

Mainline Summary

The Role of Science in Strengthening an Integrated Policy
Approach to our Seas and Oceans II

August 2018

EEAC Working Group on Marine Affairs



About the EEAC Network

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Introduction

As the co-chairs of the Working Group on Marine Affairs of the European Network of Environment and Sustainable Development Advisory Councils (EEAC), we are pleased to present this mainline summary. Our purpose in doing so is to share the main outcomes of the workshop entitled 'The Role of Science in Strengthening an Integrated Policy Approach to our Seas and Oceans II', which was organized by our network in May 2018. [This session was a follow-up to the session held in the European Parliament on 14 November 2017.](#)

The United Nations Agenda 2030 (through its Sustainable Development Goal 14), the Convention on Biological Diversity (through its Aichi Target 11) and European policies on maritime and marine affairs establish the external framework of the debate on marine ecosystems. An effective implementation of the Marine Strategy Framework Directive (MSFD) in Europe and the achievement of Aichi Target 11¹ at the global level will be crucial to ensuring sustainable use of the seas, which is the core message of SDG 14. This requires deploying an ecosystem approach and emphasizing ecosystem health, which can be expressed through the concept of Good Environmental Status (GES), established by the MSFD.

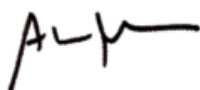
GES is to be assessed for all marine environments in Europe, regardless of their protection status, while Aichi Target 11 is aimed at the conservation of 10 percent of coastal and marine areas worldwide. Therefore, Marine Protected Areas (MPAs) have a twofold function: as key instruments to achieve Aichi Target 11, and as excellent locations for testing and improving GES measuring, monitoring and reporting.

Although European politicians have often underlined the importance of sustainable seas and oceans and are currently proposing the GES approach to the global community, it seems that neither scientists nor MPA managers have sufficient means at their disposal to carry out proper GES measurements, monitoring or reporting.

This mainline summary only touches upon the surface of an in-depth and complementary knowledge exchange between the attending parties.



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¹ The EU has committed to realizing the so-called Aichi targets, which are derived from the UN Strategic Plan for Biodiversity 2011-2020. This means that by 2020, at least 17 percent of terrestrial and inland water areas and 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.

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Opening and outline of programme

In her opening words, Dr Puri Canals (co-chair of the EEAC Working Group on Marine Affairs) emphasized the following points for attention:

- ❖ Improving MPA management is crucial to achieving the qualitative elements of Aichi Target 11.
- ❖ MPAs are excellent locations for testing and improving GES measuring, monitoring and reporting, in addition to contributing to the achievement of Aichi Target 11.
- ❖ MPAs are key elements to generate knowledge.
- ❖ It is important to distinguish between MPAs and other marine areas designed for other purposes (i.e. fisheries).
- ❖ The main point of debate is whether we can efficiently monitor the status of all marine areas.

Mr Matjaž Malgaj of the European Commission emphasized the following points for attention:

- ❖ The marine environment is central to sustainable development and to many SDGs defined in UN Agenda 2030: this is a challenge and an opportunity at the same time.
- ❖ There is high-level political recognition of the role of MPAs.
- ❖ A highly advanced instrument for assessing the status and protection of marine areas is available in the form of the MSFD.
- ❖ There is enough knowledge to act.
- ❖ A more practical perspective is needed; therefore, effective management and clarity on what constitutes good management are the key issues.

[The programme](#) of the meeting was structured on the basis of framework questions relating to MPA coverage, effective management and monitoring, and reporting. The debate arose from the answers to these questions, and contributed to identifying the key challenges related to how science can strengthen an integrated policy approach. Since the contributions went far beyond the questions themselves, the outcomes are simply presented in terms of the concerns raised and conclusions reached.

Concerns raised and suggestions made

1.1. How can we ensure full implementation of Aichi Target 11 and SDG 14?

Aichi Target 11 is aimed at realizing 10% coverage of well-conserved coastal and marine areas by 2020; and states that these areas must be “conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape”. The target must therefore be implemented both quantitatively and qualitatively. So far, major efforts have been made in Europe to achieve 10% coverage, while qualitative issues such as management or representativeness have been disregarded.

When examining the designated MPAs in Europe, one aspect stands out: a higher percentage of coverage had already been achieved by 2016, but there were two issues related to geographic location: a) the MPAs mostly cover coastal areas, while offshore areas are lagging behind; and b) the number of MPAs in Northern Europe is higher than in the South. This is a serious shortcoming, since these areas are interconnected and influence each other’s status. Despite this lack of geographic balance, the coverage of designated marine sites has increased over time and is quite extensive. However, effective management and enforcement remain a major challenge.

One relevant aspect of the MSFD is that it aims to match coverage and management while achieving coherence and equitability. This aim is shared with UN Agenda 2030 and its SDG 14, which also strengthens Aichi Target 11 in the wider context of conservation and sustainable use of seas and oceans.

1.2. Effective management and monitoring

Having exceeded the 10% coverage prescribed by Aichi Target 11 within the EU, one challenge remains: considering more than just coverage percentages, and addressing effective management and monitoring. Designated areas are to be conserved through effective and equitable management, and must constitute ecologically representative and well-connected systems of protected areas. These MPA systems, as stated in Aichi Target 11, can be complemented by other effective area-based conservation measures. In the case of the EU, this presents an opportunity to improve the management of many marine Natura 2000 sites that do not have any additional designation as MPA, and currently lack management and monitoring measures.

Furthermore, there is a need to integrate these areas into the wider landscapes and seascapes, and to consider the neglected ecological processes that allow for the preservation of biodiversity instead of being limited to sites designated on the basis of patterns of habitats and species. For the sake of effectiveness, a transition should be made from individual MPAs and OECMs to ecological networks.

Networking and coordination enhance effectiveness in management. Connectivity, representativeness, adequacy and management are among the most important parameters when it comes to networks. Networks can be used to create or identify units of management: if coherent spaces can be identified, then coherent and effective management can be realized.

In general terms, there is insufficient scientific knowledge both for assessing the effectiveness of management and monitoring, and for informing decision-makers.

1.3. From MPA management to GES assessment

The MSFD exceeds the scope of Aichi Target 11 since it covers all marine environments (not just protected areas). The MSFD states that the GES of all marine environments in Europe must be assessed, not just some environments. It should be noted that this comprehensive approach is highly challenging, since each EU member state measures the GES of its marine environments in a different way.² However, focusing on assessing the GES of protected waters could enable the quick identification and testing of effective methodologies to be applied widely in the short term.

Assessing the GES of all European marine environments represents a huge task. However, this challenge can be made easier by adopting good practices drawn from MPA management, which can then be effectively used for GES assessment. In this way, MPAs can serve as pilot sites for the massive task of fully implementing the MSFD.

1.4. Enhancing cooperation between MPAs at the national and international level

At all levels, cooperation among MPAs is key to achieving management effectiveness. Management measures and knowledge must be shared and compared to really improve in terms of ecological conservation. Cooperation between regions should be enhanced to achieve consistency of actions across similar or connected areas.

A broad overview is needed for the optimal transposition of the previously-mentioned legal and policy frameworks to regional and local levels. However, this is a complex issue because local and sub-national governments usually have to face high political costs and lack the required budget to successfully implement and enforce their MPAs and marine Natura 2000 sites.

The national and international exchange of good practices between MPA managers applying similar approaches offers much potential. A good example is the EU Transatlantic MPA Partnership Project, which shows how MPAs in very different biogeographic and socio-economic contexts apply similar management solutions throughout the Atlantic basin, although the specific actions taken are adapted to each location.

² This situation can lead to a metaphoric jungle of measures when trying to obtain an overall overview. (Note: The minutes of the previous seminar stated that the MSFD could become a 'toothless tiger'.)

1.5. Evolving from the ‘chemistry point of view’ to the ecosystem approach

As prescribed by the MSFD, Good Environmental Status is measured by assessing biodiversity (pillar 1) and ecosystem functioning (pillar 2). In adopting this approach, the MSFD represents an evolution from monitoring based on a ‘chemistry point of view’ to a ‘process point of view’³, i.e. from data to patterns and life processes. However, this shift requires an upgrade of the existing monitoring systems. Monitoring chemical, biogeochemical and physical characteristics and parameters is important, but not enough. Biodiversity and ecosystem functional variables must be added to the existing monitoring systems.

It should be noted that MPAs are the ideal nodes of these monitoring systems, although there are very few long-term assessments at marine stations. Furthermore, such assessments are mostly only focused on plankton; the available long-term benthic data is very limited.

Collecting appropriate data is essential to ensure effective measurements of patterns and processes. Currently, there is a general lack of knowledge and up-to-date field data on which to base biodiversity inventories. This represents a huge obstacle for effective management. In many cases, even basic questions cannot be answered, such as those concerning extinction risk, population distribution and density, or quantitative insights into the ability of marine environments to store greenhouse gases. Consequently, it is not possible to characterize the health of marine ecosystems in a consistent way without appropriate data. A variety of causes for this lack of in-depth knowledge has been identified, ranging from a lack of taxonomists and biodiversity experts to a tendency to rely on models rather than on data collected in the field.

1.6. Good communication practices

The knowledge produced by scientists rarely reaches politicians. If it did, public research would probably be strengthened and mainstreamed. More effective communication is needed to reach out to decision-makers, taking advantage of good practices which noticeably display the success of integrated approaches.

Good literacy is needed as well, to effectively communicate to society as a whole how important oceans are to land-based ecosystems.⁴ The scientific community should improve the way it conveys general concepts, so that they can be easily understood. In addition, leaders can act as influencers by conveying simple and clear objectives to larger audiences. Furthermore, we all need to make an additional effort to increase ‘marine literacy’ among EU citizens and disseminate basic concepts such as *‘no green without blue’* or *‘nature needs half’*.

Many government authorities devote insufficient attention to marine and maritime policy. The transposition of directives from EU to national level – where they may affect seas and oceans –

³ Thiede J, Aksnes D, Bathmann U, Betti M, Boero F, Boxshall G, Cury P, Dowell M, Emmerson R, Estrada M, Fine M, Grigelis A, Herman P, Herndl G, Kuparinen J, Martinsohn JT, Prášil O, Serrão Santos R, Soomere T, Synolakis C. 2016. Marine Sustainability in an age of changing oceans and seas. EASAC policy report 28, Luxembourg: Publications Office of the European Union, 52
[pp.<http://www.interacademies.net/File.aspx?id=29455>](http://www.interacademies.net/File.aspx?id=29455)

⁴ In its previous working group session, the EEAC and its partner EASAC already stressed that the importance of seas and oceans to life on land is incontestable.

is often just an administrative process that ignores the lack of knowledge and the importance of the subject. Furthermore, there is a need to be more transparent about uncertainties, results and possible shortfalls. A transparent perspective on these topics would allow policy-makers to clearly consider their options in their pursuit of solutions.

1.7. Financing management and monitoring

The two pillars of GES assessment – biodiversity and ecosystem processes – are complex variables, and proper funding is needed to support them at all levels. Mobilizing funds from management agencies should be complemented by funds devoted to research, and actions from both sectors should be harmonized to ensure the best guidance for management and monitoring.

1.8. Reporting

In addition to analyzing biodiversity and the functioning of ecosystems, reporting on the Good Environmental Status of our seas and oceans should address a number of other issues, such as the impact of climate change and maritime activities. Taking these additional aspects into consideration will make GES reporting more holistic.

In practice, the application of this approach would imply combining knowledge of biodiversity and ecosystem functioning into a comprehensive Marine Spatial Planning (MSP) approach. Although the MSP and MSFD approach have different purposes, the interaction between them should result in positive synergies. In this respect, it is important to stress that areas should not only be designated as MPAs because they lack socio-economic importance, but rather because they meet the ecological criteria defined in the MSFD and other legal frameworks for marine conservation. However, we can currently observe that economic activities seem to be leading and are prioritized over the protection of our seas and oceans.

Conclusions

2.1. Overcoming silos

There are many opportunities for collaboration between MPA managers and scientists, in addition to the existing collaborations within each community. Working together can generate a great deal of knowledge, which can then be translated into practical management and monitoring improvements and communicated to decision-makers.

2.2. Spin-off

By investing in MPA management and scientific research, governments can pave the way for full achievement of Aichi Target 11 (Convention on Biological Diversity), SDG 14 (UN Agenda 2030), and performance of GES assessments (Marine Strategy Framework Directive)

2.3. Forums for exchange

Considering that there are different views⁵ regarding the role of data in the context of MSFD implementation, spaces and forums for exchange and harmonization should be promoted by governments and EU institutions.

Appendix A: List of experts.

This mainline summary is based upon the contributions made by the participants. The Co-chairs of the EEAC Working Group on Marine Affairs wish to extend a special word of gratitude to: Mr Matjaz Malgaj and Ms Camino Liqueste (European Commission) and Prof. Dr. Ferdinando Boero (Università del Salento and member of EASAC) for their excellent presentations and active contributions.

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Marc Depoortere	FRDO-CFDD
Matjaz Malgaj	European Commission
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Philipe Cury	IRD
Puri Canals	CADS
Samantha Burgess	WWF

⁵ Policy-makers and some NGOs argue that the MSFD is the most advanced instrument for assessing GES and that there is enough information to act, even though some knowledge may not be available. On the other hand, other parties (often scientists) state that existing measurements are poorly substantiated, based on inadequate models and incapable of delivering reliable instructions for managers.

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