.

¹¹⁸ Trouwborst, note 39, 31.

¹¹⁹ B. Giddings, B. Hopwood and G. O’Brien, “Environment, Economy and Society: Fitting Them Together Into Sustainable Development” (2002) 10(4) *Sustainable Development* 187; E. Neumayer, *Weak Versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms* (4th edn.) (Edward Elgar, 2013), 1–7; De Lucia, note 3; Yaffee, note 25.

¹²⁰ P. Jones, L. M. Lieberknecht and W. Qiu, “Marine Spatial Planning in Reality: Introduction to Case Studies and Discussion of Findings” (2016) 71 *Marine Policy* 256.

¹²¹ Flannery, note 16.

¹²² Jones, Lieberknecht and Qiu, note 120.

¹²³ European Commission, note 60.

¹²⁴ One example is E. Dominguez-Tejo, G. Metternich, E. Johnston et al., “Marine Spatial Planning Advancing the Ecosystem-Based Approach to Coastal Zone Management: A Review” (2016) 72 *Marine Policy* 115.

The Three Tasks of Integration

The CBD's much-quoted definition of EBM does not explain what is meant by "integrated management," although elements can be found in the principles.¹²⁵ Integration is also a key concept in the newer definitions. I suggested that EBM can be characterized by three types of integration: (1) of the whole ecosystem; (2) of all governance arrangements for activities that affect the ecosystem; but also (3) by coupling broad strands of knowledge to planning and decision making.

The description of EBM in the OMPs explicitly states that EBM "considers ecosystems as a whole, including people."¹²⁶ The MSFD definition of EBM refers to the capacity of ecosystems and to good environmental status, which later is comprehensively defined.¹²⁷ Moreover, "Norway's OMPs are also integrated in the sense that they bring together all relevant parts of the public administrations."¹²⁸ The MSFD refers to management of human activities, but is not explicit about which activities. However, it may be inferred from the requirement of considering cumulative impacts that all activities contributing to significant impacts should be included. It follows from Norwegian practice as well as requirements in the MSFD that this may imply involving the competent authorities at any level, including international bodies.¹²⁹

On the integration of knowledge, the two systems at a first glance may seem to diverge. The Norwegian government emphasizes that the OMPs are knowledge-based and refers to its use of advisory bodies.¹³⁰ The MSFD does not explicitly require the application of best available knowledge, and it does not regulate the inclusion of scientific advice or advisory bodies; that is up to the member states.¹³¹ However, the preamble calls for sound knowledge and informed policymaking.¹³² It can also be argued that it would be inconceivable to meet the many requirements in the MSFD without extensive support of knowledge. As regards the types of knowledge involved, the Norwegian OMPs rely almost exclusively on scientific rather than traditional knowledge, with a demand for advice that until recently only required input from the natural sciences. The only reference to knowledge in the MSFD calls for sound knowledge on the state of the environment by marine research and monitoring, which indicate natural sciences. However, undertaking impact assessment of measures requires good skills in, for instance, policy analysis or regulatory impact assessment. As a conclusion, it is suggested that the two instruments support general requirements for informed policymaking by the mobilization of best available science. When this is specified in terms of how it should be organized or what types of knowledge that is needed, it seems that different contexts and traditions come into play.

¹²⁵ CBD's Malawi Principles, note 7. Principle 5 on maintaining ecosystem services, 6 on limits to ecosystem functioning, 10 on balancing conservation and use, and 12 on involvement of all sectors of society and scientific disciplines are most relevant to the specification of "integration" suggested here.

¹²⁶ Report no 20, note 52, 15.

¹²⁷ MSFD, note 28, Arts 1(3), 3(4), 3(5).

¹²⁸ Report no 20, note 52, 15.

¹²⁹ MSFD, note 28, Arts 6, 13(5), 15.

¹³⁰ Report no 20, note 52, 12.

¹³¹ MSPD, note 111, on the other hand, contains requirements for best available knowledge, data, and information in preamble (18, 24), Art 6(e), 10.

¹³² MSFD, note 28, preamble (23).

The EU's requirement to assess the effects of measures is noteworthy also beyond the discussion of types of knowledge needed. It underscores the importance of defining the planning to identify appropriate measures and the political process of selecting among them as a separate step in the EBM process (see [Figure 1](#)). This is neglected or undercommunicated in much of the literature and guidance on EBM.¹³³

Supporting Principles

Turning to the nine principles synthesized by the Arctic Council, several of these elaborate on what has been suggested as elements of an essential definition of EBM (for example, principle 1, on maintaining ecological functions and services, 4, on balancing conservation and sustainable use, 5, on addressing cumulative impacts, and 6, on knowledge). As regards principle 2 on setting management objectives and principle 9 on flexible and adaptive efforts, these were included as common elements of the OMPs and the MSFD. For the remaining principles, one could briefly comment:

- Principle 3 on the spatial application of EBM:
Both systems define the ecosystems to be managed based on a pragmatic combination of ecological criteria and boundaries of national jurisdiction, not on ecological criteria alone. The MSFD mandates at least two geographical levels, regions and subregions, thereby following advice about different spatial applications. Further subdivisions of the oceans on ecological grounds may occur, but finding out would require analyzing national practices and probably instruments other than the marine strategies.
- Principle 8 on transboundary connections between ecosystems and partnership:
This is linked to the principle above since the need for connections depends on the boundaries established. The MSFD contains extensive requirements for transboundary collaboration with other states to achieve coherent approaches in monitoring, assessments, and measures. This has been a difficult requirement to put into practice.¹³⁴ Norway has tried to take a broad view in its assessments by considering a marine ecosystem wider than its jurisdictional areas. Since 2005, there have been concerted efforts to also establish EBM on the Russian side of the Barents Sea and to create a joint EBM regime for the shared ocean, over the issue-specific collaborations that exist. Although ecosystem assessments involving Russian and Norwegian scientists have been regularly conducted, the ambition of a joint EBM regime has been abandoned since a pilot project on the Russian side was not followed up.¹³⁵
- Principle 7 on inclusiveness and participation:
As referred to above, the MSFD requirements for public consultation and information exceed Norwegian practices. However, the closed, top-down approach of

¹³³ R. Mahon, L. Fanning and P. McConney, "A Governance Perspective on the Large Marine Ecosystem Approach" (2009) 33 *Marine Policy* 317; PAME, *EA Guidelines: Implementing an Ecosystem Approach to Management of Arctic Marine Ecosystems* (Arctic Council, Tromsø, 2019).

¹³⁴ European Commission, note 60.

¹³⁵ E. Øseth and O. Korneev, "Integrated Ocean Management in the Barents Sea" in O. R. Young, P. A. Berkman and A. N. Vylegzhaning (eds), *Governing Arctic Seas: Regional Lessons from the Bering Strait and Barents Sea: Volume 1* (Springer International, 2020), 207; interview.

the Norwegian government has rarely been criticized on these grounds in Norway. This indicates that different contexts and different political cultures are important when mechanisms for participation are chosen.

- The MSFD's preamble states that the precautionary principle should be applied when devising measures and in subsequent action.¹³⁶ The latest Norwegian OMP has no reference to the principle. It probably illustrates that Norwegian politicians want to have latitude in their decision making. This does not support a universal acceptance of the linkage between EBM and precautionary decision-making.

Conclusions

In the introduction to this article, I referred to developments that indicate changes in international ocean governance over the last two decades. In two prominent examples of global biodiversity governance, EBM is briefly mentioned as a principle only, not as anything to be put into practice. Instead of EBM, marine spatial planning has become a dominant approach for integrated ocean management, while marine protected areas seem to be preferred for conserving and restoring biodiversity. If the tales of EBM convey that it is vague, contested, and too complex to be implemented, it is unsurprising that these approaches seem more appealing. For a better understanding of how EBM can be applied, this article has focused on the essence of EBM—the ideas that convey the core of its meaning—and two European instruments that demonstrate how it can be put into practice: the Norwegian Ocean management plans (OMPs) and the EU's Marine Strategy Framework directive (MSFD).

The essential understanding of EBM is derived from two definitions that aimed for synthesis and consensus. It suggests that EBM is an approach for integrated management of human activities that aims for sustainable use of ecosystem goods and services, balanced toward conservation, so that the cumulative impacts of uses are kept below what is needed for maintaining or achieving good ecosystem health. Its specific integrative functions are the consideration of the whole ecosystem with all its components as the management object; the involvement of governing institutions for all activities affecting the ecosystem, regardless of sector and level; and the incorporation of the best available knowledge derived from broad strands of knowledge into decision making. This understanding is supported by the two European instruments examined and seems to be widely accepted. Around this core, "EBM will look different in different places, tailored to the unique mix of ecological, social and political conditions in a specific geographic area."¹³⁷ This will inevitably lead to different emphases on principles suggested in definitions of EBM beyond the essential core. Instead of considering that this variety is a symptom of vagueness and disagreement, it should rather be considered a diversity created by implementation in many contexts.

While the essence of EBM suggested above is universal, applicable in terrestrial as well as marine contexts, the OMPs and the MSFD have a narrower scope. They are European, and they apply to ocean areas beyond the coastal zone that are under

¹³⁶ MSFD, note 28, preamble (27, 44).

¹³⁷ UNEP, note 2.

national jurisdiction, thereby giving national governments a prominent role. A different geographical scope would imply different governance arrangements; national governments have very limited decision-making power in areas beyond national jurisdiction, whereas local and regional authorities often have prominent roles in the coastal zone. Such differences have implications for the specific procedures in marine EBM. Similarly, different ecological conditions and patterns of human uses will lead to different thematic scopes, having implications for which governing bodies that need to be involved.

The OMPs and the MSFD are remarkably similar in the ways they operationalize EBM. They apply similar spatial scales, use strategic planning, define cyclic, adaptive processes with similar content, and apply management by objectives. There are good reasons to believe that these elements are applicable also in contexts beyond the two instruments' oceanic scope, with the adaptations that may be necessary. Other elements, most of which are related to procedures, are different, indicating that they are contextual. These include the types of knowledge to be consulted, the organization of advisory functions, transparency and methods for participation, impact assessment of measures, and the use of precaution in decision making.

The essential definition is simple and could be used to clarify the role of EBM in relevant instruments. However, realizing its holistic ambitions and finding a balance between use and conservation are complex undertakings with many political and administrative challenges. The EU did not manage to achieve good environmental status in the European seas by 2020.¹³⁸ Norway faces a similar situation in its section of the North Sea, but the Norwegian Sea and the Barents Sea ecosystems are in a better state.¹³⁹ In both jurisdictions, the ambitions for blue growth create constant needs for striking a balance toward ecosystem health. This needs to be met with integrated management that take the complexity of human interactions with ecosystems into account, trying to understand how direct and indirect effects from climate change and other pressures interact and create cumulative impacts (see [Figure 1](#)). As this article has illustrated, there are also complex governance challenges involved. Going back to the origins of EBM, the failures following from not addressing such complexity was a motivation for the concept.¹⁴⁰ EBM offered a holistic and systemic approach as an alternative to piecemeal management, and a landscape perspective that should overcome the weaknesses of trying to lock nature into protected areas only. Some 25 years after the concept was welcomed as a prominent approach to managing nature, a nature crisis is proclaimed. This should motivate taking EBM down from the pedestal where it rests as an abstract principle, and to learn from the experience from setting it into practice. It deserves a position in the forefront among approaches that should be mobilized to address the nature crisis.

¹³⁸ European Commission, note 60; Puharinen, note 117.

¹³⁹ Faglig forum, note 88.

¹⁴⁰ Note 4.

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