



Food for Thought

Clarifying mandates for marine ecosystem-based management

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Mandates to execute ecosystem-based management exist but are not implemented sufficiently enough to reap the benefits of a growing blue economy.

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The uses, benefits, and value of the ocean from which the blue economy arises are increasingly expanding. So also are the pressures and stressors facing marine ecosystems. Marine transportation, offshore energy production, food production, coastal development, and other activities are placing increasing pressures on large portions of the World's Ocean (AORA, 2017). There is a strong need to deal with the multiple uses and pressures across multiple sectors with multiple parties that have multiple goals. Doing so also concurrently provides business opportunities to address these challenges.

To address these multiple ocean-uses among a wide array of sectors, it is well recognized that an ecosystem-based approach to management (EBM) is warranted (Leslie and McLeod, 2007). Yet despite the clearly recognized value of addressing trade-offs and prioritizing outcomes via execution of EBM, it is not widespread in practice. Several countries and organizations have committed to implementing EBM (Rodriguez, 2017), but it remains an exception

in actual ocean management practice. One major impediment has been the perception that there are inadequate mandates to fully authorize EBM (e.g. Sardà *et al.*, 2014; Marshak *et al.*, 2017). The absence of sufficient and appropriate mandates implies that governing authorities do not have the tools necessary to effectively engage in EBM nor the authority to evaluate the current and future successes of policies and management strategies.

To address the question of EBM mandate sufficiency, an international group of legal scholars, economists, social, administrative and political scientists, and natural resource practitioners was convened as part of the Atlantic Ocean Research Alliance (AORA, 2018). The spectrum of coverage from over 200 legal mandates from the EU, Canadian, US, and High Seas jurisdictions was considered. From this exercise, two notable outcomes arose.

First, there are adequate, existing mandates to authorize EBM in the North Atlantic. In all jurisdictions considered, nearly all of the

ocean uses, goods and services, pressures, and stressors have some level of legal or regulatory mandate coverage. In all these jurisdictions, even those ocean uses or pressures without direct mandate coverage have some form of overarching legislation or policy to address facets of cumulative impacts, coordinate planning, and ensure comprehensive, systematic consideration of ocean uses or pressures.

It warrants noting that there is a wide range of types of mandates (Figure 1) beyond the typical legislative or regulatory mandates often invoked in mandate discussion. Policy tools and non-regulatory mandates are just as important, and those also exhibit a comparable degree of coverage for ocean use and pressure coverage as the legislative mandates, but are perhaps less widely used. We acknowledge that in some of the AORA jurisdictions the mandate for EBM could be stated more clearly or directly, but in some jurisdictions it is already quite clear and direct. The resulting conclusion is that collectively the existing laws, regulations, treaties, and policies provide sufficient mandate and a clear legal basis to support EBM for ocean management and governance in the North Atlantic. In theory, there is no legal basis not to do EBM, and in many cases a clear need to do so has emerged. Lack of mandate therefore cannot be claimed as a rationale for continued inaction on EBM.

Second, the limited adoption of EBM in practice was in most cases not due to lack of mandates, but rather due to implementation failure that is a fragmented and limited use of the EBM approach. Among the key challenges to implementing EBM were the “classics” which have been recognized as critical factors for other venues intending to achieve an integrated perspective of sector-environment uses (Turnpenny et al., 2008), including the lack of specificity of mandates, institutional constraints, failure to provide sufficient and ongoing institutional resources, different ways of producing and integrating knowledge, and the unevenness of capacity to operationalize EBM among administrations and

stakeholders. Additionally, mandates can be viewed as providing an authority to allow for the execution of governance activity vs. requiring that such activity be executed. It is this distinction among not only the types (Figure 1), but also the role of mandates that may be hindering the implementation of EBM. Political will is a necessary factor in the successful implementation of EBM given that it usually crosses political and administrative boundaries (AORA, 2018). Political will is often expressed through political mandate and may be reflected in a variety of ways; it can be formally expressed through legislative or programmatic action or more fluidly via informal means such as policy declarations (i.e. statements by Ministers or in the annual budgeting process) as depicted in Figure 1 as non-regulatory tools. Thus, EBM is an approach that varies considerably across jurisdictions in how it is interpreted and implemented, leading to confusion and overlap with other management efforts. We note that issues of linguistic uncertainty regarding what marine EBM means are now much less of an issue (Link and Browman 2014, 2017; Marshak et al., 2017), but how to actually implement EBM in practice for a given set of conditions remains a challenge. EBM can also challenge existing ocean governance paradigms (e.g. Berkes, 2012; Ramirez-Monsalve et al., 2016), thereby potentially exacerbating institutional and sectoral conflicts.

It is imperative to address and resolve these potential problems and to develop governance and management solutions if successful implementation of EBM is to be achieved. In many instances these will not be revolutionary (Berkes, 2012) but rather a transformation evolving from the consolidation of existing mandates, ensuring their coherence (Ramirez-Monsalve et al., 2016; Rouillard et al., 2018), and linkage with political initiatives (UN, 2017) and scientific advances (e.g. AORA, 2017; Zador et al., 2017). All these are ongoing in the three AORA jurisdictions and can help to build momentum to nurture alliances for EBM implementation and maturation.

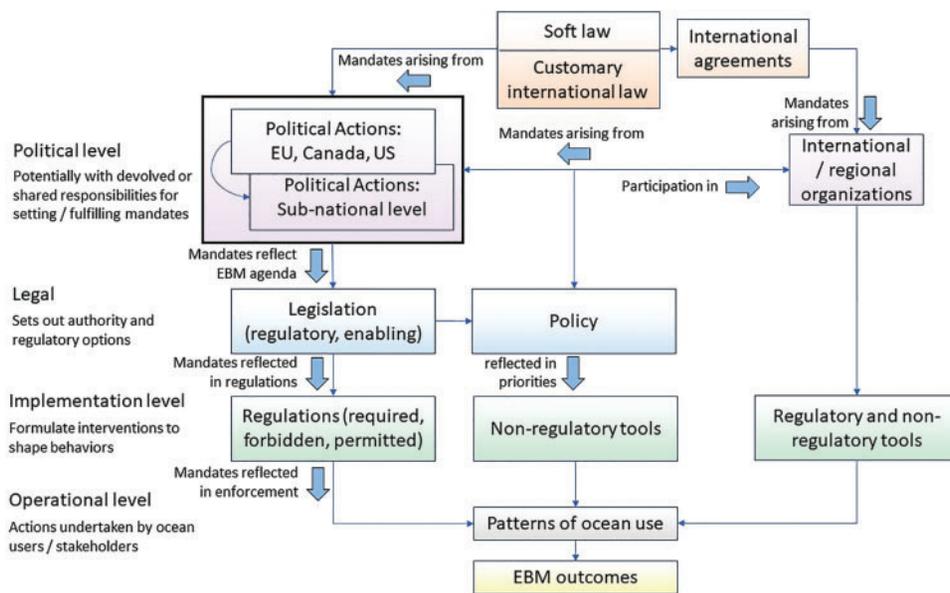


Figure 1. The conceptual multi-level approach depicting political mandate, legislative structure, and non-regulatory implementing policy. Mandates to implement EBM exist in international, national, and regional levels, and vary in their degree of prescriptiveness—i.e. allowing (enabling) vs. requiring (regulatory)—and in their degree of formality—legislative vs. policy statement. Providers of knowledge into the arena of ecosystem-based management should be aware of that arena and the distinctions between legislative/regulative processes and policy/other tools.

The scientific context within which EBM mandates operate have advanced significantly since the origins of the EBM debate 30–40 years ago (WCED, 1987). We now have at our disposal larger and more readily available time series of data, increased computing capacity able to run fully coupled social-ecological system models, increasing appreciation of incorporating social, cultural, and indigenous peoples' values and knowledge, and recognition that there are carrying capacity constraints with respect to ocean resources and use. From a political and legal perspective, we see a more inter-connected global economy and thus interdependencies and high degree of trade-offs, increased geographic conflict over resource access and utilization, and a clearly acknowledged need for conflict resolution and de-escalation across and within ocean use sectors (e.g. WBGU, 2013). The international policy agenda has also advanced and now reflects increased public awareness of and demand for attention on ocean environmental issues, the recognition of sustainable development principles, and the establishment and adoption of sustainable development goals (UN, 2017). Advances in the social sciences now allow us to better value ecosystem goods and services, conduct trade-off analyses, integrate broader knowledge paradigms, and transparently explore governance strategies and management options within and across jurisdictions. Advances across disciplines should provide the scientific and policy tools to facilitate further implementation of EBM, to empower an integrated and common approach to ocean governance and to take advantage of untapped blue economy potential. The knowledge base we have now compared with even 10–20 years ago gives us the capacity to effectively implement EBM.

Ultimately mitigating these challenges of implementation requires recognizing the benefits of EBM. The scientific and management rationales and benefits of doing EBM have been well chronicled (e.g. Leslie and McLeod, 2007; Link and Browman, 2014), but a clearer, stronger business case for EBM, and ultimately for the blue economy, is warranted. The argument that EBM is a wise societal investment involves a number of factors. Any such analysis first needs to include the economic benefits (i.e. profits, resource rent capture, spin-off benefits) of Business as Usual (BAU) scenarios relative to scenarios where EBM is successfully implemented. Second, society must recognize that private benefits are only one part of the overall benefits accruing to society and should also account for a broad range of environment benefits (e.g. human health, community well-being, technological development opportunities) that depend on healthy oceans. Additionally, consideration and comparison of the transactions costs (i.e. the costs of coordination, negotiation, litigation, monitoring, and enforcement) of governance for BAU and EBM scenarios is needed.

The business case for EBM is founded on the assertions that economic profitability for the private sector (and spin-offs and tax revenues) will decline if ocean resources are over-exploited over time, that non-market benefits derived from ecosystem services are usually inadequately accounted for in BAU analyses and that non-market and social benefits under BAU will erode as the public recognizes deteriorating ocean conditions. BAU will likely lead to increased levels of contestation and costs over time given competing, multiple objectives across ocean uses and pressures. Implementing EBM implies upfront costs (e.g. negotiations, development or revision of governance venues and structures, revised legislation, etc.) that are higher than BAU but reduce losses in the longer-term (i.e. due to reduced levels of conflict, longer-term profit, continued delivery ecosystem goods and

service, etc.). Investments in EBM also serve to deliver more predictable, reliable, ocean governance, with benefits to the private sector that help protect profitability in the face of increasing environmental uncertainty. A more predictable social, economic, and political environment also allows for longer planning horizons, and the ability to invest accordingly for longer-term returns. The deliberative and participatory orientation of EBM (Rudd, 2004) also helps alleviate uncertainty and integrate knowledge from the natural, social, and legal sciences. If the business case for EBM grows stronger, through better articulation of its benefits or increasing awareness of the environmental and political costs of BAU, we should expect to see increased levels of political support for EBM implementation efforts.

To improve implementation of EBM and thereby obtain the benefits of doing so, we recommend the following items for AORA jurisdictions, with probable applicability well beyond just the North Atlantic. First would be to facilitate further institutionalization of EBM by realignment of funding from project to base budget to ensure sustained and long-term capacity. Next would be to revisit and consider the effectiveness and impact of existing overarching, integrative mandate(s), along with more effective use of existing mandates to implement EBM. We recommend mitigation of implementation barriers, partly by identifying and acknowledging implementation challenges and partly by better articulating the benefits of EBM in a political, economic, and social context. Realignment of calls for research need to be increasingly cross-disciplinary to address both institutionalization and implementation barriers of EBM. Ultimately the best business case for EBM is that it offers a dynamic, adaptive, and holistic approach to ocean management, developed over more than two decades, to address the multiple and complex pressures facing our global ocean.

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